

|                               |                           |          |  |   |
|-------------------------------|---------------------------|----------|--|---|
| CRUISE: USGS AUK2017044       | DAY OF MONTH LOCAL<br>SEP | JD LOCAL | <input type="checkbox"/> DAY<br><input type="checkbox"/> NIGHT | Sunset: Sep 11, 2017<br>1900 EDT = 2300 UTC |
| LOCATION: STELLWAGEN BANK NMS | DAY OF MONTH UTC<br>SEP   | JD UTC   | VIDEO FWD<br>UPPER CAMERA                                      | FILE  |
| MONTH YEAR: SEPTEMBER 2017    |                           |          | VIDEO FWD<br>LOWER CAMERA                                      | FILE  |
| LOCAL TIME: EDT               |                           |          |  |   |

| USGS STA                         |   | SBNMS SITE     |        | CONSECUTIVE STA |     | QUAD            | VIDEO CLIP |
|----------------------------------|---|----------------|--------|-----------------|-----|-----------------|------------|
| <input type="checkbox"/> STA LOC | <input type="checkbox"/> VIDEO START<br><input type="checkbox"/> WATER COLUMN                                       | HH MM SS LOCAL | DPH, m | 42 deg          | min | -70 deg         | min        |
|                                  |   |                |        | (nav file corr) | min | (nav file corr) | min        |
| <input type="checkbox"/> STA LOC | <input type="checkbox"/> VIDEO START<br><input type="checkbox"/> ON SEABED<br><input type="checkbox"/> SMPL ATTEMPT | HH MM SS LOCAL | DPH, m | 42 deg          | min | -70 deg         | min        |
|                                  |   |                |        | (nav file corr) | min | (nav file corr) | min        |
| <input type="checkbox"/> STA LOC | <input type="checkbox"/> SAMPLE ATTEMPT   | HH MM SS LOCAL | DPH, m | 42 deg          | min | -70 deg         | min        |
|                                  |   |                |        | (nav file corr) | min | (nav file corr) | min        |
| <input type="checkbox"/> STA LOC | <input type="checkbox"/> SMPL ATTEMPT<br><input type="checkbox"/> VIDEO END<br><input type="checkbox"/> OFF SEABED  | HH MM SS LOCAL | DPH, m | 42 deg          | min | -70 deg         | min        |
|                                  |   |                |        | (nav file corr) | min | (nav file corr) | min        |
| <input type="checkbox"/> STA LOC | <input type="checkbox"/> VIDEO END  | HH MM SS LOCAL | DPH, m | 42 deg          | min | -70 deg         | min        |
|                                  |   |                |        | (nav file corr) | min | (nav file corr) | min        |

UTC = EDT + 4 HRS, EST + 5 HRS      STATION DATE AND TIME, UTC      DDD : HH : MM : SS

☐ NO SEDIMENT SAMPLE: ☐ pre-tripped; ☐ no smpl attempted; ☐ jaws partly open; ☐ washout; ☐ refusal;  
☐ too gravelly/shelly; ☐ smpl too small; ☐ grvl in jaws;

|                             |                              |   |
|-----------------------------|------------------------------|---|
| DPH TO SED SURF IN GRAB, cm | SED VOL IN GRAB, liters      | SAMPLES / DATA COLLECTED<br><input type="checkbox"/> SEDIMENT <input type="checkbox"/> CTD CAST <input type="checkbox"/> GPS NAV FILE<br><input type="checkbox"/> SAND LANCE <input type="checkbox"/> INVERTS <input type="checkbox"/> GRAB STILLs<br><input type="checkbox"/> VERT. / <input type="checkbox"/> HORIZ PLNK. TOW <input type="checkbox"/> NO INVERTS PRESENT |
| RIGHT _____ LEFT _____      | RT _____ + LFT _____ = _____ |   |

|                   |                |                   | SEABED DESCRIPTION   |
|-------------------|----------------|-------------------|--|
| att epifauna      | herring eggs   | skate             | storm sand ripples <input type="checkbox"/> Y, <input type="checkbox"/> N                                      |
| Boltenia tunic.   | lobster        | Suberites spg     | crests: <input type="checkbox"/> sharp <input type="checkbox"/> rounded  |
| brachiopod        | monkfish       | squid             | <input type="checkbox"/> straight <input type="checkbox"/> multi-rippled                                       |
| bushy bry/hyd     | moon snail     |                   | gvt in ripple troughs <input type="checkbox"/> Y, <input type="checkbox"/> N                                   |
| cancer crab       | mussels        | tunicate, B pilu. | small ripples, [ <input type="checkbox"/> intermittent] <input type="checkbox"/> Y, <input type="checkbox"/> N |
| ceri burr anem    | ocean pout     | yellow encr. spg  | sand, unrippled <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| cod; cod juvenile |                |                   | sand partial veneer on gravel <input type="checkbox"/> Y, <input type="checkbox"/> N                           |
| ctenophores       | Polymastia spg |                   | gravel pavement <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| coralline algae   | red encr. spg  |                   | boulders <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| cunner            | red hake       |                   | mud <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| dk yellow spg     | sand dollars   |                   | shells/fragments <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| Didemnum cols     |                |                   | trawled/dredged shell frags <input type="checkbox"/> Y, <input type="checkbox"/> N                             |
| dogfish           |                |                   | trawl/dredge marks <input type="checkbox"/> Y, <input type="checkbox"/> N                                      |
| finger spg        | scallops       |                   | sand lance in water column <input type="checkbox"/> Y, <input type="checkbox"/> N                              |
| flounder          | sculpin        |                   | sand lance on/in substrate <input type="checkbox"/> Y, <input type="checkbox"/> N                              |
| haddock           | sea stars      |                   | sand lance in sed sample <input type="checkbox"/> Y, <input type="checkbox"/> N                                |
| herring           |                |                   | SL size: <input type="checkbox"/> sml <input type="checkbox"/> med <input type="checkbox"/> lg                 |
|                   | silver hake    |                   | SL nos:  |

AUK 2017044 STA 4675 - 4731

Inverts collected for Anna Robuck,  
URI

~~Horiz. plankton tow collected for A. Robuck,  
URI~~

30-m Vert plankton tow coll. for Joel Llopiz,  
WHOI

CTD, <sup>down-and-upcast</sup> data collected at Sta:

4675

4676

4677

4678

4686

4693

partial CTD data at the other  
Sta due to low battery

photos  
Mar 2015



|   |  |                    |          |   |   |
|---|--|--------------------|----------|---|---|
| CRUISE: USGS AUK2017044                     |  | DAY OF MONTH LOCAL | JD LOCAL | <input checked="" type="checkbox"/> DAY | Sunset: Sep 11, 2017<br>1900 EDT = 2300 UTC |
| LOCATION: STELLWAGEN BANK NMS               |  | SEP 12             | 255      | <input type="checkbox"/> NIGHT          |   |
| MONTH YEAR: SEPTEMBER 2017                  |  | DAY OF MONTH UTC   | JD UTC   | VIDEO FWD                               | FILE  |
| LOCAL TIME: EDT                             |  | SEP 12             | 255      | UPPER CAMERA                            | 001   |
|   |  |                    |          | VIDEO FWD                               | FILE  |
|   |  |                    |          | LOWER CAMERA                            | 1855  |
| USGS STA                                    | 4675   | SBNMS SITE         | 51       | CONSECUTIVE STA                         | 1   |
|   |  |                    |          | QUAD                                    | 2   |
|   |  |                    |          | VIDEO CLIP                              | 356   |
| <input type="checkbox"/> STA LOC            | <input checked="" type="checkbox"/> VIDEO START    | HH MM SS LOCAL     | DPH, m   | 42 deg                                  | 11.274 min                                  |
|   | <input checked="" type="checkbox"/> WATER COLUMN   | 095532             | 40       | (nav file corr                          | 11.2753 min)                                |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO START               | HH MM SS LOCAL     | DPH, m   | 42 deg                                  | min   |
|   | <input checked="" type="checkbox"/> ON SEABED      | 095642             |          | (nav file corr                          | 11.2729 min)                                |
|   | <input type="checkbox"/> SMPL ATTEMPT              |                    |          | (nav file corr                          | 20.5128 min)                                |
| <input checked="" type="checkbox"/> STA LOC | <input checked="" type="checkbox"/> SAMPLE ATTEMPT | HH MM SS LOCAL     | DPH, m   | 42 deg                                  | min   |
|   |  | 095658             |          | (nav file corr                          | 11.2728 min)                                |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> SMPL ATTEMPT              | HH MM SS LOCAL     | DPH, m   | 42 deg                                  | min   |
|   | <input checked="" type="checkbox"/> VIDEO END      | 100152             |          | (nav file corr                          | 11.2672 min)                                |
|   | <input checked="" type="checkbox"/> OFF SEABED     |                    |          | (nav file corr                          | 20.4926 min)                                |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO END                 | HH MM SS LOCAL     | DPH, m   | 42 deg                                  | min   |
|   |  |                    |          | (nav file corr                          | min)  |

UTC = EDT + 4 HRS, EST + 5 HRS

STATION DATE AND TIME, UTC

DDD : HH : MM : SS

255 13 56 58

☐ NO SEDIMENT SAMPLE: ☐ pre-tripped; ☐ no smpl attempted; ☐ jaws partly open; ☐ washout; ☐ refusal;  
☐ too gravelly/shelly; ☐ smpl too small; ☐ grvl in jaws;

|                             |                         |  |  |
|-----------------------------|-------------------------|--|--|
| DPH TO SED SURF IN GRAB, cm | SED VOL IN GRAB, liters | SAMPLES / DATA COLLECTED   |  |
| RIGHT 2 LEFT 1              | RT 4.5 + LFT 4.9 = 9.4  | <input checked="" type="checkbox"/> SEDIMENT                               | <input checked="" type="checkbox"/> GPS NAV FILE       |
|                             |                         | <input type="checkbox"/> SAND LANCE  | <input type="checkbox"/> INVERTS                       |
|                             |                         | <input checked="" type="checkbox"/> VERT. / <input type="checkbox"/> HORIZ | <input checked="" type="checkbox"/> GRAB STILL         |
|                             |                         | <input type="checkbox"/> PLNK. TOW   | <input checked="" type="checkbox"/> NO INVERTS PRESENT |

|   |  |  | SEABED DESCRIPTION   |
|---|--|--|--|
| att epifauna                                | herring eggs                                     | <input checked="" type="checkbox"/> skate            | storm sand ripples <input type="checkbox"/> Y, <input type="checkbox"/> N                                      |
| Boltonia tunic.                             | lobster  | Suberites spg  | crests: <input type="checkbox"/> sharp <input type="checkbox"/> rounded  |
| brachiopod                                  | monkfish   | squid  | <input type="checkbox"/> straight <input type="checkbox"/> multi-rippled                                       |
| bushy bry/hyd                               | moon snail                                       |  | gvl in ripple troughs <input type="checkbox"/> Y, <input type="checkbox"/> N                                   |
| cancer crab                                 | mussels  | tunicate, B pilu.                                    | small ripples, [ <input type="checkbox"/> intermittent] <input type="checkbox"/> Y, <input type="checkbox"/> N |
| ceri burr anem                              | ocean pout                                       | yellow encr. spg                                     | sand, unrippled <input checked="" type="checkbox"/> Y, <input type="checkbox"/> N                              |
| cod; cod juvenile                           |  |  | sand partial veneer on gravel <input type="checkbox"/> Y, <input type="checkbox"/> N                           |
| ctenophores                                 | Polymastia spg                                   |  | gravel pavement <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| coralline algae                             | red encr. spg                                    |  | boulders <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| cunner                                      | red hake   |  | mud <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| dk yellow spg                               | <input checked="" type="checkbox"/> sand dollars |  | trawled/dredged shell frags <input type="checkbox"/> Y, <input type="checkbox"/> N                             |
| Didemnum cols                               |  | <input checked="" type="checkbox"/> shells/fragments | trawl/dredge marks <input type="checkbox"/> Y, <input type="checkbox"/> N                                      |
| <input checked="" type="checkbox"/> dogfish |  |  | sand lance in water column <input type="checkbox"/> Y, <input type="checkbox"/> N                              |
| finger spg                                  | scallops   |  | sand lance on/in substrate <input type="checkbox"/> Y, <input type="checkbox"/> N                              |
| flounder                                    | sculpin  |  | sand lance in sed sample <input type="checkbox"/> Y, <input type="checkbox"/> N                                |
| haddock                                     | sea stars  |  | SL size: <input type="checkbox"/> sml <input type="checkbox"/> med <input type="checkbox"/> lg                 |
| herring                                     |  |  | SL nos:  |
|   | silver hake                                      |  |  |

AREA OF VAN VEEN GRAB = 0.1 SQ M, MAX DEPTH = 15 CM, VOLUME = 10.8 LITERS

DISTANCE BETWEEN PARALLEL LASERS = 20 CM

PAGE VALENTINE, USGS COASTAL AND MARINE GEOLOGY PROGRAM, WOODS HOLE, MA

USGS STATION 4675

SBNMS Site 51, CONSEC STA 1

|   |  |                    |          |   |   |
|---|--|--------------------|----------|---|---|
| CRUISE: USGS AUK2017044                     |  | DAY OF MONTH LOCAL | JD LOCAL | <input checked="" type="checkbox"/> DAY | Sunset: Sep 11, 2017<br>1900 EDT = 2300 UTC |
| LOCATION: STELLWAGEN BANK NMS               |  | SEP 12             | 255      | <input type="checkbox"/> NIGHT          |   |
| MONTH YEAR: SEPTEMBER 2017                  |  | DAY OF MONTH UTC   | JD UTC   | VIDEO FWD                               | FILE  |
| LOCAL TIME: EDT                             |  | SEP 12             | 255      | <del>UPPER CAMERA</del> 1               | 002   |
|   |  |                    |          | VIDEO FWD                               | FILE  |
|   |  |                    |          | <del>LOWER CAMERA</del> 2               | 1856  |
| USGS STA                                    | 4676   | SBNMS SITE         | 52       | CONSECUTIVE STA                         | 2   |
|   |  |                    |          | QUAD                                    | 2   |
|   |  |                    |          | VIDEO CLIP                              | 357   |
| <input type="checkbox"/> STA LOC            | <input checked="" type="checkbox"/> VIDEO START  | HH MM SS LOCAL     | DPH, m   | 42 deg                                  | 11.414 min                                  |
|   | <input checked="" type="checkbox"/> WATER COLUMN | 102050             | 26       | (nav file corr                          | 11.4131 min)                                |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO START             | HH MM SS LOCAL     | DPH, m   | 42 deg                                  | min   |
|   | <input checked="" type="checkbox"/> ON SEABED    | 102140             |          | (nav file corr                          | 11.4145 min)                                |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> SMPL ATTEMPT            | HH MM SS LOCAL     | DPH, m   | 42 deg                                  | min   |
|   | <input type="checkbox"/> SAMPLE ATTEMPT          |                    |          | (nav file corr                          | min)  |
| <input checked="" type="checkbox"/> STA LOC | <input checked="" type="checkbox"/> SMPL ATTEMPT | HH MM SS LOCAL     | DPH, m   | 42 deg                                  | 11.398 min                                  |
|   | <input checked="" type="checkbox"/> VIDEO END    | 102708             |          | (nav file corr                          | 11.3983 min)                                |
|   | <input checked="" type="checkbox"/> OFF SEABED   |                    |          | (nav file corr                          | 18.5055 min)                                |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO END               | HH MM SS LOCAL     | DPH, m   | 42 deg                                  | min   |
|   |  |                    |          | (nav file corr                          | min)  |

UTC = EDT + 4 HRS, EST + 5 HRS

STATION DATE AND TIME, UTC

DD : HH : MM : SS  
255 14 27 08

☐ NO SEDIMENT SAMPLE: ☐ pre-tripped; ☐ no smpl attempted; ☐ jaws partly open; ☐ washout; ☐ refusal;  
☐ too gravelly/shelly; ☐ smpl too small; ☐ grvl in jaws;

|                             |                         |   |
|-----------------------------|-------------------------|---|
| DPH TO SED SURF IN GRAB, cm | SED VOL IN GRAB, liters | SAMPLES / DATA COLLECTED  |
| RIGHT 3 LEFT 3.5            | RT 4.0 +LFT 3.8 = 7.8   |   |
|                             |                         | <input checked="" type="checkbox"/> SEDIMENT <input checked="" type="checkbox"/> CTD CAST <input checked="" type="checkbox"/> GPS NAV FILE  |
|                             |                         | <input type="checkbox"/> SAND LANCE <input type="checkbox"/> INVERTS <input checked="" type="checkbox"/> GRAB STILL                         |
|                             |                         | <input checked="" type="checkbox"/> VERT. / <input type="checkbox"/> HORIZ PLNK. TOW <input checked="" type="checkbox"/> NO INVERTS PRESENT |

|                                     | att epifauna      | herring eggs                                     | skate             | SEABED DESCRIPTION   |
|-------------------------------------|-------------------|--|-------------------|--|
|                                     | Boltenia tunic.   | lobster  | Suberites spg     | storm sand ripples <input checked="" type="checkbox"/> Y, <input type="checkbox"/> N                           |
|                                     | brachiopod        | monkfish   | squid             | crests: <input type="checkbox"/> sharp <input checked="" type="checkbox"/> rounded                             |
|                                     | bushy bry/hyd     | moon snail                                       |                   | <input checked="" type="checkbox"/> straight <input type="checkbox"/> multi-rippled                            |
| <input checked="" type="checkbox"/> | cancer crab       | mussels  | tunicate, B pilu. | gvl in ripple troughs <input type="checkbox"/> Y, <input checked="" type="checkbox"/> N                        |
|                                     | ceri burr anem    | ocean pout                                       | yellow encr. spg  | small ripples, [ <input type="checkbox"/> intermittent] <input type="checkbox"/> Y, <input type="checkbox"/> N |
|                                     | cod; cod juvenile |  |                   | sand, unrippled <input type="checkbox"/> Y, <input type="checkbox"/> N   |
|                                     | clenophores       | Polymastia spg                                   |                   | sand partial veneer on gravel <input type="checkbox"/> Y, <input type="checkbox"/> N                           |
|                                     | coralline algae   | red encr. spg                                    |                   | gravel pavement <input type="checkbox"/> Y, <input type="checkbox"/> N   |
|                                     | cunner            | red hake   |                   | boulders <input type="checkbox"/> Y, <input type="checkbox"/> N  |
|                                     | dk yellow spg     | <input checked="" type="checkbox"/> sand dollars |                   | mud <input type="checkbox"/> Y, <input type="checkbox"/> N   |
|                                     | Didemnum cols     |  | shells/fragments  | trawled/dredged shell frags <input type="checkbox"/> Y, <input type="checkbox"/> N                             |
|                                     | dogfish           |  |                   | trawl/dredge marks <input type="checkbox"/> Y, <input type="checkbox"/> N                                      |
|                                     | finger spg        | scallops   |                   | sand lance in water column <input type="checkbox"/> Y, <input type="checkbox"/> N                              |
|                                     | flounder          | <input checked="" type="checkbox"/> sculpin      |                   | sand lance on/in substrate <input type="checkbox"/> Y, <input type="checkbox"/> N                              |
|                                     | haddock           | sea stars  |                   | sand lance in sed sample <input type="checkbox"/> Y, <input type="checkbox"/> N                                |
|                                     | herring           |  |                   | SL size: <input type="checkbox"/> sml <input type="checkbox"/> med <input type="checkbox"/> lg                 |
|                                     |                   | silver hake                                      |                   | SL nos:  |

AREA OF VAN VEEN GRAB = 0.1 SQ M; MAX DEPTH = 15 CM; VOLUME = 10.8 LITERS

DISTANCE BETWEEN PARALLEL LASERS = 20 CM

PAGE VALENTINE, USGS COASTAL AND MARINE GEOLOGY PROGRAM, WOODS HOLE, MA

USGS STATION 4676

SBNMS Site 52, CONSEC STA 2



|   |   |                                     |                        |   |  |
|---|---|-------------------------------------|------------------------|---|--|
| <b>CRUISE:</b> USGS AUK2017044              |   | <b>DAY OF MONTH LOCAL</b><br>SEP 12 | <b>JD LOCAL</b><br>255 | <input checked="" type="checkbox"/> DAY<br><input type="checkbox"/> NIGHT | <b>Sunset:</b> Sep 11, 2017<br>1900 EDT = 2300 UTC |
| <b>LOCATION:</b> STELLWAGEN BANK NMS        |   | <b>DAY OF MONTH UTC</b><br>SEP 12   | <b>JD UTC</b><br>255   | <b>VIDEO FWD UPPER CAMERA</b> 1 FILE 003                                  |  |
| <b>MONTH YEAR:</b> SEPTEMBER 2017           |   |                                     |                        | <b>VIDEO FWD LOWER CAMERA</b> 2 FILE 1857                                 |  |
| <b>LOCAL TIME:</b> EDT                      |   |                                     |                        |   |  |
| <b>USGS STA</b> 4677                        | <b>SBNMS SITE</b> 53  | <b>CONSECUTIVE STA</b> 3            |                        | <b>QUAD</b> 2   | <b>VIDEO CLIP</b> 358                              |
| <input type="checkbox"/> STA LOC            | <input checked="" type="checkbox"/> VIDEO START<br><input checked="" type="checkbox"/> WATER COLUMN   | <b>HH MM SS LOCAL</b><br>104512     | <b>DPH, m</b><br>23    | 42 deg 11.540 min<br>(nav file corr 11.5413 min)                          | -70 deg 16.293 min<br>(nav file corr 16.2915 min)  |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO START<br><input checked="" type="checkbox"/> ON SEABED<br><input type="checkbox"/> SMPL ATTEMPT                      | <b>HH MM SS LOCAL</b><br>104556     | <b>DPH, m</b>          | 42 deg 11.537 min<br>(nav file corr 11.5379 min)                          | -70 deg 16.288 min<br>(nav file corr 16.2962 min)  |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> SAMPLE ATTEMPT   | <b>HH MM SS LOCAL</b>               | <b>DPH, m</b>          | 42 deg min<br>(nav file corr min)   | -70 deg min<br>(nav file corr min)                 |
| <input checked="" type="checkbox"/> STA LOC | <input checked="" type="checkbox"/> SMPL ATTEMPT<br><input checked="" type="checkbox"/> VIDEO END<br><input checked="" type="checkbox"/> OFF SEABED | <b>HH MM SS LOCAL</b><br>105058     | <b>DPH, m</b>          | 42 deg 11.499 min<br>(nav file corr 11.4995 min)                          | -70 deg 16.337 min<br>(nav file corr 16.3354 min)  |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO END  | <b>HH MM SS LOCAL</b>               | <b>DPH, m</b>          | 42 deg min<br>(nav file corr min)   | -70 deg min<br>(nav file corr min)                 |
| <b>UTC = EDT + 4 HRS, EST + 5 HRS</b>       |   | <b>STATION DATE AND TIME, UTC</b>   |                        | <b>DDD : HH : MM : SS</b><br>255 14 50 58                                 |  |

|   |  |  |  |  |  |
|---|--|--|--|--|--|
| <input type="checkbox"/> <b>NO SEDIMENT SAMPLE:</b> <input type="checkbox"/> pre-tripped; <input type="checkbox"/> no smpl attempted; <input type="checkbox"/> jaws partly open; <input type="checkbox"/> washout; <input type="checkbox"/> refusal;<br><input type="checkbox"/> too gravelly/shelly; <input type="checkbox"/> smpl too small; <input type="checkbox"/> grvl in jaws; |  |  |  |  |  |
| <b>DPH TO SED SURF IN GRAB, cm</b><br>RIGHT 8 LEFT 9  |  | <b>SED VOL IN GRAB, liters</b><br>RT 1.9 + LFT 1.5 = 3.4 |  | <b>SAMPLES / DATA COLLECTED</b>  |  |
|   |  |  |  | <input checked="" type="checkbox"/> SEDIMENT <input checked="" type="checkbox"/> CTD CAST <input checked="" type="checkbox"/> GPS NAV FILE<br><input type="checkbox"/> SAND LANCE <input type="checkbox"/> INVERTS <input checked="" type="checkbox"/> GRAB STILL<br><input checked="" type="checkbox"/> VERT. / <input type="checkbox"/> HORIZ PLNK. TOW <input checked="" type="checkbox"/> NO INVERTS PRESENT |  |
|   |  |  | <b>SEABED DESCRIPTION</b>  |  |  |
| att epifauna  | herring eggs                                     | skate  | storm sand ripples <input checked="" type="checkbox"/> Y, <input type="checkbox"/> N                           |  |  |
| Boltenia tunic.   | lobster  | Suberites spg  | crests: <input type="checkbox"/> sharp <input checked="" type="checkbox"/> rounded                             |  |  |
| brachiopod  | monkfish   | squid  | <input checked="" type="checkbox"/> straight <input checked="" type="checkbox"/> multi-rippled                 |  |  |
| bushy bry/hyd   | moon snail                                       |  | gvl in ripple troughs <input type="checkbox"/> Y, <input type="checkbox"/> N                                   |  |  |
| <input checked="" type="checkbox"/> cancer crab   | mussels  | tunicate, B pilu.  | small ripples, [ <input type="checkbox"/> intermittent] <input type="checkbox"/> Y, <input type="checkbox"/> N |  |  |
| ceri burr anem  | ocean pout                                       | yellow encr. spg   | sand, unrippled <input type="checkbox"/> Y, <input type="checkbox"/> N   |  |  |
| cod; cod juvenile   |  |  | sand partial veneer on gravel <input type="checkbox"/> Y, <input type="checkbox"/> N                           |  |  |
| ctenophores   | Polymastia spg                                   |  | gravel pavement <input type="checkbox"/> Y, <input type="checkbox"/> N   |  |  |
| coralline algae   | red encr. spg                                    |  | boulders <input type="checkbox"/> Y, <input type="checkbox"/> N  |  |  |
| cunner  | red hake   |  | mud <input type="checkbox"/> Y, <input type="checkbox"/> N   |  |  |
| dk yellow spg   | <input checked="" type="checkbox"/> sand dollars |  | trawled/dredged shell frags <input type="checkbox"/> Y, <input type="checkbox"/> N                             |  |  |
| Didemnum cols   |  | shells/fragments   | trawl/dredge marks <input type="checkbox"/> Y, <input type="checkbox"/> N                                      |  |  |
| dogfish   |  |  | sand lance in water column <input type="checkbox"/> Y, <input type="checkbox"/> N                              |  |  |
| finger spg  | scallops   |  | sand lance on/in substrate <input type="checkbox"/> Y, <input type="checkbox"/> N                              |  |  |
| flounder  | sculpin  |  | sand lance in sed sample <input type="checkbox"/> Y, <input type="checkbox"/> N                                |  |  |
| haddock   | sea stars  |  | SL size: <input type="checkbox"/> sml <input type="checkbox"/> med <input type="checkbox"/> lg                 |  |  |
| herring   |  |  | SL nos:  |  |  |
|   | silver hake                                      |  |  |  |  |

AREA OF VAN VEEN GRAB = 0.1 SQ M. MAX DEPTH = 15 CM. VOLUME = 10.8 LITERS

DISTANCE BETWEEN PARALLEL LASERS = 20 CM

PAGE VALENTINE, USGS COASTAL AND MARINE GEOLOGY PROGRAM, WOODS HOLE, MA

USGS STATION 4677

SBNMS Site 53, CONSEC STA 3

|   |  |                            |          |   |   |
|---|--|----------------------------|----------|---|---|
| CRUISE: USGS AUK2017044                     |  | DAY OF MONTH LOCAL         | JD LOCAL | <input checked="" type="checkbox"/> DAY | Sunset: Sep 11, 2017<br>1900 EDT = 2300 UTC |
| LOCATION: STELLWAGEN BANK NMS               |  | SEP 12                     | 255      | <input type="checkbox"/> NIGHT          |   |
| MONTH YEAR: SEPTEMBER 2017                  |  | DAY OF MONTH UTC           | JD UTC   | VIDEO FWD                               | FILE  |
| LOCAL TIME: EDT                             |  | SEP 12                     | 255      | UPPER CAMERA 1                          | 004   |
|   |  |                            |          | VIDEO FWD                               | FILE  |
|   |  |                            |          | LOWER CAMERA 2                          | 1858  |
| USGS STA                                    | 4678   | SBNMS SITE                 | 54       | CONSECUTIVE STA                         | 4   |
|   |  |                            |          | QUAD                                    | 2   |
|   |  |                            |          | VIDEO CLIP                              | 359   |
| <input type="checkbox"/> STA LOC            | <input checked="" type="checkbox"/> VIDEO START  | HH MM SS LOCAL             | DPH, m   | 42 deg                                  | min   |
|   | <input checked="" type="checkbox"/> WATER COLUMN | 110658                     | 26       | (nav file corr 11.7086                  | min)  |
|   |  |                            |          | (nav file corr 14.3523                  | min)  |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO START             | HH MM SS LOCAL             | DPH, m   | 42 deg                                  | min   |
|   | <input checked="" type="checkbox"/> ON SEABED    | 110750                     |          | (nav file corr 11.7035                  | min)  |
|   | <input type="checkbox"/> SMPL ATTEMPT            |                            |          | (nav file corr 14.3637                  | min)  |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> SAMPLE ATTEMPT          | HH MM SS LOCAL             | DPH, m   | 42 deg                                  | min   |
|   |  |                            |          | (nav file corr                          | min)  |
|   |  |                            |          | (nav file corr                          | min)  |
| <input checked="" type="checkbox"/> STA LOC | <input checked="" type="checkbox"/> SMPL ATTEMPT | HH MM SS LOCAL             | DPH, m   | 42 deg                                  | min   |
|   | <input checked="" type="checkbox"/> VIDEO END    | 111304                     |          | (nav file corr 11.6705                  | min)  |
|   | <input checked="" type="checkbox"/> OFF SEABED   |                            |          | (nav file corr 14.4314                  | min)  |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO END               | HH MM SS LOCAL             | DPH, m   | 42 deg                                  | min   |
|   |  |                            |          | (nav file corr                          | min)  |
|   |  |                            |          | (nav file corr                          | min)  |
| UTC = EDT + 4 HRS, EST + 5 HRS              |  | STATION DATE AND TIME, UTC |          | DDD : HH : MM : SS<br>255 15 13 04      |   |

☐ NO SEDIMENT SAMPLE: ☐ pre-tripped; ☐ no smpl attempted; ☐ jaws partly open; ☐ washout; ☐ refusal;  
☐ too gravelly/shelly; ☐ smpl too small; ☐ grvl in jaws;

|                             |                         |  |  |
|-----------------------------|-------------------------|--|--|
| DPH TO SED SURF IN GRAB, cm | SED VOL IN GRAB, liters | SAMPLES / DATA COLLECTED   |  |
| RIGHT 2 LEFT 2.5            | RT 4.5 + LFT 4.2 = 8.7  | <input checked="" type="checkbox"/> SEDIMENT                               | <input checked="" type="checkbox"/> CTD CAST     |
|                             |                         | <input type="checkbox"/> SAND LANCE  | <input checked="" type="checkbox"/> GPS NAV FILE |
|                             |                         | <input checked="" type="checkbox"/> VERT. / <input type="checkbox"/> HORIZ | <input checked="" type="checkbox"/> GRAB STILL   |
|                             |                         | <input type="checkbox"/> PLNK. TOW   | <input type="checkbox"/> NO INVERTS PRESENT      |

|   |  |  | SEABED DESCRIPTION   |
|---|--|--|--|
| att epifauna                                    | herring eggs                                     | skate  | storm sand ripples <input checked="" type="checkbox"/> Y, <input type="checkbox"/> N                           |
| Boltonia tunic.                                 | lobster  | Suberites spg  | crests: <input checked="" type="checkbox"/> sharp <input checked="" type="checkbox"/> rounded                  |
| brachiopod                                      | monkfish   | squid  | <input checked="" type="checkbox"/> straight <input checked="" type="checkbox"/> multi-rippled                 |
| bushy bry/hyd                                   | moon snail                                       |  | gvl in ripple troughs <input type="checkbox"/> Y, <input checked="" type="checkbox"/> N                        |
| <input checked="" type="checkbox"/> cancer crab | mussels  | tunicate, B pilu.                                    | small ripples, [ <input type="checkbox"/> intermittent] <input type="checkbox"/> Y, <input type="checkbox"/> N |
| ceri burr anem                                  | ocean pout                                       | yellow encr. spg                                     | sand, unrippled <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| cod; cod juvenile                               |  |  | sand partial veneer on gravel <input type="checkbox"/> Y, <input type="checkbox"/> N                           |
| ctenophores                                     | Polymastia spg                                   |  | gravel pavement <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| coralline algae                                 | red encr. spg                                    |  | boulders <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| cunner  | red hake   |  | mud <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| dk yellow spg                                   | <input checked="" type="checkbox"/> sand dollars |  | trawled/dredged shell frags <input type="checkbox"/> Y, <input type="checkbox"/> N                             |
| Didemnum cols                                   |  | <input checked="" type="checkbox"/> shells/fragments | trawl/dredge marks <input type="checkbox"/> Y, <input type="checkbox"/> N                                      |
| dogfish   |  | 14 tv.   | sand lance in water column <input type="checkbox"/> Y, <input checked="" type="checkbox"/> N                   |
| finger spg                                      | <input checked="" type="checkbox"/> scallops     |  | sand lance on/in substrate <input type="checkbox"/> Y, <input type="checkbox"/> N                              |
| flounder  | sculpin  |  | sand lance in sed sample <input type="checkbox"/> Y, <input type="checkbox"/> N                                |
| haddock   | sea stars  |  | SL size: <input type="checkbox"/> sml <input type="checkbox"/> med <input type="checkbox"/> lg                 |
| herring   |  |  | SL nos:  |
|   | silver hake                                      |  |  |

AREA OF VAN VEEN GRAB = 0.1 SQ M. MAX DEPTH = 15 CM; VOLUME = 10.8 LITERS  
DISTANCE BETWEEN PARALLEL LASERS = 20 CM  
PAGE VALENTINE, USGS COASTAL AND MARINE GEOLOGY PROGRAM, WOODS HOLE, MA

USGS STATION 4678  
SBNMS Site 54, CONSEC STA 4



|   |   |                              |                 |   |   |
|---|---|------------------------------|-----------------|---|---|
| CRUISE: USGS AUK2017044                     |   | DAY OF MONTH LOCAL<br>SEP 12 | JD LOCAL<br>255 | <input checked="" type="checkbox"/> DAY<br><input type="checkbox"/> NIGHT | Sunset: Sep 11, 2017<br>1900 EDT = 2300 UTC       |
| LOCATION: STELLWAGEN BANK NMS               |   | DAY OF MONTH UTC<br>SEP 12   | JD UTC<br>255   | VIDEO FWD<br>UPPER CAMERA 1 FILE 005                                      |   |
| MONTH YEAR: SEPTEMBER 2017                  |   |                              |                 | VIDEO FWD<br>LOWER CAMERA 2 FILE 1859                                     |   |
| LOCAL TIME: EDT                             |   |                              |                 |   |   |
| USGS STA 4679                               | SBNMS SITE 55   | CONSECUTIVE STA 5            | QUAD 3          | VIDEO CLIP 360  |   |
| <input type="checkbox"/> STA LOC            | <input checked="" type="checkbox"/> VIDEO START<br><input checked="" type="checkbox"/> WATER COLUMN   | HH MM SS LOCAL<br>112954     | DPH, m<br>33    | 42 deg 11.789 min<br>(nav file corr 11.7901 min)                          | -70 deg 12.635 min<br>(nav file corr 12.6316 min) |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO START<br><input checked="" type="checkbox"/> ON SEABED<br><input type="checkbox"/> SMPL ATTEMPT                      | HH MM SS LOCAL<br>113104     | DPH, m          | 42 deg min<br>(nav file corr 11.7789 min)                                 | -70 deg min<br>(nav file corr 12.6441 min)        |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> SAMPLE ATTEMPT   | HH MM SS LOCAL               | DPH, m          | 42 deg min<br>(nav file corr min)   | -70 deg min<br>(nav file corr min)                |
| <input checked="" type="checkbox"/> STA LOC | <input checked="" type="checkbox"/> SMPL ATTEMPT<br><input checked="" type="checkbox"/> VIDEO END<br><input checked="" type="checkbox"/> OFF SEABED | HH MM SS LOCAL<br>113614     | DPH, m          | 42 deg 11.741 min<br>(nav file corr 11.7419 min)                          | -70 deg 12.709 min<br>(nav file corr 12.7072 min) |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO END  | HH MM SS LOCAL               | DPH, m          | 42 deg min<br>(nav file corr min)   | -70 deg min<br>(nav file corr min)                |
| UTC = EDT + 4 HRS, EST + 5 HRS              |   | STATION DATE AND TIME, UTC   |                 | DDD : HH : MM : SS<br>255 15 36 14  |   |

|  |   |  |
|--|---|--|
| <input type="checkbox"/> NO SEDIMENT SAMPLE: <input type="checkbox"/> pre-tripped; <input type="checkbox"/> no smpl attempted; <input type="checkbox"/> jaws partly open; <input type="checkbox"/> washout; <input type="checkbox"/> refusal;<br><input type="checkbox"/> too gravelly/shelly; <input type="checkbox"/> smpl too small; <input type="checkbox"/> grvl in jaws; |   |  |
| DPH TO SED SURF IN GRAB, cm<br>RIGHT 0.5 LEFT 2.5  | SED VOL IN GRAB, liters<br>RT 5.1 + LFT 4.2 = 9.3 | <b>SAMPLES / DATA COLLECTED</b><br><input checked="" type="checkbox"/> SEDIMENT <input checked="" type="checkbox"/> CTD CAST <input checked="" type="checkbox"/> GPS NAV FILE<br><input type="checkbox"/> SAND LANCE <input checked="" type="checkbox"/> INVERTS <input checked="" type="checkbox"/> GRAB STILLs<br><input checked="" type="checkbox"/> VERT. / <input type="checkbox"/> HORIZ PLNK. TOW <input type="checkbox"/> NO INVERTS PRESENT |

|   |  |  | SEABED DESCRIPTION   |
|---|--|--|--|
| att epifauna                                      | herring eggs                                     | skate  | storm sand ripples faint Y, N  |
| Boltenia tunic.                                   | lobster  | Suberites spg  | crests: <input type="checkbox"/> sharp <input checked="" type="checkbox"/> rounded                             |
| brachiopod  | monkfish   | squid  | <input type="checkbox"/> straight <input type="checkbox"/> multi-rippled                                       |
| <input checked="" type="checkbox"/> bushy bry/hyd | moon snail                                       |  | gvl in ripple troughs <input type="checkbox"/> Y, <input type="checkbox"/> N                                   |
| cancer crab                                       | mussels  | tunicate, B pilu.                                    | small ripples, [ <input type="checkbox"/> intermittent] <input type="checkbox"/> Y, <input type="checkbox"/> N |
| ceri burr anem                                    | ocean pout                                       | yellow encr. spg                                     | sand, unrippled <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| cod; cod juvenile                                 |  |  | sand partial veneer on gravel <input type="checkbox"/> Y, <input type="checkbox"/> N                           |
| ctenophores                                       | Polymastia spg                                   |  | gravel pavement <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| coralline algae                                   | red encr. spg                                    |  | boulders <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| cunner  | red hake   |  | mud <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| dk yellow spg                                     | <input checked="" type="checkbox"/> sand dollars |  | trawled/dredged shell frags <input checked="" type="checkbox"/> Y, <input type="checkbox"/> N                  |
| Didemnum cols                                     |  | <input checked="" type="checkbox"/> shells/fragments | trawl/dredge marks <input type="checkbox"/> Y, <input type="checkbox"/> N                                      |
| dogfish   |  |  | sand lance in water column <input type="checkbox"/> Y, <input checked="" type="checkbox"/> N                   |
| finger spg  | scallops   |  | sand lance on/in substrate <input type="checkbox"/> Y, <input type="checkbox"/> N                              |
| flounder  | sculpin  |  | sand lance in sed sample <input type="checkbox"/> Y, <input type="checkbox"/> N                                |
| haddock   | sea stars  |  | SL size: <input type="checkbox"/> sml <input type="checkbox"/> med <input type="checkbox"/> lg                 |
| herring   | <input checked="" type="checkbox"/> silver hake  |  | SL nos:  |

AREA OF VAN VEEN GRAB = 0.1 SQ M; MAX DEPTH = 15 CM; VOLUME = 10.8 LITERS

DISTANCE BETWEEN PARALLEL LASERS = 20 CM

PAGE VALENTINE, USGS COASTAL AND MARINE GEOLOGY PROGRAM, WOODS HOLE, MA

USGS STATION 4679

SBNMS Site 55, CONSEC STA 5

|   |   |                              |                 |   |   |
|---|---|------------------------------|-----------------|---|---|
| CRUISE: USGS AUK2017044                     |   | DAY OF MONTH LOCAL<br>SEP 12 | JD LOCAL<br>255 | <input checked="" type="checkbox"/> DAY<br><input type="checkbox"/> NIGHT | Sunset: Sep 11, 2017<br>1900 EDT = 2300 UTC       |
| LOCATION: STELLWAGEN BANK NMS               |   | DAY OF MONTH UTC<br>SEP 12   | JD UTC<br>255   | VIDEO FWD UPPER CAMERA 1 FILE 006   |   |
| MONTH YEAR: SEPTEMBER 2017                  |   |                              |                 | VIDEO FWD LOWER CAMERA 2 FILE 1860  |   |
| LOCAL TIME: EDT                             |   |                              |                 |   |   |
| USGS STA 4680                               | SBNMS SITE 56   | CONSECUTIVE STA 6            | QUAD 3          | VIDEO CLIP 361  |   |
| <input type="checkbox"/> STA LOC            | <input checked="" type="checkbox"/> VIDEO START<br><input checked="" type="checkbox"/> WATER COLUMN   | HH MM SS LOCAL<br>115246     | DPH, m<br>39    | 42 deg 12.011 min<br>(nav file corr 12.0121 min)                          | -70 deg 10.452 min<br>(nav file corr 10.4512 min) |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO START<br><input checked="" type="checkbox"/> ON SEABED<br><input type="checkbox"/> SMPL ATTEMPT                      | HH MM SS LOCAL<br>115406     | DPH, m          | 42 deg min<br>(nav file corr 11.9993 min)                                 | -70 deg min<br>(nav file corr 10.4557 min)        |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> SAMPLE ATTEMPT   | HH MM SS LOCAL               | DPH, m          | 42 deg min<br>(nav file corr min)   | -70 deg min<br>(nav file corr min)                |
| <input checked="" type="checkbox"/> STA LOC | <input checked="" type="checkbox"/> SMPL ATTEMPT<br><input checked="" type="checkbox"/> VIDEO END<br><input checked="" type="checkbox"/> OFF SEABED | HH MM SS LOCAL<br>115924     | DPH, m          | 42 deg 11.965 min<br>(nav file corr 11.9658 min)                          | -70 deg 10.488 min<br>(nav file corr 10.4868 min) |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO END  | HH MM SS LOCAL               | DPH, m          | 42 deg min<br>(nav file corr min)   | -70 deg min<br>(nav file corr min)                |
| UTC = EDT + 4 HRS, EST + 5 HRS              |   | STATION DATE AND TIME, UTC   |                 | DDD : HH : MM : SS<br>255 15 59 24  |   |

☐ NO SEDIMENT SAMPLE: ☐ pre-tripped; ☐ no smpl attempted; ☐ jaws partly open; ☐ washout; ☐ refusal;  
☐ too gravelly/shelly; ☐ smpl too small; ☐ grvl in jaws;

|   |   |  |  |
|---|---|--|--|
| DPH TO SED SURF IN GRAB, cm<br>RIGHT 3.5 LEFT 2.5 | SED VOL IN GRAB, liters<br>RT 3.8 + LFT 4.2 = 8.0 | SAMPLES / DATA COLLECTED   |  |
|   |   | <input checked="" type="checkbox"/> SEDIMENT   | <input checked="" type="checkbox"/> CTD CAST     |
|   |   | <input type="checkbox"/> SAND LANCE  | <input checked="" type="checkbox"/> GPS NAV FILE |
|   |   | <input checked="" type="checkbox"/> INVERTS  | <input checked="" type="checkbox"/> GRAB STILL   |
|   |   | <input checked="" type="checkbox"/> VERT. / <input type="checkbox"/> HORIZ PLNK. TOW | <input type="checkbox"/> NO INVERTS PRESENT      |

|   |  |                   | SEABED DESCRIPTION  |
|---|--|-------------------|---|
| att epifauna                                    | herring eggs                                     | skate             | storm sand ripples <input type="checkbox"/> Y, <input checked="" type="checkbox"/> N                                      |
| Boltonia tunic.                                 | lobster  | Suberites spg     | crests: <input type="checkbox"/> sharp <input type="checkbox"/> rounded   |
| brachiopod                                      | monkfish   | squid             | <input type="checkbox"/> straight <input type="checkbox"/> multi-rippled  |
| bushy bry/hyd                                   | moon snail                                       |                   | gvl in ripple troughs <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| <input checked="" type="checkbox"/> cancer crab | mussels  | tunicate, B pilu. | small ripples, [ <input type="checkbox"/> intermittent] <input type="checkbox"/> Y, <input checked="" type="checkbox"/> N |
| ceri burr anem                                  | ocean pout                                       | yellow encr. spg  | sand, unrippled <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| cod; cod juvenile                               |  |                   | sand partial veneer on gravel <input type="checkbox"/> Y, <input type="checkbox"/> N                                      |
| ctenophores                                     | Polymastia spg                                   |                   | gravel pavement <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| coralline algae                                 | red encr. spg                                    |                   | boulders <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| cunner  | <input checked="" type="checkbox"/> red hake     |                   | mud <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| dk yellow spg                                   | <input checked="" type="checkbox"/> sand dollars |                   | trawled/dredged shell frags <input checked="" type="checkbox"/> Y, <input type="checkbox"/> N                             |
| Didemnum cols                                   |  | shells/fragments  | trawl/dredge marks <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| dogfish   |  |                   | sand lance in water column <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| finger spg                                      | <input checked="" type="checkbox"/> scallops     |                   | sand lance on/in substrate <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| flounder  | sculpin  |                   | sand lance in sed sample <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| haddock   | sea stars  |                   | SL size: <input type="checkbox"/> sml <input type="checkbox"/> med <input type="checkbox"/> lg                            |
| herring   | <input checked="" type="checkbox"/> silver hake  |                   | SL nos:   |

AREA OF VAN VEEN GRAB = 0.1 SQ M. MAX DEPTH = 15 CM, VOLUME = 10.8 LITERS  
DISTANCE BETWEEN PARALLEL LASERS = 20 CM  
PAGE VALENTINE, USGS COASTAL AND MARINE GEOLOGY PROGRAM, WOODS HOLE, MA

USGS STATION

SBNMS Site

CONSEC STA

4680

56

6



|   |   |                              |                 |   |   |
|---|---|------------------------------|-----------------|---|---|
| CRUISE: USGS AUK2017044                     |   | DAY OF MONTH LOCAL<br>SEP 12 | JD LOCAL<br>255 | <input checked="" type="checkbox"/> DAY<br><input type="checkbox"/> NIGHT | Sunset: Sep 11, 2017<br>1900 EDT = 2300 UTC     |
| LOCATION: STELLWAGEN BANK NMS               |   | DAY OF MONTH UTC<br>SEP 12   | JD UTC<br>255   | VIDEO FWD<br>UPPER CAMERA 1 FILE 007                                      |   |
| MONTH YEAR: SEPTEMBER 2017                  |   |                              |                 | VIDEO FWD<br>LOWER CAMERA 2 FILE 1861                                     |   |
| LOCAL TIME: EDT                             |   |                              |                 |   |   |
| USGS STA 4681                               | SBNMS SITE 57   | CONSECUTIVE STA 7            | QUAD 6          | VIDEO CLIP 362  |   |
| <input type="checkbox"/> STA LOC            | <input checked="" type="checkbox"/> VIDEO START<br><input checked="" type="checkbox"/> WATER COLUMN   | HH MM SS LOCAL<br>121622     | DPH, m<br>43    | 42 deg 12.141 min<br>(nav file corr 12.1428 min)                          | -70 deg 8.475 min<br>(nav file corr 8.4742 min) |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO START<br><input checked="" type="checkbox"/> ON SEABED<br><input type="checkbox"/> SMPL ATTEMPT                      | HH MM SS LOCAL<br>121738     | DPH, m          | 42 deg min<br>(nav file corr 12.1278 min)                                 | -70 deg min<br>(nav file corr 8.4815 min)       |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> SAMPLE ATTEMPT   | HH MM SS LOCAL               | DPH, m          | 42 deg min<br>(nav file corr min)   | -70 deg min<br>(nav file corr min)              |
| <input checked="" type="checkbox"/> STA LOC | <input checked="" type="checkbox"/> SMPL ATTEMPT<br><input checked="" type="checkbox"/> VIDEO END<br><input checked="" type="checkbox"/> OFF SEABED | HH MM SS LOCAL<br>122246     | DPH, m          | 42 deg 12.086 min<br>(nav file corr 12.0869 min)                          | -70 deg 8.530 min<br>(nav file corr 8.5283 min) |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO END  | HH MM SS LOCAL               | DPH, m          | 42 deg min<br>(nav file corr min)   | -70 deg min<br>(nav file corr min)              |

UTC = EDT + 4 HRS, EST + 5 HRS

STATION DATE AND TIME, UTC

DDD : HH : MM : SS  
255 16 22 46

☐ NO SEDIMENT SAMPLE: ☐ pre-tripped; ☐ no smpl attempted; ☐ jaws partly open; ☐ washout; ☐ refusal;  
☐ too gravelly/shelly; ☐ smpl too small; ☐ grvl in jaws;

|   |   |  |  |
|---|---|--|--|
| DPH TO SED SURF IN GRAB, cm<br>RIGHT 4.5 LEFT 3.5 | SED VOL IN GRAB, liters<br>RT 3.4 + LFT 3.8 = 7.2 | SAMPLES / DATA COLLECTED   |  |
|   |   | <input checked="" type="checkbox"/> SEDIMENT   | <input checked="" type="checkbox"/> CTD CAST     |
|   |   | <input type="checkbox"/> SAND LANCE  | <input checked="" type="checkbox"/> GPS NAV FILE |
|   |   | <input checked="" type="checkbox"/> INVERTS  | <input checked="" type="checkbox"/> GRAB STILL   |
|   |   | <input checked="" type="checkbox"/> VERT. / <input type="checkbox"/> HORIZ PLNK. TOW | <input type="checkbox"/> NO INVERTS PRESENT      |

|                                     | att epifauna      | herring eggs                                     | skate  | SEABED DESCRIPTION   |
|-------------------------------------|-------------------|--|--|--|
|                                     | Boltonia tunic.   | lobster  | Suberites spg  | storm sand ripples <input type="checkbox"/> Y, <input checked="" type="checkbox"/> N                           |
|                                     | brachiopod        | monkfish   | squid  | crests: <input type="checkbox"/> sharp <input type="checkbox"/> rounded  |
|                                     | bushy bry/hyd     | moon snail                                       |  | <input type="checkbox"/> straight <input type="checkbox"/> multi-rippled                                       |
| <input checked="" type="checkbox"/> | cancer crab       | mussels  | tunicate, B pilu.                                    | gvl in ripple troughs <input type="checkbox"/> Y, <input type="checkbox"/> N                                   |
|                                     | ceri burr anem    | ocean pout                                       | yellow encr. spg                                     | small ripples, [ <input type="checkbox"/> intermittent] <input type="checkbox"/> Y, <input type="checkbox"/> N |
|                                     | cod; cod juvenile |  |  | sand, unrippled <input type="checkbox"/> Y, <input type="checkbox"/> N   |
|                                     | ctenophores       | Polymastia spg                                   |  | sand partial veneer on gravel <input type="checkbox"/> Y, <input type="checkbox"/> N                           |
|                                     | coralline algae   | red encr. spg                                    |  | gravel pavement <input type="checkbox"/> Y, <input type="checkbox"/> N   |
|                                     | cunner            | red hake   |  | boulders <input type="checkbox"/> Y, <input type="checkbox"/> N  |
|                                     | dk yellow spg     | <input checked="" type="checkbox"/> sand dollars |  | mud <input type="checkbox"/> Y, <input type="checkbox"/> N   |
|                                     | Didemnum cols     |  | <input checked="" type="checkbox"/> shells/fragments | trawled/dredged shell frags <input checked="" type="checkbox"/> Y, <input type="checkbox"/> N                  |
|                                     | dogfish           |  |  | trawl/dredge marks <input type="checkbox"/> Y, <input type="checkbox"/> N                                      |
|                                     | finger spg        | <input checked="" type="checkbox"/> scallops     |  | sand lance in water column <input type="checkbox"/> Y, <input type="checkbox"/> N                              |
| <input checked="" type="checkbox"/> | flounder          | <input checked="" type="checkbox"/> sculpin      |  | sand lance on/in substrate <input type="checkbox"/> Y, <input type="checkbox"/> N                              |
|                                     | haddock           | sea stars  |  | sand lance in sed sample <input type="checkbox"/> Y, <input type="checkbox"/> N                                |
|                                     | herring           |  |  | SL size: <input type="checkbox"/> sml <input type="checkbox"/> med <input type="checkbox"/> lg                 |
|                                     |                   | <input checked="" type="checkbox"/> silver hake  |  | SL nos:  |

|   |  |                    |          |   |   |
|---|--|--------------------|----------|---|---|
| CRUISE: USGS AUK2017044                     |  | DAY OF MONTH LOCAL | JD LOCAL | <input checked="" type="checkbox"/> DAY | Sunset: Sep 11, 2017<br>1900 EDT = 2300 UTC |
| LOCATION: STELLWAGEN BANK NMS               |  | SEP 12             | 255      | <input type="checkbox"/> NIGHT          |   |
| MONTH YEAR: SEPTEMBER 2017                  |  | DAY OF MONTH UTC   | JD UTC   | VIDEO FWD                               | FILE  |
| LOCAL TIME: EDT                             |  | SEP 12             | 255      | UPPER CAMERA 1                          | 008   |
|   |  |                    |          | VIDEO FWD                               | FILE  |
|   |  |                    |          | LOWER CAMERA 2                          | 1862  |
| USGS STA                                    | 4682   | SBNMS SITE         | 58       | CONSECUTIVE STA                         | 8   |
|   |  |                    |          | QUAD                                    | 3   |
|   |  |                    |          | VIDEO CLIP                              | 363   |
| <input type="checkbox"/> STA LOC            | <input checked="" type="checkbox"/> VIDEO START  | HH MM SS LOCAL     | DPH, m   | 42 deg                                  | 11.075 min                                  |
|   | <input checked="" type="checkbox"/> WATER COLUMN | 123624             | 42       | (nav file corr                          | 11.0768 min)                                |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO START             | HH MM SS LOCAL     | DPH, m   | 42 deg                                  | min   |
|   | <input checked="" type="checkbox"/> ON SEABED    | 123748             |          | (nav file corr                          | 11.0610 min)                                |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> SMPL ATTEMPT            |                    |          | (nav file corr                          | 8.3141 min)                                 |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> SAMPLE ATTEMPT          | HH MM SS LOCAL     | DPH, m   | 42 deg                                  | min   |
|   |  |                    |          | (nav file corr                          | min)  |
| <input checked="" type="checkbox"/> STA LOC | <input checked="" type="checkbox"/> SMPL ATTEMPT | HH MM SS LOCAL     | DPH, m   | 42 deg                                  | 11.018 min                                  |
|   | <input checked="" type="checkbox"/> VIDEO END    | 124306             |          | (nav file corr                          | 11.0181 min)                                |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO END               |                    |          | (nav file corr                          | 8.3802 min)                                 |
|   |  |                    |          | (nav file corr                          | min)  |

UTC = EDT + 4 HRS, EST + 5 HRS

STATION DATE AND TIME, UTC

DDD : HH : MM : SS  
255 16 43 06

☐ NO SEDIMENT SAMPLE: ☐ pre-tripped; ☐ no smpl attempted; ☐ jaws partly open; ☐ washout; ☐ refusal;  
☐ too gravelly/shelly; ☐ smpl too small; ☐ grvl in jaws;

DPH TO SED SURF IN GRAB, cm

SED VOL IN GRAB, liters

SAMPLES / DATA COLLECTED

RIGHT 5.5

LEFT 5

RT 2.9 + LFT 3.1 = 6

☒ SEDIMENT☒ CTD CAST☒ GPS NAV FILE☒ SAND LANCE☒ INVERTS☒ GRAB STILL☒ VERT. / ☐ HORIZ PLNK. TOW☐ NO INVERTS PRESENT

|                                     | att epifauna                                    | herring eggs                                     | skate  | SEABED DESCRIPTION   |
|-------------------------------------|---|--|--|--|
|                                     | Boltonia tunic.                                 | lobster  | Suberites spg  | storm sand ripples <input checked="" type="checkbox"/> Y, <input checked="" type="checkbox"/> N                |
|                                     | brachiopod                                      | monkfish   | squid  | crests: <input type="checkbox"/> sharp <input checked="" type="checkbox"/> rounded                             |
|                                     | bushy bry/hyd                                   | moon snail                                       |  | <input type="checkbox"/> straight <input type="checkbox"/> multi-rippled                                       |
| <input checked="" type="checkbox"/> | cancer crab                                     | mussels  | tunicate, B pilu.                                    | grvl in ripple troughs <input type="checkbox"/> Y, <input type="checkbox"/> N                                  |
|                                     | ceri burr anem                                  | ocean pout                                       | yellow encr. spg                                     | small ripples, [ <input type="checkbox"/> intermittent] <input type="checkbox"/> Y, <input type="checkbox"/> N |
|                                     | cod; cod juvenile                               |  |  | sand, unrippled <input type="checkbox"/> Y, <input type="checkbox"/> N   |
|                                     | ctenophores                                     | Polymastia spg                                   |  | sand partial veneer on gravel <input type="checkbox"/> Y, <input type="checkbox"/> N                           |
|                                     | coralline algae                                 | red encr. spg                                    |  | gravel pavement <input type="checkbox"/> Y, <input type="checkbox"/> N   |
|                                     | cunner  | red hake   |  | boulders <input type="checkbox"/> Y, <input type="checkbox"/> N  |
|                                     | dk yellow spg                                   | <input checked="" type="checkbox"/> sand dollars |  | mud <input type="checkbox"/> Y, <input type="checkbox"/> N   |
|                                     | Didemnum cols                                   |  | <input checked="" type="checkbox"/> shells/fragments | trawled/dredged shell frags <input checked="" type="checkbox"/> Y, <input type="checkbox"/> N                  |
|                                     | dogfish   |  |  | trawl/dredge marks <input type="checkbox"/> Y, <input type="checkbox"/> N                                      |
| <input checked="" type="checkbox"/> | finger spg                                      | <input checked="" type="checkbox"/> scallops     |  | sand lance in water column <input type="checkbox"/> Y, <input checked="" type="checkbox"/> N                   |
| <input checked="" type="checkbox"/> | flounder  | <input checked="" type="checkbox"/> sculpin      |  | sand lance on/in substrate <input type="checkbox"/> Y, <input checked="" type="checkbox"/> N                   |
|                                     | haddock   | sea stars  |  | sand lance in sed sample <input checked="" type="checkbox"/> Y, <input type="checkbox"/> N                     |
|                                     | herring   |  |  | SL size: <input type="checkbox"/> sml <input type="checkbox"/> med <input checked="" type="checkbox"/> lg      |
|                                     | <input checked="" type="checkbox"/> silver hake |  |  | SL nos: 1  |

AREA OF VAN VEEN GRAB = 0.1 SQ M; MAX DEPTH = 15 CM; VOLUME = 10.8 LITERS

DISTANCE BETWEEN PARALLEL LASERS = 20 CM

PAGE VAI FNT INF USGS COASTAL AND MARINE GEOLOGY PROGRAM, WOODS HOLE, MA

USGS STATION

4682

SBNMS Site

58

CONSEC STA

8



|   |  |                    |          |   |   |
|---|--|--------------------|----------|---|---|
| CRUISE: USGS AUK2017044                     |  | DAY OF MONTH LOCAL | JD LOCAL | <input checked="" type="checkbox"/> DAY | Sunset: Sep 11, 2017<br>1900 EDT = 2300 UTC |
| LOCATION: STELLWAGEN BANK NMS               |  | SEP 12             | 255      | <input type="checkbox"/> NIGHT          |   |
| MONTH YEAR: SEPTEMBER 2017                  |  | DAY OF MONTH UTC   | JD UTC   | VIDEO FWD                               | FILE  |
| LOCAL TIME: EDT                             |  | SEP 12             | 255      | UPPER CAMERA 1                          | 009   |
|   |  |                    |          | VIDEO FWD                               | FILE  |
|   |  |                    |          | LOWER CAMERA 2                          | 1863  |
| USGS STA                                    | 4683   | SBNMS SITE         | 59       | CONSECUTIVE STA                         | 9   |
| QUAD  | 3  | VIDEO CLIP         | 364      |   |   |
| <input type="checkbox"/> STA LOC            | <input checked="" type="checkbox"/> VIDEO START  | HH MM SS LOCAL     | DPH, m   | 42 deg                                  | min   |
|   | <input checked="" type="checkbox"/> WATER COLUMN | 125938             | 40       | (nav file corr 10.9806                  | min)  |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO START             | HH MM SS LOCAL     | DPH, m   | 42 deg                                  | min   |
|   | <input checked="" type="checkbox"/> ON SEABED    | 130058             |          | (nav file corr 10.9696                  | min)  |
|   | <input type="checkbox"/> SMPL ATTEMPT            |                    |          | (nav file corr 10.3184                  | min)  |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> SAMPLE ATTEMPT          | HH MM SS LOCAL     | DPH, m   | 42 deg                                  | min   |
|   |  |                    |          | (nav file corr                          | min)  |
| <input checked="" type="checkbox"/> STA LOC | <input checked="" type="checkbox"/> SMPL ATTEMPT | HH MM SS LOCAL     | DPH, m   | 42 deg                                  | min   |
|   | <input checked="" type="checkbox"/> VIDEO END    | 130616             |          | (nav file corr 10.9298                  | min)  |
|   | <input checked="" type="checkbox"/> OFF SEABED   |                    |          | (nav file corr 10.3980                  | min)  |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO END               | HH MM SS LOCAL     | DPH, m   | 42 deg                                  | min   |
|   |  |                    |          | (nav file corr                          | min)  |

UTC = EDT + 4 HRS, EST + 5 HRS

STATION DATE AND TIME, UTC

DDD : HH : MM : SS  
255 17 06 16

☐ NO SEDIMENT SAMPLE: ☐ pre-tripped; ☐ no smpl attempted; ☐ jaws partly open; ☐ washout; ☐ refusal;  
☐ too gravelly/shelly; ☐ smpl too small; ☐ grvl in jaws;

|                             |                         |  |  |
|-----------------------------|-------------------------|--|--|
| DPH TO SED SURF IN GRAB, cm | SED VOL IN GRAB, liters | SAMPLES / DATA COLLECTED   |  |
| RIGHT 2.5 LEFT 2.5          | RT 4.2 + LFT 4.2 = 8.4  | <input checked="" type="checkbox"/> SEDIMENT                               | <input checked="" type="checkbox"/> CTD CAST     |
|                             |                         | <input checked="" type="checkbox"/> SAND LANCE                             | <input checked="" type="checkbox"/> GPS NAV FILE |
|                             |                         | <input checked="" type="checkbox"/> VERT. / <input type="checkbox"/> HORIZ | <input checked="" type="checkbox"/> GRAB STILL   |
|                             |                         | <input type="checkbox"/> PLNK. TOW   | <input type="checkbox"/> NO INVERTS PRESENT      |

|   |  |  | SEABED DESCRIPTION   |
|---|--|--|--|
| att epifauna                                    | herring eggs                                     | skate  | storm sand ripples <input type="checkbox"/> Y, <input checked="" type="checkbox"/> N                           |
| Boltenia tunic.                                 | lobster  | Suberites spg  | crests: <input type="checkbox"/> sharp <input type="checkbox"/> rounded  |
| brachiopod                                      | monkfish   | squid  | <input type="checkbox"/> straight <input type="checkbox"/> multi-rippled                                       |
| bushy bry/hyd                                   | moon snail                                       |  | gvl in ripple troughs <input type="checkbox"/> Y, <input type="checkbox"/> N                                   |
| <input checked="" type="checkbox"/> cancer crab | mussels  | tunicate, B pilu.                                    | small ripples, [ <input type="checkbox"/> intermittent] <input type="checkbox"/> Y, <input type="checkbox"/> N |
| ceri burr anem                                  | <input checked="" type="checkbox"/> ocean pout   | yellow encr. spg                                     | sand, unrippled <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| cod; cod juvenile                               |  |  | sand partial veneer on gravel <input type="checkbox"/> Y, <input type="checkbox"/> N                           |
| ctenophores                                     | Polymastia spg                                   |  | gravel pavement <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| coralline algae                                 | red encr. spg                                    |  | boulders <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| cunner  | red hake   |  | mud <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| dk yellow spg                                   | <input checked="" type="checkbox"/> sand dollars |  | trawled/dredged shell frags <input checked="" type="checkbox"/> Y, <input type="checkbox"/> N                  |
| Didemnum cols                                   |  | <input checked="" type="checkbox"/> shells/fragments | trawl/dredge marks <input type="checkbox"/> Y, <input type="checkbox"/> N                                      |
| dogfish   |  |  | sand lance in water column <input type="checkbox"/> Y, <input checked="" type="checkbox"/> N                   |
| finger spg                                      | <input checked="" type="checkbox"/> scallops     |  | sand lance on/in substrate (1) <input type="checkbox"/> Y, <input type="checkbox"/> N                          |
| flounder  | sculpin  |  | sand lance in sed sample <input checked="" type="checkbox"/> Y, <input type="checkbox"/> N                     |
| haddock   | sea stars  |  | SL size: <input type="checkbox"/> sml <input type="checkbox"/> med <input checked="" type="checkbox"/> lg      |
| herring   | <input checked="" type="checkbox"/> silver hake  |  | SL nos:  |

AREA OF VAN VEEN GRAB = 0.1 SQ M; MAX DEPTH = 15 CM; VOLUME = 10.8 LITERS  
DISTANCE BETWEEN PARALLEL LASERS = 20 CM

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USGS STATION 4683  
SBNMS Site 59, CONSEC STA 9

|   |   |                          |              |  |   |
|---|---|--------------------------|--------------|--|---|
| CRUISE: USGS AUK2017044                     |   | DAY OF MONTH LOCAL       | JD LOCAL     | <input checked="" type="checkbox"/> DAY          | Sunset: Sep 11, 2017<br>1900 EDT = 2300 UTC       |
| LOCATION: STELLWAGEN BANK NMS               |   | SEP 12                   | 255          | <input type="checkbox"/> NIGHT                   |   |
| MONTH YEAR: SEPTEMBER 2017                  |   | DAY OF MONTH UTC         | JD UTC       | VIDEO FWD  | FILE  |
| LOCAL TIME: EDT                             |   | SEP 12                   | 255          | UPPER CAMERA 1                                   | 010   |
|   |   |                          |              | VIDEO FWD  | FILE  |
|   |   |                          |              | LOWER CAMERA 2                                   | 1864  |
| USGS STA                                    | 4684  | SBNMS SITE               | S10          | CONSECUTIVE STA                                  | 10  |
|   |   |                          |              | QUAD   | 3   |
|   |   |                          |              | VIDEO CLIP                                       | 365   |
| <input type="checkbox"/> STA LOC            | <input checked="" type="checkbox"/> VIDEO START<br><input checked="" type="checkbox"/> WATER COLUMN   | HH MM SS LOCAL<br>132138 | DPH, m<br>36 | 42 deg min<br>(nav file corr 10.9195 min)        | -70 deg min<br>(nav file corr 12.2441 min)        |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO START<br><input checked="" type="checkbox"/> ON SEABED<br><input type="checkbox"/> SMPL ATTEMPT                      | HH MM SS LOCAL<br>132310 | DPH, m       | 42 deg 10.904 min<br>(nav file corr 10.9057 min) | -70 deg 12.278 min<br>(nav file corr 12.2733 min) |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> SAMPLE ATTEMPT   | HH MM SS LOCAL           | DPH, m       | 42 deg min<br>(nav file corr min)                | -70 deg min<br>(nav file corr min)                |
| <input checked="" type="checkbox"/> STA LOC | <input checked="" type="checkbox"/> SMPL ATTEMPT<br><input checked="" type="checkbox"/> VIDEO END<br><input checked="" type="checkbox"/> OFF SEABED | HH MM SS LOCAL<br>132832 | DPH, m       | 42 deg 10.863 min<br>(nav file corr 10.8643 min) | -70 deg 12.365 min<br>(nav file corr 12.3626 min) |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO END  | HH MM SS LOCAL           | DPH, m       | 42 deg min<br>(nav file corr min)                | -70 deg min<br>(nav file corr min)                |

UTC = EDT + 4 HRS, EST + 5 HRS

STATION DATE AND TIME, UTC

DDD : HH : MM : SS  
255 17 28 32

☐ NO SEDIMENT SAMPLE: ☐ pre-tripped; ☐ no smpl attempted; ☐ jaws partly open; ☐ washout; ☐ refusal;  
☐ too gravelly/shelly; ☐ smpl too small; ☐ grvl in jaws;

DPH TO SED SURF IN GRAB, cm  
RIGHT 4, LEFT 3

SED VOL IN GRAB, liters  
RT 3.6 + LFT 4.0 = 7.6

#### SAMPLES / DATA COLLECTED

☒ SEDIMENT ☒ CTD CAST ☒ GPS NAV FILE  
☐ SAND LANCE ☒ INVERTS ☒ GRAB STILL  
☒ VERT. / ☐ HORIZ PLNK. TOW ☐ NO INVERTS PRESENT

|   |  |  | SEABED DESCRIPTION   |
|---|--|--|--|
| <input type="checkbox"/> att epifauna             | <input type="checkbox"/> herring eggs            | <input checked="" type="checkbox"/> skate            | storm sand ripples <input type="checkbox"/> Y, <input checked="" type="checkbox"/> N                           |
| <input type="checkbox"/> Botlenia tunic.          | <input type="checkbox"/> lobster                 | <input type="checkbox"/> Suberites spg               | crests: <input type="checkbox"/> sharp <input type="checkbox"/> rounded  |
| <input type="checkbox"/> brachiopod               | <input type="checkbox"/> monkfish                | <input type="checkbox"/> squid                       | <input type="checkbox"/> straight <input type="checkbox"/> multi-rippled                                       |
| <input checked="" type="checkbox"/> bushy bry/hyd | <input type="checkbox"/> moon snail              | <input type="checkbox"/> tunicate, B pilu.           | gvl in ripple troughs <input type="checkbox"/> Y, <input type="checkbox"/> N                                   |
| <input checked="" type="checkbox"/> cancer crab   | <input type="checkbox"/> mussels                 | <input type="checkbox"/> yellow encr. spg            | small ripples, [ <input type="checkbox"/> intermittent] <input type="checkbox"/> Y, <input type="checkbox"/> N |
| <input type="checkbox"/> ceri burr anem           | <input type="checkbox"/> ocean pout              |  | sand, unrippled <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| <input type="checkbox"/> cod; cod juvenile        |  |  | sand partial veneer on gravel <input type="checkbox"/> Y, <input type="checkbox"/> N                           |
| <input type="checkbox"/> ctenophores              | <input type="checkbox"/> Polymastia spg          |  | gravel pavement <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| <input type="checkbox"/> coralline algae          | <input type="checkbox"/> red encr. spg           |  | boulders <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| <input type="checkbox"/> cunner                   | <input type="checkbox"/> red hake                |  | mud <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| <input type="checkbox"/> dk yellow spg            | <input checked="" type="checkbox"/> sand dollars |  | trawled/dredged shell frags <input checked="" type="checkbox"/> Y, <input type="checkbox"/> N                  |
| <input type="checkbox"/> Didemnum cols            |  | <input checked="" type="checkbox"/> shells/fragments | trawl/dredge marks <input type="checkbox"/> Y, <input type="checkbox"/> N                                      |
| <input type="checkbox"/> dogfish                  |  |  | sand lance in water column <input type="checkbox"/> Y, <input type="checkbox"/> N                              |
| <input type="checkbox"/> finger spg               | <input checked="" type="checkbox"/> scallops     |  | sand lance on/in substrate <input type="checkbox"/> Y, <input type="checkbox"/> N                              |
| <input type="checkbox"/> flounder                 | <input type="checkbox"/> sculpin                 |  | sand lance in sed sample <input type="checkbox"/> Y, <input type="checkbox"/> N                                |
| <input type="checkbox"/> haddock                  | <input type="checkbox"/> sea stars               |  | SL size: <input type="checkbox"/> sml <input type="checkbox"/> med <input type="checkbox"/> lg                 |
| <input type="checkbox"/> herring                  |  |  | SL nos:  |
|   | <input type="checkbox"/> silver hake             |  |  |

AREA OF VAN VEEN GRAB = 0.1 SQ M, MAX DEPTH = 15 CM, VOLUME = 10.8 LITERS  
DISTANCE BETWEEN PARALLEL LASERS = 20 CM  
PAGE VALENTINE USGS COASTAL AND MARINE GEOLOGY PROGRAM, WOODS HOLE, MA

USGS STATION 4684  
SBNMS Site S10, CONSEC STA 10



|   |   |                              |                 |   |   |
|---|---|------------------------------|-----------------|---|---|
| CRUISE: USGS AUK2017044                     |   | DAY OF MONTH LOCAL<br>SEP 12 | JD LOCAL<br>255 | <input checked="" type="checkbox"/> DAY<br><input type="checkbox"/> NIGHT | Sunset: Sep 11, 2017<br>1900 EDT = 2300 UTC       |
| LOCATION: STELLWAGEN BANK NMS               |   | DAY OF MONTH UTC<br>SEP 12   | JD UTC<br>255   | VIDEO FWD<br>UPPER CAMERA 1   | FILE 011  |
| MONTH YEAR: SEPTEMBER 2017                  |   |                              |                 | VIDEO FWD<br>LOWER CAMERA 2   | FILE 1865   |
| LOCAL TIME: EDT                             |   |                              |                 |   |   |
| USGS STA 4685                               | SBNMS SITE 511  | CONSECUTIVE STA 11           | QUAD 2          | VIDEO CLIP 366  |   |
| <input type="checkbox"/> STA LOC            | <input checked="" type="checkbox"/> VIDEO START<br><input checked="" type="checkbox"/> WATER COLUMN   | HH MM SS LOCAL<br>134526     | DPH, m<br>28    | 42 deg 10.696 min<br>(nav file corr 10.6972 min)                          | -70 deg 14.360 min<br>(nav file corr 14.3538 min) |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO START<br><input checked="" type="checkbox"/> ON SEABED<br><input type="checkbox"/> SMPL ATTEMPT                      | HH MM SS LOCAL<br>134620     | DPH, m          | 42 deg min<br>(nav file corr 10.6922 min)                                 | -70 deg min<br>(nav file corr 14.3773 min)        |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> SAMPLE ATTEMPT   | HH MM SS LOCAL               | DPH, m          | 42 deg min<br>(nav file corr min)   | -70 deg min<br>(nav file corr min)                |
| <input checked="" type="checkbox"/> STA LOC | <input checked="" type="checkbox"/> SMPL ATTEMPT<br><input checked="" type="checkbox"/> VIDEO END<br><input checked="" type="checkbox"/> OFF SEABED | HH MM SS LOCAL<br>135128     | DPH, m          | 42 deg 10.651 min<br>(nav file corr 10.6515 min)                          | -70 deg 14.493 min<br>(nav file corr 14.4890 min) |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO END  | HH MM SS LOCAL               | DPH, m          | 42 deg min<br>(nav file corr min)   | -70 deg min<br>(nav file corr min)                |
| UTC = EDT + 4 HRS, EST + 5 HRS              |   | STATION DATE AND TIME, UTC   |                 | DDD : HH : MM : SS<br>255 17 51 28  |   |

|   |  |  |  |   |                 |         |               |            |          |       |   |            |  |   |         |                   |                |            |                  |                   |  |  |             |                |  |                 |               |  |        |  |  |               |  |  |               |  |  |         |  |      |            |          |  |  |         |  |         |           |  |         |   |  |   |
|---|--|--|--|---|-----------------|---------|---------------|------------|----------|-------|---|------------|--|---|---------|-------------------|----------------|------------|------------------|-------------------|--|--|-------------|----------------|--|-----------------|---------------|--|--------|--|--|---------------|--|--|---------------|--|--|---------|--|------|------------|----------|--|--|---------|--|---------|-----------|--|---------|---|--|---|
| <input type="checkbox"/> NO SEDIMENT SAMPLE: <input type="checkbox"/> pre-tripped; <input type="checkbox"/> no smpl attempted; <input type="checkbox"/> jaws partly open; <input type="checkbox"/> washout; <input type="checkbox"/> refusal;<br><input type="checkbox"/> too gravelly/shelly; <input type="checkbox"/> smpl too small; <input type="checkbox"/> grvl in jaws;  |  |  |  |   |                 |         |               |            |          |       |   |            |  |   |         |                   |                |            |                  |                   |  |  |             |                |  |                 |               |  |        |  |  |               |  |  |               |  |  |         |  |      |            |          |  |  |         |  |         |           |  |         |   |  |   |
| DPH TO SED SURF IN GRAB, cm<br>RIGHT 1, LEFT 3  |  | SED VOL IN GRAB, liters<br>RT 4.9 + LFT 4.0 = 8.9    | <b>SAMPLES / DATA COLLECTED</b><br><input checked="" type="checkbox"/> SEDIMENT <input checked="" type="checkbox"/> CTD CAST <input checked="" type="checkbox"/> GPS NAV FILE<br><input type="checkbox"/> SAND LANCE <input checked="" type="checkbox"/> INVERTS <input checked="" type="checkbox"/> GRAB STILLs<br><input checked="" type="checkbox"/> VERT. / <input type="checkbox"/> HORIZ PLNK. TOW <input type="checkbox"/> NO INVERTS PRESENT |   |                 |         |               |            |          |       |   |            |  |   |         |                   |                |            |                  |                   |  |  |             |                |  |                 |               |  |        |  |  |               |  |  |               |  |  |         |  |      |            |          |  |  |         |  |         |           |  |         |   |  |   |
| <table border="1"> <tr> <td>att epifauna</td> <td>herring eggs</td> <td><input checked="" type="checkbox"/> skate</td> </tr> <tr> <td>Boltenia tunic.</td> <td>lobster</td> <td>Suberites spg</td> </tr> <tr> <td>brachiopod</td> <td>monkfish</td> <td>squid</td> </tr> <tr> <td><input checked="" type="checkbox"/> bushy bry/hyd</td> <td>moon snail</td> <td></td> </tr> <tr> <td><input checked="" type="checkbox"/> cancer crab</td> <td>mussels</td> <td>tunicate, B pilu.</td> </tr> <tr> <td>ceri burr anem</td> <td>ocean pout</td> <td>yellow encr. spg</td> </tr> <tr> <td>cod; cod juvenile</td> <td></td> <td></td> </tr> <tr> <td>ctenophores</td> <td>Polymastia spg</td> <td></td> </tr> <tr> <td>coralline algae</td> <td>red encr. spg</td> <td></td> </tr> <tr> <td>cunner</td> <td><input checked="" type="checkbox"/> red hake</td> <td></td> </tr> <tr> <td>dk yellow spg</td> <td><input checked="" type="checkbox"/> sand dollars</td> <td></td> </tr> <tr> <td>Didemnum cols</td> <td></td> <td><input checked="" type="checkbox"/> shells/fragments</td> </tr> <tr> <td>dogfish</td> <td></td> <td>17 +</td> </tr> <tr> <td>finger spg</td> <td>scallops</td> <td></td> </tr> <tr> <td><input checked="" type="checkbox"/> flounder</td> <td>sculpin</td> <td></td> </tr> <tr> <td>haddock</td> <td>sea stars</td> <td></td> </tr> <tr> <td>herring</td> <td><input checked="" type="checkbox"/> silver hake</td> <td></td> </tr> </table> |  | att epifauna   | herring eggs   | <input checked="" type="checkbox"/> skate | Boltenia tunic. | lobster | Suberites spg | brachiopod | monkfish | squid | <input checked="" type="checkbox"/> bushy bry/hyd | moon snail |  | <input checked="" type="checkbox"/> cancer crab | mussels | tunicate, B pilu. | ceri burr anem | ocean pout | yellow encr. spg | cod; cod juvenile |  |  | ctenophores | Polymastia spg |  | coralline algae | red encr. spg |  | cunner | <input checked="" type="checkbox"/> red hake |  | dk yellow spg | <input checked="" type="checkbox"/> sand dollars |  | Didemnum cols |  | <input checked="" type="checkbox"/> shells/fragments | dogfish |  | 17 + | finger spg | scallops |  | <input checked="" type="checkbox"/> flounder | sculpin |  | haddock | sea stars |  | herring | <input checked="" type="checkbox"/> silver hake |  | <b>SEABED DESCRIPTION</b><br>storm sand ripples <input checked="" type="checkbox"/> Y, <input type="checkbox"/> N<br>crests: <input checked="" type="checkbox"/> sharp <input type="checkbox"/> rounded<br><input checked="" type="checkbox"/> straight <input checked="" type="checkbox"/> multi-rippled<br>gvl in ripple troughs <input type="checkbox"/> Y, <input type="checkbox"/> N<br>small ripples, [ <input type="checkbox"/> intermittent] <input type="checkbox"/> Y, <input type="checkbox"/> N<br>sand, unrippled <input type="checkbox"/> Y, <input type="checkbox"/> N<br>sand partial veneer on gravel <input type="checkbox"/> Y, <input type="checkbox"/> N<br>gravel pavement <input type="checkbox"/> Y, <input type="checkbox"/> N<br>boulders <input type="checkbox"/> Y, <input type="checkbox"/> N<br>mud <input type="checkbox"/> Y, <input type="checkbox"/> N<br>trawled/dredged shell frags <input type="checkbox"/> Y, <input type="checkbox"/> N<br>trawl/dredge marks <input type="checkbox"/> Y, <input type="checkbox"/> N<br>sand lance in water column <input type="checkbox"/> Y, <input type="checkbox"/> N<br>sand lance on/in substrate <input type="checkbox"/> Y, <input type="checkbox"/> N<br>sand lance in sed sample <input type="checkbox"/> Y, <input type="checkbox"/> N<br>SL size: <input type="checkbox"/> sml <input type="checkbox"/> med <input type="checkbox"/> lg<br>SL nos: |
| att epifauna  | herring eggs                                     | <input checked="" type="checkbox"/> skate            |  |   |                 |         |               |            |          |       |   |            |  |   |         |                   |                |            |                  |                   |  |  |             |                |  |                 |               |  |        |  |  |               |  |  |               |  |  |         |  |      |            |          |  |  |         |  |         |           |  |         |   |  |   |
| Boltenia tunic.   | lobster  | Suberites spg  |  |   |                 |         |               |            |          |       |   |            |  |   |         |                   |                |            |                  |                   |  |  |             |                |  |                 |               |  |        |  |  |               |  |  |               |  |  |         |  |      |            |          |  |  |         |  |         |           |  |         |   |  |   |
| brachiopod  | monkfish   | squid  |  |   |                 |         |               |            |          |       |   |            |  |   |         |                   |                |            |                  |                   |  |  |             |                |  |                 |               |  |        |  |  |               |  |  |               |  |  |         |  |      |            |          |  |  |         |  |         |           |  |         |   |  |   |
| <input checked="" type="checkbox"/> bushy bry/hyd   | moon snail                                       |  |  |   |                 |         |               |            |          |       |   |            |  |   |         |                   |                |            |                  |                   |  |  |             |                |  |                 |               |  |        |  |  |               |  |  |               |  |  |         |  |      |            |          |  |  |         |  |         |           |  |         |   |  |   |
| <input checked="" type="checkbox"/> cancer crab   | mussels  | tunicate, B pilu.                                    |  |   |                 |         |               |            |          |       |   |            |  |   |         |                   |                |            |                  |                   |  |  |             |                |  |                 |               |  |        |  |  |               |  |  |               |  |  |         |  |      |            |          |  |  |         |  |         |           |  |         |   |  |   |
| ceri burr anem  | ocean pout                                       | yellow encr. spg                                     |  |   |                 |         |               |            |          |       |   |            |  |   |         |                   |                |            |                  |                   |  |  |             |                |  |                 |               |  |        |  |  |               |  |  |               |  |  |         |  |      |            |          |  |  |         |  |         |           |  |         |   |  |   |
| cod; cod juvenile   |  |  |  |   |                 |         |               |            |          |       |   |            |  |   |         |                   |                |            |                  |                   |  |  |             |                |  |                 |               |  |        |  |  |               |  |  |               |  |  |         |  |      |            |          |  |  |         |  |         |           |  |         |   |  |   |
| ctenophores   | Polymastia spg                                   |  |  |   |                 |         |               |            |          |       |   |            |  |   |         |                   |                |            |                  |                   |  |  |             |                |  |                 |               |  |        |  |  |               |  |  |               |  |  |         |  |      |            |          |  |  |         |  |         |           |  |         |   |  |   |
| coralline algae   | red encr. spg                                    |  |  |   |                 |         |               |            |          |       |   |            |  |   |         |                   |                |            |                  |                   |  |  |             |                |  |                 |               |  |        |  |  |               |  |  |               |  |  |         |  |      |            |          |  |  |         |  |         |           |  |         |   |  |   |
| cunner  | <input checked="" type="checkbox"/> red hake     |  |  |   |                 |         |               |            |          |       |   |            |  |   |         |                   |                |            |                  |                   |  |  |             |                |  |                 |               |  |        |  |  |               |  |  |               |  |  |         |  |      |            |          |  |  |         |  |         |           |  |         |   |  |   |
| dk yellow spg   | <input checked="" type="checkbox"/> sand dollars |  |  |   |                 |         |               |            |          |       |   |            |  |   |         |                   |                |            |                  |                   |  |  |             |                |  |                 |               |  |        |  |  |               |  |  |               |  |  |         |  |      |            |          |  |  |         |  |         |           |  |         |   |  |   |
| Didemnum cols   |  | <input checked="" type="checkbox"/> shells/fragments |  |   |                 |         |               |            |          |       |   |            |  |   |         |                   |                |            |                  |                   |  |  |             |                |  |                 |               |  |        |  |  |               |  |  |               |  |  |         |  |      |            |          |  |  |         |  |         |           |  |         |   |  |   |
| dogfish   |  | 17 +   |  |   |                 |         |               |            |          |       |   |            |  |   |         |                   |                |            |                  |                   |  |  |             |                |  |                 |               |  |        |  |  |               |  |  |               |  |  |         |  |      |            |          |  |  |         |  |         |           |  |         |   |  |   |
| finger spg  | scallops   |  |  |   |                 |         |               |            |          |       |   |            |  |   |         |                   |                |            |                  |                   |  |  |             |                |  |                 |               |  |        |  |  |               |  |  |               |  |  |         |  |      |            |          |  |  |         |  |         |           |  |         |   |  |   |
| <input checked="" type="checkbox"/> flounder  | sculpin  |  |  |   |                 |         |               |            |          |       |   |            |  |   |         |                   |                |            |                  |                   |  |  |             |                |  |                 |               |  |        |  |  |               |  |  |               |  |  |         |  |      |            |          |  |  |         |  |         |           |  |         |   |  |   |
| haddock   | sea stars  |  |  |   |                 |         |               |            |          |       |   |            |  |   |         |                   |                |            |                  |                   |  |  |             |                |  |                 |               |  |        |  |  |               |  |  |               |  |  |         |  |      |            |          |  |  |         |  |         |           |  |         |   |  |   |
| herring   | <input checked="" type="checkbox"/> silver hake  |  |  |   |                 |         |               |            |          |       |   |            |  |   |         |                   |                |            |                  |                   |  |  |             |                |  |                 |               |  |        |  |  |               |  |  |               |  |  |         |  |      |            |          |  |  |         |  |         |           |  |         |   |  |   |

|   |  |                            |          |   |   |
|---|--|----------------------------|----------|---|---|
| CRUISE: USGS AUK2017044                     |  | DAY OF MONTH LOCAL         | JD LOCAL | <input checked="" type="checkbox"/> DAY | Sunset: Sep 11, 2017<br>1900 EDT = 2300 UTC |
| LOCATION: STELLWAGEN BANK NMS               |  | SEP 12                     | 255      | <input type="checkbox"/> NIGHT          |   |
| MONTH YEAR: SEPTEMBER 2017                  |  | DAY OF MONTH UTC           | JD UTC   | VIDEO FWD UPPER CAMERA                  | FILE 012                                    |
| LOCAL TIME: EDT                             |  | SEP 12                     | 255      | VIDEO FWD LOWER CAMERA                  | FILE 1866                                   |
| USGS STA 4686                               | SBNMS SITE 512                                   | CONSECUTIVE STA 12         | QUAD 2   | VIDEO CLIP 4686                         |   |
| <input type="checkbox"/> STA LOC            | <input checked="" type="checkbox"/> VIDEO START  | HH MM SS LOCAL             | DPH, m   | 42 deg 10.585 min                       | -70 deg 16.289 min                          |
|   | <input checked="" type="checkbox"/> WATER COLUMN | 142236                     | 25       | (nav file corr 10.5857 min)             | (nav file corr 16.2810 min)                 |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO START             | HH MM SS LOCAL             | DPH, m   | 42 deg min                              | -70 deg min                                 |
|   | <input checked="" type="checkbox"/> ON SEABED    | 142330                     |          | (nav file corr 10.5852 min)             | (nav file corr 16.3035 min)                 |
|   | <input type="checkbox"/> SMPL ATTEMPT            |                            |          |   |   |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> SAMPLE ATTEMPT          | HH MM SS LOCAL             | DPH, m   | 42 deg min                              | -70 deg min                                 |
|   |  |                            |          | (nav file corr min)                     | (nav file corr min)                         |
| <input checked="" type="checkbox"/> STA LOC | <input checked="" type="checkbox"/> SMPL ATTEMPT | HH MM SS LOCAL             | DPH, m   | 42 deg 10.585 min                       | -70 deg 16.321 min                          |
|   | <input checked="" type="checkbox"/> VIDEO END    | 142402                     |          | (nav file corr 10.5848 min)             | (nav file corr 16.3167 min)                 |
|   | <input checked="" type="checkbox"/> OFF SEABED   |                            |          |   |   |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO END               | HH MM SS LOCAL             | DPH, m   | 42 deg min                              | -70 deg min                                 |
|   |  |                            |          | (nav file corr min)                     | (nav file corr min)                         |
| UTC = EDT + 4 HRS, EST + 5 HRS              |  | STATION DATE AND TIME, UTC |          | DDD : HH : MM : SS<br>255 18 24 02      |   |

☐ NO SEDIMENT SAMPLE: ☐ pre-tripped; ☐ no smpl attempted; ☐ jaws partly open; ☐ washout; ☐ refusal;  
☐ too gravelly/shelly; ☐ smpl too small; ☐ grvl in jaws;

|                             |                         |  |  |
|-----------------------------|-------------------------|--|--|
| DPH TO SED SURF IN GRAB, cm | SED VOL IN GRAB, liters | SAMPLES / DATA COLLECTED   |  |
| RIGHT 2.5, LEFT 3.0         | RT 4.2 + LFT 4.0 = 8.2  | <input checked="" type="checkbox"/> SEDIMENT   | <input checked="" type="checkbox"/> GPS NAV FILE |
|                             |                         | <input type="checkbox"/> SAND LANCE  | <input checked="" type="checkbox"/> GRAB STILL   |
|                             |                         | <input checked="" type="checkbox"/> VERT. / <input type="checkbox"/> HORIZ PLNK. TOW | <input type="checkbox"/> NO INVERTS PRESENT      |

|                   |  |                   | SEABED DESCRIPTION   |
|-------------------|--|-------------------|--|
| att epifauna      | herring eggs                                     | skate             | storm sand ripples <input checked="" type="checkbox"/> Y, <input type="checkbox"/> N                           |
| Boltonia tunic.   | lobster  | Suberites spg     | crests: <input type="checkbox"/> sharp <input type="checkbox"/> rounded  |
| brachiopod        | monkfish   | squid             | <input type="checkbox"/> straight <input checked="" type="checkbox"/> multi-rippled                            |
| bushy bry/hyd     | moon snail                                       |                   | gvl in ripple troughs <input type="checkbox"/> Y, <input type="checkbox"/> N                                   |
| cancer crab       | mussels  | tunicate, B pilu. | small ripples, [ <input type="checkbox"/> intermittent] <input type="checkbox"/> Y, <input type="checkbox"/> N |
| ceri burr anem    | ocean pout                                       | yellow encr. spg  | sand, unrippled <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| cod; cod juvenile |  |                   | sand partial veneer on gravel <input type="checkbox"/> Y, <input type="checkbox"/> N                           |
| ctenophores       | Polymastia spg                                   |                   | gravel pavement <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| coralline algae   | red encr. spg                                    |                   | boulders <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| cunner            | red hake   |                   | mud <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| dk yellow spg     | <input checked="" type="checkbox"/> sand dollars |                   | trawled/dredged shell frags <input type="checkbox"/> Y, <input type="checkbox"/> N                             |
| Didemnum cols     |  | shells/fragments  | trawl/dredge marks <input type="checkbox"/> Y, <input type="checkbox"/> N                                      |
| dogfish           |  |                   | sand lance in water column <input type="checkbox"/> Y, <input type="checkbox"/> N                              |
| finger spg        | scallops   |                   | sand lance on/in substrate <input type="checkbox"/> Y, <input type="checkbox"/> N                              |
| flounder          | sculpin  |                   | sand lance in sed sample <input type="checkbox"/> Y, <input type="checkbox"/> N                                |
| haddock           | sea stars  |                   | SL size: <input type="checkbox"/> sml <input type="checkbox"/> med <input type="checkbox"/> lg                 |
| herring           |  |                   | SL nos:  |
|                   | silver hake                                      |                   |  |

AREA OF VAN VEEN GRAB = 0.1 SQ M; MAX DEPTH = 15 CM, VOLUME = 10.8 LITERS  
DISTANCE BETWEEN PARALLEL LASERS = 20 CM  
PAGE VAI FNTINE USGS COASTAL AND MARINE GEOLOGY PROGRAM, WOODS HOLE, MA

USGS STATION 4686  
SBNMS Site 512, CONSEC STA 12



|   |   |                              |                 |   |   |
|---|---|------------------------------|-----------------|---|---|
| CRUISE: USGS AUK2017044                     |   | DAY OF MONTH LOCAL<br>SEP 12 | JD LOCAL<br>255 | <input checked="" type="checkbox"/> DAY<br><input type="checkbox"/> NIGHT | Sunset: Sep 11, 2017<br>1900 EDT = 2300 UTC       |
| LOCATION: STELLWAGEN BANK NMS               |   | DAY OF MONTH UTC<br>SEP 12   | JD UTC<br>255   | VIDEO FWD<br>UPPER CAMERA 1 FILE 013                                      |   |
| MONTH YEAR: SEPTEMBER 2017                  |   |                              |                 | VIDEO FWD<br>LOWER CAMERA 2 FILE 1867                                     |   |
| LOCAL TIME: EDT                             |   |                              |                 |   |   |
| USGS STA 4687                               | SBNMS SITE 513  | CONSECUTIVE STA 13           | QUAD 2          | VIDEO CLIP 367  |   |
| <input type="checkbox"/> STA LOC            | <input checked="" type="checkbox"/> VIDEO START<br><input checked="" type="checkbox"/> WATER COLUMN   | HH MM SS LOCAL<br>144138     | DPH, m<br>25    | 42 deg 10.399 min<br>(nav file corr 10.3989 min)                          | -70 deg 18.292 min<br>(nav file corr 18.2849 min) |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO START<br><input checked="" type="checkbox"/> ON SEABED<br><input type="checkbox"/> SMPL ATTEMPT                      | HH MM SS LOCAL<br>144234     | DPH, m          | 42 deg min<br>(nav file corr 10.4003 min)                                 | -70 deg min<br>(nav file corr 18.3099 min)        |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> SAMPLE ATTEMPT   | HH MM SS LOCAL               | DPH, m          | 42 deg min<br>(nav file corr min)   | -70 deg min<br>(nav file corr min)                |
| <input checked="" type="checkbox"/> STA LOC | <input checked="" type="checkbox"/> SMPL ATTEMPT<br><input checked="" type="checkbox"/> VIDEO END<br><input checked="" type="checkbox"/> OFF SEABED | HH MM SS LOCAL<br>144744     | DPH, m          | 42 deg 10.435 min<br>(nav file corr 10.4348 min)                          | -70 deg 18.405 min<br>(nav file corr 18.4025 min) |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO END  | HH MM SS LOCAL               | DPH, m          | 42 deg min<br>(nav file corr min)   | -70 deg min<br>(nav file corr min)                |
| UTC = EDT + 4 HRS, EST + 5 HRS              |   | STATION DATE AND TIME, UTC   |                 | DDD : HH : MM : SS<br>255 18 47 44  |   |

☐ NO SEDIMENT SAMPLE: ☐ pre-tripped; ☐ no smpl attempted; ☐ jaws partly open; ☐ washout; ☐ refusal;  
☐ too gravelly/shelly; ☐ smpl too small; ☐ grvl in jaws;

DPH TO SED SURF IN GRAB, cm  
RIGHT 8, LEFT 8.5  
SED VOL IN GRAB, liters  
RT 1.9 + LFT 1.7 = 3.6

#### SAMPLES / DATA COLLECTED

☒ SEDIMENT ☒ CTD CAST ☐ GPS NAV FILE  
☒ SAND LANCE ☒ INVERTS ☐ GRAB STILLs  
☒ VERT. / ☐ HORIZ PLNK. TOW ☐ NO INVERTS PRESENT

|                                     | att epifauna      | herring eggs                                     | skate             | SEABED DESCRIPTION   |
|-------------------------------------|-------------------|--|-------------------|--|
|                                     | Boltenia tunic.   | lobster  | Suberites spg     | storm sand ripples <input checked="" type="checkbox"/> Y, <input type="checkbox"/> N                           |
|                                     | brachiopod        | monkfish   | squid             | crests: <input type="checkbox"/> sharp <input checked="" type="checkbox"/> rounded                             |
|                                     | bushy bry/hyd     | moon snail                                       |                   | <input checked="" type="checkbox"/> straight <input type="checkbox"/> multi-rippled                            |
| <input checked="" type="checkbox"/> | cancer crab       | mussels  | tunicate, B pilu. | gvl in ripple troughs <input type="checkbox"/> Y, <input checked="" type="checkbox"/> N                        |
|                                     | ceri burr anem    | ocean pout                                       | yellow encr. spg  | small ripples, [ <input type="checkbox"/> intermittent] <input type="checkbox"/> Y, <input type="checkbox"/> N |
|                                     | cod; cod juvenile |  |                   | sand, unrippled <input type="checkbox"/> Y, <input type="checkbox"/> N   |
|                                     | ctenophores       | Polymastia spg                                   |                   | sand partial veneer on gravel <input type="checkbox"/> Y, <input type="checkbox"/> N                           |
|                                     | coralline algae   | red encr. spg                                    |                   | gravel pavement <input type="checkbox"/> Y, <input type="checkbox"/> N   |
|                                     | cunner            | red hake   |                   | boulders <input type="checkbox"/> Y, <input type="checkbox"/> N  |
|                                     | dk yellow spg     | <input checked="" type="checkbox"/> sand dollars |                   | mud <input type="checkbox"/> Y, <input type="checkbox"/> N   |
|                                     | Didemnum cols     |  | shells/fragments  | trawled/dredged shell frags <input type="checkbox"/> Y, <input type="checkbox"/> N                             |
|                                     | dogfish           |  |                   | trawl/dredge marks <input type="checkbox"/> Y, <input type="checkbox"/> N                                      |
|                                     | finger spg        | scallops   |                   | sand lance in water column <input type="checkbox"/> Y, <input checked="" type="checkbox"/> N                   |
|                                     | flounder          | sculpin  |                   | sand lance on/in substrate <input type="checkbox"/> Y, <input checked="" type="checkbox"/> N                   |
|                                     | haddock           | sea stars  |                   | sand lance in sed sample <input checked="" type="checkbox"/> Y, <input type="checkbox"/> N                     |
|                                     | herring           | <input checked="" type="checkbox"/> silver hake  |                   | SL size: <input type="checkbox"/> sml <input checked="" type="checkbox"/> med <input type="checkbox"/> lg      |
|                                     |                   |  |                   | SL nos: 3  |

|                               |  |                    |          |   |   |
|-------------------------------|--|--------------------|----------|---|---|
| CRUISE: USGS AUK2017044       |  | DAY OF MONTH LOCAL | JD LOCAL | <input checked="" type="checkbox"/> DAY | Sunset: Sep 11, 2017<br>1900 EDT = 2300 UTC |
| LOCATION: STELLWAGEN BANK NMS |  | SEP 12             | 255      | <input type="checkbox"/> NIGHT          |   |
| MONTH YEAR: SEPTEMBER 2017    |  | DAY OF MONTH UTC   | JD UTC   | VIDEO FWD                               | FILE  |
| LOCAL TIME: EDT               |  | SEP 12             | 255      | UPPER CAMERA 1                          | 014   |
|                               |  |                    |          | VIDEO FWD                               | FILE  |
|                               |  |                    |          | LOWER CAMERA 2                          | 1868  |

|               |                |                    |        |                |
|---------------|----------------|--------------------|--------|----------------|
| USGS STA 4688 | SBNMS SITE 514 | CONSECUTIVE STA 14 | QUAD 2 | VIDEO CLIP 368 |
|---------------|----------------|--------------------|--------|----------------|

|   |  |                |        |                             |                             |
|---|--|----------------|--------|-----------------------------|-----------------------------|
| <input type="checkbox"/> STA LOC            | <input checked="" type="checkbox"/> VIDEO START  | HH MM SS LOCAL | DPH, m | 42 deg 10.434 min           | -70 deg 20.170 min          |
|   | <input checked="" type="checkbox"/> WATER COLUMN | 150610         | 31     | (nav file corr 10.4330 min) | (nav file corr 20.1673 min) |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO START             | HH MM SS LOCAL | DPH, m | 42 deg min                  | -70 deg min                 |
|   | <input checked="" type="checkbox"/> ON SEABED    | 150740         |        | (nav file corr 10.4442 min) | (nav file corr 20.1832 min) |
|   | <input type="checkbox"/> SMPL ATTEMPT            |                |        |                             |                             |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> SAMPLE ATTEMPT          | HH MM SS LOCAL | DPH, m | 42 deg min                  | -70 deg min                 |
|   |  |                |        | (nav file corr min)         | (nav file corr min)         |
| <input checked="" type="checkbox"/> STA LOC | <input checked="" type="checkbox"/> SMPL ATTEMPT | HH MM SS LOCAL | DPH, m | 42 deg 10.472 min           | -70 deg 20.248 min          |
|   | <input checked="" type="checkbox"/> VIDEO END    | 151300         |        | (nav file corr 10.4716 min) | (nav file corr 20.2463 min) |
|   | <input checked="" type="checkbox"/> OFF SEABED   |                |        |                             |                             |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO END               | HH MM SS LOCAL | DPH, m | 42 deg min                  | -70 deg min                 |
|   |  |                |        | (nav file corr min)         | (nav file corr min)         |

UTC = EDT + 4 HRS, EST + 5 HRS

STATION DATE AND TIME, UTC

DDD : HH : MM : SS  
255 19 13 00

☐ NO SEDIMENT SAMPLE: ☐ pre-tripped; ☐ no smpl attempted; ☐ jaws partly open; ☐ washout; ☐ refusal;  
☐ too gravelly/shelly; ☐ smpl too small; ☐ grvl in jaws;

|                             |                         |                          |
|-----------------------------|-------------------------|--------------------------|
| DPH TO SED SURF IN GRAB, cm | SED VOL IN GRAB, liters | SAMPLES / DATA COLLECTED |
| RIGHT 6 LEFT 5.5            | RT 2.7 + LFT 2.9 = 5.6  |                          |

☒ SEDIMENT ☒ CTD CAST ☒ GPS NAV FILE  
☐ SAND LANCE ☒ INVERTS ☒ GRAB STILL  
☒ VERT. / ☐ HORIZ PLNK. TOW ☐ NO INVERTS PRESENT

|   |  |                   | SEABED DESCRIPTION   |
|---|--|-------------------|--|
| att epifauna                                    | herring eggs                                     | skate             |  |
| Boltonia tunic.                                 | lobster  | Suberites spg     | storm sand ripples <input checked="" type="checkbox"/> Y, <input type="checkbox"/> N                           |
| brachiopod                                      | monkfish   | squid             | crests: <input type="checkbox"/> sharp <input checked="" type="checkbox"/> rounded                             |
| bushy bry/hyd                                   | moon snail                                       |                   | <input checked="" type="checkbox"/> straight <input checked="" type="checkbox"/> multi-rippled                 |
| <input checked="" type="checkbox"/> cancer crab | mussels  | tunicate, B pilu. | gvl in ripple troughs <input type="checkbox"/> Y, <input checked="" type="checkbox"/> N                        |
| ceri burr anem                                  | ocean pout                                       | yellow encr. spg  | small ripples, [ <input type="checkbox"/> intermittent] <input type="checkbox"/> Y, <input type="checkbox"/> N |
| cod; cod juvenile                               |  |                   | sand, unrippled <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| ctenophores                                     | Polymastia spg                                   |                   | sand partial veneer on gravel <input type="checkbox"/> Y, <input type="checkbox"/> N                           |
| coralline algae                                 | red encr. spg                                    |                   | gravel pavement <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| cunner  | red hake   |                   | boulders <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| dk yellow spg                                   | <input checked="" type="checkbox"/> sand dollars |                   | mud <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| Didemnum cols                                   |  | shells/fragments  | trawled/dredged shell frags <input type="checkbox"/> Y, <input type="checkbox"/> N                             |
| <input checked="" type="checkbox"/> dogfish     |  |                   | trawl/dredge marks <input type="checkbox"/> Y, <input type="checkbox"/> N                                      |
| finger spg                                      | <input checked="" type="checkbox"/> scallops     |                   | sand lance in water column <input type="checkbox"/> Y, <input type="checkbox"/> N                              |
| flounder  | sculpin  |                   | sand lance on/in substrate <input type="checkbox"/> Y, <input type="checkbox"/> N                              |
| haddock   | sea stars  |                   | sand lance in sed sample <input type="checkbox"/> Y, <input type="checkbox"/> N                                |
| herring   |  |                   | SL size: <input type="checkbox"/> smt <input type="checkbox"/> med <input type="checkbox"/> lg                 |
|   | silver hake                                      |                   | SL nos:  |

AREA OF VAN VEEN GRAB = 0.1 SQ M, MAX DEPTH = 15 CM, VOLUME = 10.8 LITERS  
 DISTANCE BETWEEN PARALLEL LASERS = 20 CM  
 PAGE VALENTINE USGS COASTAL AND MARINE GEOLOGY PROGRAM, WOODS HOLE, MA

USGS STATION 4688  
 SBNMS Site 514, CONSEC STA 14



|   |   |                            |              |  |   |
|---|---|----------------------------|--------------|--|---|
| CRUISE: USGS AUK2017044                     |   | DAY OF MONTH LOCAL         | JD LOCAL     | <input checked="" type="checkbox"/> DAY          | Sunset: Sep 11, 2017<br>1900 EDT = 2300 UTC       |
| LOCATION: STELLWAGEN BANK NMS               |   | SEP 12                     | 255          | <input type="checkbox"/> NIGHT                   |   |
| MONTH YEAR: SEPTEMBER 2017                  |   | DAY OF MONTH UTC           | JD UTC       | VIDEO FWD  | FILE  |
| LOCAL TIME: EDT                             |   | SEP 12                     | 255          | UPPER CAMERA 1                                   | 015   |
|   |   |                            |              | VIDEO FWD  | FILE  |
|   |   |                            |              | LOWER CAMERA 2                                   | 1869  |
| USGS STA                                    | 4689  | SBNMS SITE                 | C8           | CONSECUTIVE STA                                  | 15  |
|   |   |                            |              | QUAD   | 5   |
|   |   |                            |              | VIDEO CLIP                                       | 369   |
| <input type="checkbox"/> STA LOC            | <input checked="" type="checkbox"/> VIDEO START<br><input checked="" type="checkbox"/> WATER COLUMN   | HH MM SS LOCAL<br>153744   | DPH, m<br>29 | 42 deg 12.470 min<br>(nav file corr 12.4688 min) | -70 deg 17.451 min<br>(nav file corr 17.4503 min) |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO START<br><input checked="" type="checkbox"/> ON SEABED<br><input type="checkbox"/> SMPL ATTEMPT                      | HH MM SS LOCAL<br>153846   | DPH, m       | 42 deg min<br>(nav file corr 12.4759 min)        | -70 deg min<br>(nav file corr 17.4552 min)        |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> SAMPLE ATTEMPT   | HH MM SS LOCAL             | DPH, m       | 42 deg min<br>(nav file corr min)                | -70 deg min<br>(nav file corr min)                |
| <input checked="" type="checkbox"/> STA LOC | <input checked="" type="checkbox"/> SMPL ATTEMPT<br><input checked="" type="checkbox"/> VIDEO END<br><input checked="" type="checkbox"/> OFF SEABED | HH MM SS LOCAL<br>154404   | DPH, m       | 42 deg 12.506 min<br>(nav file corr 12.5057 min) | -70 deg 17.483 min<br>(nav file corr 17.4820 min) |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO END  | HH MM SS LOCAL             | DPH, m       | 42 deg min<br>(nav file corr min)                | -70 deg min<br>(nav file corr min)                |
| UTC = EDT + 4 HRS, EST + 5 HRS              |   | STATION DATE AND TIME, UTC |              | DDD : HH : MM : SS<br>255 19 44 04               |   |

☐ NO SEDIMENT SAMPLE: ☐ pre-tripped; ☐ no smpl attempted; ☐ jaws partly open; ☐ washout; ☐ refusal;  
☐ too gravelly/shelly; ☐ smpl too small; ☐ grvl in jaws;

|   |   |  |  |
|---|---|--|--|
| DPH TO SED SURF IN GRAB, cm<br>RIGHT 1.5 LEFT 2 | SED VOL IN GRAB, liters<br>RT 4.7 + LFT 4.5 = 9.2 | SAMPLES / DATA COLLECTED   |  |
|   |   | <input checked="" type="checkbox"/> SEDIMENT   | <input checked="" type="checkbox"/> CTD CAST     |
|   |   | <input type="checkbox"/> SAND LANCE  | <input checked="" type="checkbox"/> GPS NAV FILE |
|   |   | <input checked="" type="checkbox"/> INVERTS  | <input checked="" type="checkbox"/> GRAB STILL   |
|   |   | <input checked="" type="checkbox"/> VERT. / <input type="checkbox"/> HORIZ PLNK. TOW | <input type="checkbox"/> NO INVERTS PRESENT      |

|                                     | att epifauna      | herring eggs                                     | skate             | SEABED DESCRIPTION   |
|-------------------------------------|-------------------|--|-------------------|--|
|                                     | Boltonia tunic.   | <input checked="" type="checkbox"/> lobster      | Suberites spg     | storm sand ripples <input checked="" type="checkbox"/> Y, <input type="checkbox"/> N                           |
|                                     | brachiopod        | monkfish   | squid             | crests: <input type="checkbox"/> sharp <input checked="" type="checkbox"/> rounded                             |
|                                     | bushy bry/hyd     | moon snail                                       |                   | <input type="checkbox"/> straight <input type="checkbox"/> multi-rippled                                       |
| <input checked="" type="checkbox"/> | cancer crab       | mussels  | tunicate, B pilu. | gvl in ripple troughs sm. gvl <input checked="" type="checkbox"/> Y, <input type="checkbox"/> N                |
|                                     | ceri burr anem    | ocean pout                                       | yellow encr. spg  | small ripples, [ <input type="checkbox"/> intermittent] <input type="checkbox"/> Y, <input type="checkbox"/> N |
|                                     | cod; cod juvenile |  |                   | sand, unrippled <input type="checkbox"/> Y, <input type="checkbox"/> N   |
|                                     | ctenophores       | Polymastia spg                                   |                   | sand partial veneer on gravel <input type="checkbox"/> Y, <input type="checkbox"/> N                           |
|                                     | coralline algae   | red encr. spg                                    |                   | gravel pavement <input type="checkbox"/> Y, <input type="checkbox"/> N   |
|                                     | cunner            | red hake   |                   | boulders <input type="checkbox"/> Y, <input type="checkbox"/> N  |
|                                     | dk yellow spg     | <input checked="" type="checkbox"/> sand dollars |                   | mud <input type="checkbox"/> Y, <input type="checkbox"/> N   |
|                                     | Didemnum cols     |  | shells/fragments  | trawled/dredged shell frags <input type="checkbox"/> Y, <input type="checkbox"/> N                             |
|                                     | dogfish           |  |                   | trawl/dredge marks <input type="checkbox"/> Y, <input type="checkbox"/> N                                      |
|                                     | finger spg        | <input checked="" type="checkbox"/> scallops     |                   | sand lance in water column <input type="checkbox"/> Y, <input type="checkbox"/> N                              |
| <input checked="" type="checkbox"/> | flounder          | <input checked="" type="checkbox"/> sculpin      |                   | sand lance on/in substrate <input type="checkbox"/> Y, <input type="checkbox"/> N                              |
|                                     | haddock           | sea stars  |                   | sand lance in sed sample <input type="checkbox"/> Y, <input type="checkbox"/> N                                |
|                                     | herring           |  |                   | SL size: <input type="checkbox"/> sml <input type="checkbox"/> med <input type="checkbox"/> lg                 |
|                                     |                   | silver hake                                      |                   | SL nos:  |

|   |   |                            |              |  |   |
|---|---|----------------------------|--------------|--|---|
| CRUISE: USGS AUK2017044                     |   | DAY OF MONTH LOCAL         | JD LOCAL     | <input checked="" type="checkbox"/> DAY          | Sunset: Sep 11, 2017<br>1900 EDT = 2300 UTC       |
| LOCATION: STELLWAGEN BANK NMS               |   | SEP 12                     | 255          | <input type="checkbox"/> NIGHT                   |   |
| MONTH YEAR: SEPTEMBER 2017                  |   | DAY OF MONTH UTC           | JD UTC       | VIDEO FWD  | FILE  |
| LOCAL TIME: EDT                             |   | SEP 12                     | 255          | UPPER CAMERA 1                                   | 016   |
|   |   |                            |              | VIDEO FWD  | FILE  |
|   |   |                            |              | LOWER CAMERA 2                                   | 1870  |
| USGS STA 4690                               | SBNMS SITE C7   | CONSECUTIVE STA 16         | QUAD 5       | VIDEO CLIP 370                                   |   |
| <input type="checkbox"/> STA LOC            | <input checked="" type="checkbox"/> VIDEO START<br><input checked="" type="checkbox"/> WATER COLUMN   | HH MM SS LOCAL<br>155840   | DPH, m<br>26 | 42 deg 12.707 min<br>(nav file corr 2.7066 min)  | -70 deg 16.122 min<br>(nav file corr 16.1216 min) |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO START<br><input checked="" type="checkbox"/> ON SEABED<br><input type="checkbox"/> SMPL ATTEMPT                      | HH MM SS LOCAL<br>155936   | DPH, m       | 42 deg min<br>(nav file corr 12.7121 min)        | -70 deg min<br>(nav file corr 16.1239 min)        |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> SAMPLE ATTEMPT   | HH MM SS LOCAL             | DPH, m       | 42 deg min<br>(nav file corr min)                | -70 deg min<br>(nav file corr min)                |
| <input checked="" type="checkbox"/> STA LOC | <input checked="" type="checkbox"/> SMPL ATTEMPT<br><input checked="" type="checkbox"/> VIDEO END<br><input checked="" type="checkbox"/> OFF SEABED | HH MM SS LOCAL<br>160446   | DPH, m       | 42 deg 12.749 min<br>(nav file corr 12.7488 min) | -70 deg 16.135 min<br>(nav file corr 16.1354 min) |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO END  | HH MM SS LOCAL             | DPH, m       | 42 deg min<br>(nav file corr min)                | -70 deg min<br>(nav file corr min)                |
| UTC = EDT + 4 HRS, EST + 5 HRS              |   | STATION DATE AND TIME, UTC |              | DDD : HH : MM : SS<br>255 20 04 46               |   |

☐ NO SEDIMENT SAMPLE: ☐ pre-tripped; ☐ no smpl attempted; ☐ jaws partly open; ☐ washout; ☐ refusal;  
☐ too gravelly/shelly; ☐ smpl too small; ☐ grvl in jaws;

|   |   |  |  |
|---|---|--|--|
| DPH TO SED SURF IN GRAB, cm<br>RIGHT 2.5 LEFT 3.5 | SED VOL IN GRAB, liters<br>RT 4.2 + LFT 3.8 = 8.0 | SAMPLES / DATA COLLECTED   |  |
|   |   | <input checked="" type="checkbox"/> SEDIMENT   | <input checked="" type="checkbox"/> CTD CAST     |
|   |   | <input type="checkbox"/> SAND LANCE  | <input checked="" type="checkbox"/> GPS NAV FILE |
|   |   | <input checked="" type="checkbox"/> INVERTS  | <input checked="" type="checkbox"/> GRAB STILL   |
|   |   | <input checked="" type="checkbox"/> VERT. / <input type="checkbox"/> HORIZ PLNK. TOW | <input type="checkbox"/> NO INVERTS PRESENT      |

|                   |  |   | SEABED DESCRIPTION  |
|-------------------|--|---|---|
| att epifauna      | herring eggs                                     | <input checked="" type="checkbox"/> skate | storm sand ripples <input checked="" type="checkbox"/> Y, <input type="checkbox"/> N                                      |
| Boltonia tunic.   | lobster  | Suberites spg                             | crests: <input type="checkbox"/> sharp <input checked="" type="checkbox"/> rounded low                                    |
| brachiopod        | monkfish   | squid                                     | <input type="checkbox"/> straight <input checked="" type="checkbox"/> multi-rippled                                       |
| bushy bry/hyd     | moon snail                                       | tunicate, B pilu.                         | gvl in ripple troughs <input type="checkbox"/> Y, <input checked="" type="checkbox"/> N                                   |
| cancer crab       | mussels  | yellow encr. spg                          | small ripples, [ <input type="checkbox"/> intermittent] <input checked="" type="checkbox"/> Y, <input type="checkbox"/> N |
| ceri burr anem    | ocean pout                                       |   | sand, unrippled <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| cod; cod juvenile |  |   | sand partial veneer on gravel <input type="checkbox"/> Y, <input type="checkbox"/> N                                      |
| ctenophores       | Polymastia spg                                   |   | gravel pavement <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| coralline algae   | red encr. spg                                    |   | boulders <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| cunner            | red hake   |   | mud <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| dk yellow spg     | <input checked="" type="checkbox"/> sand dollars |   | trawled/dredged shell frags <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| Didemnum cols     |  | shells/fragments                          | trawl/dredge marks <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| dogfish           |  |   | sand lance in water column <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| finger spg        | scallops   |   | sand lance on/in substrate <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| flounder          | sculpin  |   | sand lance in sed sample <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| haddock           | sea stars  |   | SL size: <input type="checkbox"/> sm <input type="checkbox"/> med <input type="checkbox"/> lg                             |
| herring           |  |   | SL nos:   |
|                   | silver hake                                      |   |   |

AREA OF VAN VEEN GRAB = 0.1 SQ M; MAX DEPTH = 15 CM; VOLUME = 10.8 LITERS  
DISTANCE BETWEEN PARALLEL LASERS = 20 CM  
PAGE VAL ENTINE USGS COASTAL AND MARINE GEOLOGY PROGRAM, WOODS HOLE, MA

USGS STATION 4690

SBNMS Site C7, CONSEC STA 16

|   |  |                            |          |   |   |
|---|--|----------------------------|----------|---|---|
| CRUISE: USGS AUK2017044                     |  | DAY OF MONTH LOCAL         | JD LOCAL | <input checked="" type="checkbox"/> DAY | Sunset: Sep 11, 2017<br>1900 EDT = 2300 UTC |
| LOCATION: STELLWAGEN BANK NMS               |  | SEP 12                     | 255      | <input type="checkbox"/> NIGHT          |   |
| MONTH YEAR: SEPTEMBER 2017                  |  | DAY OF MONTH UTC           | JD UTC   | VIDEO FWD                               | FILE 017                                    |
| LOCAL TIME: EDT                             |  | SEP 12                     | 255      | UPPER CAMERA 1                          |   |
|   |  |                            |          | VIDEO FWD                               | FILE 1871                                   |
|   |  |                            |          | LOWER CAMERA 2                          |   |
| USGS STA                                    | 4691   | SBNMS SITE                 | C6       | CONSECUTIVE STA                         | 17  |
|   |  |                            |          | QUAD                                    | 5   |
|   |  |                            |          | VIDEO CLIP                              | 371   |
| <input type="checkbox"/> STA LOC            | <input checked="" type="checkbox"/> VIDEO START  | HH MM SS LOCAL             | DPH, m   | 42 deg 13.631 min                       | -70 deg 16.303 min                          |
|   | <input checked="" type="checkbox"/> WATER COLUMN | 162020                     | 28       | (nav file corr 13.6302 min)             | (nav file corr 16.3053 min)                 |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO START             | HH MM SS LOCAL             | DPH, m   | 42 deg min                              | -70 deg min                                 |
|   | <input checked="" type="checkbox"/> ON SEABED    | 162128                     |          | (nav file corr 13.6398 min)             | (nav file corr 16.2964 min)                 |
|   | <input type="checkbox"/> SMPL ATTEMPT            |                            |          |   |   |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> SAMPLE ATTEMPT          | HH MM SS LOCAL             | DPH, m   | 42 deg min                              | -70 deg min                                 |
|   |  |                            |          | (nav file corr min)                     | (nav file corr min)                         |
| <input checked="" type="checkbox"/> STA LOC | <input checked="" type="checkbox"/> SMPL ATTEMPT | HH MM SS LOCAL             | DPH, m   | 42 deg 13.688 min                       | -70 deg 16.276 min                          |
|   | <input checked="" type="checkbox"/> VIDEO END    | 162642                     |          | (nav file corr 13.6869 min)             | (nav file corr 16.2767 min)                 |
|   | <input checked="" type="checkbox"/> OFF SEABED   |                            |          |   |   |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO END               | HH MM SS LOCAL             | DPH, m   | 42 deg min                              | -70 deg min                                 |
|   |  |                            |          | (nav file corr min)                     | (nav file corr min)                         |
| UTC = EDT + 4 HRS, EST + 5 HRS              |  | STATION DATE AND TIME, UTC |          | DDD : HH : MM : SS                      |   |
|   |  |                            |          | 255 20 26 42                            |   |

☐ NO SEDIMENT SAMPLE: ☐ pre-tripped; ☐ no smpl attempted; ☐ jaws partly open; ☐ washout; ☐ refusal;  
☐ too gravelly/shelly; ☐ smpl too small; ☐ grvl in jaws;

|                             |                         |  |  |
|-----------------------------|-------------------------|--|--|
| DPH TO SED SURF IN GRAB, cm | SED VOL IN GRAB, liters | SAMPLES / DATA COLLECTED   |  |
| RIGHT 4.5 LEFT 3.5          | RT 3.4 + LFT 3.8 = 7.2  | <input checked="" type="checkbox"/> SEDIMENT                               | <input checked="" type="checkbox"/> CTD CAST     |
|                             |                         | <input type="checkbox"/> SAND LANCE  | <input checked="" type="checkbox"/> GPS NAV FILE |
|                             |                         | <input checked="" type="checkbox"/> INVERTS                                | <input checked="" type="checkbox"/> GRAB STILL   |
|                             |                         | <input checked="" type="checkbox"/> VERT. / <input type="checkbox"/> HORIZ | <input type="checkbox"/> NO INVERTS PRESENT      |

|                   |  |                   | SEABED DESCRIPTION   |
|-------------------|--|-------------------|--|
| att epifauna      | herring eggs                                     | skate             | storm sand ripples <input checked="" type="checkbox"/> Y, <input type="checkbox"/> N                           |
| Boltonia tunic.   | lobster  | Suberites spg     | crests: <input type="checkbox"/> sharp <input checked="" type="checkbox"/> rounded                             |
| brachiopod        | monkfish   | squid             | <input type="checkbox"/> straight <input checked="" type="checkbox"/> multi-rippled                            |
| bushy bry/hyd     | moon snail                                       |                   | gvl in ripple troughs <input type="checkbox"/> Y, <input type="checkbox"/> N                                   |
| cancer crab       | mussels  | tunicate, B pilu. | small ripples, [ <input type="checkbox"/> intermittent] <input type="checkbox"/> Y, <input type="checkbox"/> N |
| ceri burr anem    | ocean pout                                       | yellow encr. spg  | sand, unrippled <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| cod; cod juvenile |  |                   | sand partial veneer on gravel <input type="checkbox"/> Y, <input type="checkbox"/> N                           |
| ctenophores       | Polymastia spg                                   |                   | gravel pavement <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| coralline algae   | red encr. spg                                    |                   | boulders <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| cunner            | red hake   |                   | mud <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| dk yellow spg     | <input checked="" type="checkbox"/> sand dollars |                   | trawled/dredged shell frags <input type="checkbox"/> Y, <input type="checkbox"/> N                             |
| Didemnum cols     |  | shells/fragments  | trawl/dredge marks <input type="checkbox"/> Y, <input type="checkbox"/> N                                      |
| dogfish           |  |                   | sand lance in water column <input type="checkbox"/> Y, <input type="checkbox"/> N                              |
| finger spg        | scallops   |                   | sand lance on/in substrate <input type="checkbox"/> Y, <input type="checkbox"/> N                              |
| flounder          | sculpin  |                   | sand lance in sed sample <input type="checkbox"/> Y, <input type="checkbox"/> N                                |
| haddock           | sea stars  |                   | SL size: <input type="checkbox"/> sml <input type="checkbox"/> med <input type="checkbox"/> lg                 |
| herring           |  |                   | SL nos:  |
|                   | silver hake                                      |                   |  |



|                                |                               |                                    |
|--------------------------------|-------------------------------|------------------------------------|
| UTC = EDT + 4 HRS, EST + 5 HRS | STATION DATE AND<br>TIME, UTC | DDD : HH : MM : SS<br>255 20 47 58 |
|--------------------------------|-------------------------------|------------------------------------|

☐ NO SEDIMENT SAMPLE:  
 ☐ pre-tripped;  
 ☐ no smpl attempted;  
 ☐ jaws partly open;  
 ☐ washout;  
 ☐ refusal;

☐ too gravelly/shelly;  
 ☐ smpl too small;  
 ☐ grvl in jaws;

|                             |                 |   |  |  |
|-----------------------------|-----------------|---|--|--|
| DPH TO SED SURF IN GRAB, cm |                 | SED VOL IN GRAB, liters                     | SAMPLES / DATA COLLECTED   |  |
| RIGHT <u>6.5</u>            | LEFT <u>5.5</u> | RT <u>2.5</u> + LFT <u>2.9</u> = <u>5.4</u> | <input checked="" type="checkbox"/> SEDIMENT   | <input checked="" type="checkbox"/> CTD CAST     |
|                             |                 |   | <input type="checkbox"/> SAND LANCE  | <input checked="" type="checkbox"/> GPS NAV FILE |
|                             |                 |   | <input checked="" type="checkbox"/> INVERTS  | <input checked="" type="checkbox"/> GRAB STILL   |
|                             |                 |   | <input checked="" type="checkbox"/> VERT. / <input type="checkbox"/> HORIZ PLNK. TOW | <input type="checkbox"/> NO INVERTS PRESENT      |

|   |                   |                | SEABED DESCRIPTION   |
|---|-------------------|----------------|--|
|   | att epifauna      | herring eggs   | skate  |
|   | Boltenia tunic.   | lobster        | Suberites spg  |
|   | brachiopod        | monkfish       | squid  |
|   | bushy bry/hyd     | moon snail     |  |
| ✓ | cancer crab       | mussels        | tunicate, B pilu.  |
|   | ceri burr anem    | ocean pout     | yellow encr. spg   |
|   | cod; cod juvenile |                |  |
|   | ctenophores       | Polymastia spg |  |
|   | coralline algae   | red encr. spg  |  |
|   | cunner            | red hake       |  |
|   | dk yellow spg     | ✓ sand dollars |  |
| ✓ | Didemnum cols     |                | shells/fragments   |
|   | dogfish           |                |  |
|   | finger spg        | ✓ scallops     |  |
| ✓ | flounder          | ✓ sculpin      |  |
|   | haddock           | sea stars      |  |
|   | herring           |                |  |
|   |                   | ✓ silver hake  |  |
|   |                   |                | storm sand ripples low <input checked="" type="checkbox"/> Y, <input type="checkbox"/> N                       |
|   |                   |                | crests: <input type="checkbox"/> sharp <input type="checkbox"/> rounded  |
|   |                   |                | <input type="checkbox"/> straight <input checked="" type="checkbox"/> multi-rippled                            |
|   |                   |                | gvl in ripple troughs <input type="checkbox"/> Y, <input type="checkbox"/> N                                   |
|   |                   |                | small ripples, [ <input type="checkbox"/> intermittent] <input type="checkbox"/> Y, <input type="checkbox"/> N |
|   |                   |                | sand, unrippled <input type="checkbox"/> Y, <input type="checkbox"/> N   |
|   |                   |                | sand partial veneer on gravel <input type="checkbox"/> Y, <input type="checkbox"/> N                           |
|   |                   |                | gravel pavement <input type="checkbox"/> Y, <input type="checkbox"/> N   |
|   |                   |                | boulders <input type="checkbox"/> Y, <input type="checkbox"/> N  |
|   |                   |                | mud <input type="checkbox"/> Y, <input type="checkbox"/> N   |
|   |                   |                | trawled/dredged shell frags <input type="checkbox"/> Y, <input type="checkbox"/> N                             |
|   |                   |                | trawl/dredge marks <input type="checkbox"/> Y, <input type="checkbox"/> N                                      |
|   |                   |                | sand lance in water column <input type="checkbox"/> Y, <input type="checkbox"/> N                              |
|   |                   |                | sand lance on/in substrate <input type="checkbox"/> Y, <input type="checkbox"/> N                              |
|   |                   |                | sand lance in sed sample <input type="checkbox"/> Y, <input type="checkbox"/> N                                |
|   |                   |                | SL size: <input type="checkbox"/> sml <input type="checkbox"/> med <input type="checkbox"/> lg                 |
|   |                   |                | SL nos:  |

AREA OF VAN VEEN GRAB = 0.1 SQ M; MAX DEPTH = 15 CM; VOLUME = 10.8 LITERS  
DISTANCE BETWEEN PARALLEL LASERS = 20 CM

PAGE VALENTINE, USGS COASTAL AND MARINE GEOLOGY PROGRAM, WOODS HOLE, MA

USGS STATION

SBNMS Site 69, CONSEC STA

|   |   |                              |                 |   |   |
|---|---|------------------------------|-----------------|---|---|
| CRUISE: USGS AUK2017044                     |   | DAY OF MONTH LOCAL<br>SEP 13 | JD LOCAL<br>256 | <input checked="" type="checkbox"/> DAY<br><input type="checkbox"/> NIGHT | Sunset: Sep 11, 2017<br>1900 EDT = 2300 UTC       |
| LOCATION: STELLWAGEN BANK NMS               |   | DAY OF MONTH UTC<br>SEP 13   | JD UTC<br>256   | VIDEO FWD<br>UPPER CAMERA 1   | FILE 019  |
| MONTH YEAR: SEPTEMBER 2017                  |   |                              |                 | VIDEO FWD<br>LOWER CAMERA 2   | FILE 1873   |
| LOCAL TIME: EDT                             |   |                              |                 |   |   |
| USGS STA<br>4693                            | SBNMS SITE<br>N9  | CONSECUTIVE STA<br>19        | QUAD<br>8       | VIDEO CLIP<br>373   |   |
| <input type="checkbox"/> STA LOC            | <input checked="" type="checkbox"/> VIDEO START<br><input checked="" type="checkbox"/> WATER COLUMN   | HH MM SS LOCAL<br>101352     | DPH, m<br>32    | 42 deg 21.514 min<br>(nav file corr 21.5137 min)                          | -70 deg 19.078 min<br>(nav file corr 19.0793 min) |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO START<br><input checked="" type="checkbox"/> ON SEABED<br><input type="checkbox"/> SMPL ATTEMPT                      | HH MM SS LOCAL<br>101450     | DPH, m          | 42 deg min<br>(nav file corr 21.5104 min)                                 | -70 deg min<br>(nav file corr 19.0748 min)        |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> SAMPLE ATTEMPT   | HH MM SS LOCAL               | DPH, m          | 42 deg min<br>(nav file corr min)   | -70 deg min<br>(nav file corr min)                |
| <input checked="" type="checkbox"/> STA LOC | <input checked="" type="checkbox"/> SMPL ATTEMPT<br><input checked="" type="checkbox"/> VIDEO END<br><input checked="" type="checkbox"/> OFF SEABED | HH MM SS LOCAL<br>102008     | DPH, m          | 42 deg 21.500 min<br>(nav file corr 21.5000 min)                          | -70 deg 19.047 min<br>(nav file corr 19.0482 min) |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO END  | HH MM SS LOCAL               | DPH, m          | 42 deg min<br>(nav file corr min)   | -70 deg min<br>(nav file corr min)                |
| UTC = EDT + 4 HRS, EST + 5 HRS              |   | STATION DATE AND TIME, UTC   |                 | DDD : HH : MM : SS<br>256 14 20 08  |   |

|  |   |
|--|---|
| <input checked="" type="checkbox"/> NO SEDIMENT SAMPLE: <input type="checkbox"/> pre-tripped; <input type="checkbox"/> no smpl attempted; <input type="checkbox"/> jaws partly open; <input type="checkbox"/> washout; <input type="checkbox"/> refusal;<br><input type="checkbox"/> too gravelly/shelly; <input type="checkbox"/> smpl too small; <input checked="" type="checkbox"/> grvl in jaws;                   |   |
| DPH TO SED SURF IN GRAB, cm<br>RIGHT _____ LEFT _____  | SED VOL IN GRAB, liters<br>RT _____ + LFT _____ = _____ |
| SAMPLES / DATA COLLECTED<br><input type="checkbox"/> SEDIMENT <input checked="" type="checkbox"/> CTD CAST <input checked="" type="checkbox"/> GPS NAV FILE<br><input type="checkbox"/> SAND LANCE <input type="checkbox"/> INVERTS <input checked="" type="checkbox"/> GRAB STILL<br><input checked="" type="checkbox"/> VERT. / <input type="checkbox"/> HORIZ PLNK. TOW <input type="checkbox"/> NO INVERTS PRESENT |   |
| gully eggs; pebbles in fans  |   |

|  |  |                   | SEABED DESCRIPTION  |
|--|--|-------------------|---|
| att epifauna                                   | herring eggs                                 | skate             | storm sand ripples low <input checked="" type="checkbox"/> Y, <input checked="" type="checkbox"/> N                       |
| Boltenia tunic.                                | lobster                                      | Suberites spg     | crests: <input type="checkbox"/> sharp <input checked="" type="checkbox"/> rounded  |
| brachiopod                                     | monkfish                                     | squid             | <input checked="" type="checkbox"/> straight <input type="checkbox"/> multi-rippled                                       |
| bushy bry/hyd                                  | moon snail                                   | tunicate, B pilu. | gvl in ripple troughs <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| cancer crab                                    | mussels                                      | yellow encr. spg  | small ripples, ( <input type="checkbox"/> intermittent) <input type="checkbox"/> Y, <input checked="" type="checkbox"/> N |
| ceri burr anem                                 | ocean pout                                   |                   | sand, unrippled <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| cod; cod juvenile                              |  |                   | sand partial veneer on gravel <input type="checkbox"/> Y, <input type="checkbox"/> N                                      |
| clenophores                                    | Polymastia spg                               |                   | gravel pavement <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| coralline algae                                | red encr. spg                                |                   | boulders <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| cunner   | red hake                                     |                   | mud <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| dk yellow spg                                  | sand dollars                                 |                   | trawled/dredged shell frags <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| Didemnum cols                                  |  | shells/fragments  | trawl/dredge marks <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| dogfish  |  |                   | sand lance in water column <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| <input checked="" type="checkbox"/> finger spg | <input checked="" type="checkbox"/> scallops |                   | sand lance on/in substrate <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| <input checked="" type="checkbox"/> flounder   | <input checked="" type="checkbox"/> sculpin  |                   | sand lance in sed sample <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| haddock  | sea stars                                    |                   | SL size: <input type="checkbox"/> sml <input type="checkbox"/> med <input type="checkbox"/> lg                            |
| herring  |  |                   | SL nos:   |
|  | silver hake                                  |                   |   |

|   |  |                    |          |   |   |
|---|--|--------------------|----------|---|---|
| CRUISE: USGS AUK2017044                     |  | DAY OF MONTH LOCAL | JD LOCAL | <input checked="" type="checkbox"/> DAY | Sunset: Sep 11, 2017<br>1900 EDT = 2300 UTC |
| LOCATION: STELLWAGEN BANK NMS               |  | SEP 13             | 256      | <input type="checkbox"/> NIGHT          |   |
| MONTH YEAR: SEPTEMBER 2017                  |  | DAY OF MONTH UTC   | JD UTC   | VIDEO FWD                               | FILE  |
| LOCAL TIME: EDT                             |  | SEP 13             | 256      | UPPER CAMERA 1                          | 020   |
|   |  |                    |          | VIDEO FWD                               | FILE  |
|   |  |                    |          | LOWER CAMERA 2                          | 1874  |
| USGS STA 4694                               | SBNMS SITE N10                                   | CONSECUTIVE STA 20 | QUAD 8   | VIDEO CLIP 374                          |   |
| <input type="checkbox"/> STA LOC            | <input checked="" type="checkbox"/> VIDEO START  | HH MM SS LOCAL     | DPH, m   | 42 deg 22.017 min                       | -70 deg 20.231 min                          |
|   | <input type="checkbox"/> WATER COLUMN            | 103 506            | 30       | (nav file corr 22.0172 min)             | (nav file corr 20.2311 min)                 |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO START             | HH MM SS LOCAL     | DPH, m   | 42 deg min                              | -70 deg min                                 |
|   | <input checked="" type="checkbox"/> ON SEABED    | 103 602            |          | (nav file corr 22.0136 min)             | (nav file corr 20.2311 min)                 |
|   | <input type="checkbox"/> SMPL ATTEMPT            |                    |          |   |   |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> SAMPLE ATTEMPT          | HH MM SS LOCAL     | DPH, m   | 42 deg min                              | -70 deg min                                 |
|   |  |                    |          | (nav file corr min)                     | (nav file corr min)                         |
| <input checked="" type="checkbox"/> STA LOC | <input checked="" type="checkbox"/> SMPL ATTEMPT | HH MM SS LOCAL     | DPH, m   | 42 deg 21.993 min                       | -70 deg 20.235 min                          |
|   | <input type="checkbox"/> VIDEO END               | 104 118            |          | (nav file corr 21.9931 min)             | (nav file corr 20.2346 min)                 |
|   | <input checked="" type="checkbox"/> OFF SEABED   |                    |          |   |   |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO END               | HH MM SS LOCAL     | DPH, m   | 42 deg min                              | -70 deg min                                 |
|   |  |                    |          | (nav file corr min)                     | (nav file corr min)                         |

UTC = EDT + 4 HRS, EST + 5 HRS

STATION DATE AND TIME, UTC

DDD : HH : MM : SS  
256 14 41 18

☐ NO SEDIMENT SAMPLE: ☐ pre-tripped; ☐ no smpl attempted; ☐ jaws partly open; ☐ washout; ☐ refusal;  
☐ too gravelly/shelly; ☐ smpl too small; ☐ grvl in jaws;

DPH TO SED SURF IN GRAB, cm

SED VOL IN GRAB, liters

RIGHT 2 LEFT 2.5

RT 4.5 + LFT 4.2 = 8.7

## SAMPLES / DATA COLLECTED

☒ SEDIMENT ☐ CTD CAST ☒ GPS NAV FILE  
☐ SAND LANCE ☒ INVERTS ☐ GRAB STILL  
☒ VERT. / ☐ HORIZ PLNK. TOW ☐ NO INVERTS PRESENT

|                   |                                     |                |                   | SEABED DESCRIPTION  |
|-------------------|-------------------------------------|----------------|-------------------|---|
| att epifauna      |                                     | herring eggs   | skate             |   |
| Boltonia tunic.   |                                     | lobster        | Suberites spg     | storm sand ripples <input checked="" type="checkbox"/> Y, <input checked="" type="checkbox"/> N                           |
| brachiopod        |                                     | monkfish       | squid             | crests: <input type="checkbox"/> sharp <input checked="" type="checkbox"/> rounded  |
| bushy bry/hyd     |                                     | moon snail     |                   | <input checked="" type="checkbox"/> straight <input type="checkbox"/> multi-rippled                                       |
| cancer crab       |                                     | mussels        | tunicate, B pilu. | gvl in ripple troughs <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| ceri burr anem    |                                     | ocean pout     | yellow encr. spg  | small ripples, [ <input type="checkbox"/> intermittent] <input type="checkbox"/> Y, <input checked="" type="checkbox"/> N |
| cod; cod juvenile |                                     |                |                   | sand, unrippled <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| ctenophores       |                                     | Polymastia spg |                   | sand partial veneer on gravel <input type="checkbox"/> Y, <input type="checkbox"/> N                                      |
| coralline algae   |                                     | red encr. spg  |                   | gravel pavement <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| cunner            |                                     | red hake       |                   | boulders <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| dk yellow spg     |                                     | sand dollars   |                   | mud <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| Didemnum cols     |                                     |                | shells/fragments  | trawled/dredged shell frags <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| dogfish           |                                     |                |                   | trawl/dredge marks <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| finger spg        | <input checked="" type="checkbox"/> | scallops       |                   | sand lance in water column <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| flounder          | <input checked="" type="checkbox"/> | sculpin        |                   | sand lance on/in substrate <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| haddock           |                                     | sea stars      |                   | sand lance in sed sample <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| herring           |                                     |                |                   | SL size: <input type="checkbox"/> sml <input type="checkbox"/> med <input type="checkbox"/> lg                            |
|                   |                                     | silver hake    |                   | SL nos:   |

AREA OF VAN VEEN GRAB = 0.1 SQ M; MAX DEPTH = 15 CM; VOLUME = 10.8 LITERS

DISTANCE BETWEEN PARALLEL LASERS = 20 CM

PAGE VAL ENTINE USGS COASTAL AND MARINE GEOLOGY PROGRAM, WOODS HOLE, MA

USGS STATION

4694

SBNMS Site

N10

CONSEC STA

20



|   |  |                    |          |   |   |
|---|--|--------------------|----------|---|---|
| CRUISE: USGS AUK2017044                     |  | DAY OF MONTH LOCAL | JD LOCAL | <input checked="" type="checkbox"/> DAY | Sunset: Sep 11, 2017<br>1900 EDT = 2300 UTC |
| LOCATION: STELLWAGEN BANK NMS               |  | SEP 13             | 256      | <input type="checkbox"/> NIGHT          |   |
| MONTH YEAR: SEPTEMBER 2017                  |  | DAY OF MONTH UTC   | JD UTC   | VIDEO FWD                               | FILE  |
| LOCAL TIME: EDT                             |  | SEP 13             | 256      | UPPER CAMERA 1                          | 021   |
|   |  |                    |          | VIDEO FWD                               | FILE  |
|   |  |                    |          | LOWER CAMERA 2                          | 1875  |
| USGS STA                                    | 4695   | SBNMS SITE         | N11      | CONSECUTIVE STA                         | 21  |
|   |  |                    |          | QUAD                                    | 8   |
|   |  |                    |          | VIDEO CLIP                              | 375   |
| <input type="checkbox"/> STA LOC            | <input checked="" type="checkbox"/> VIDEO START  | HH MM SS LOCAL     | DPH, m   | 42 deg                                  | 22.514 min                                  |
|   | <input checked="" type="checkbox"/> WATER COLUMN | 105530             | 28       | (nav file corr                          | 22.5142 min)                                |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO START             | HH MM SS LOCAL     | DPH, m   | 42 deg                                  | min   |
|   | <input checked="" type="checkbox"/> ON SEABED    | 105632             |          | (nav file corr                          | 22.5700 min)                                |
|   | <input type="checkbox"/> SMPL ATTEMPT            |                    |          | (nav file corr                          | 21.3793 min)                                |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> SAMPLE ATTEMPT          | HH MM SS LOCAL     | DPH, m   | 42 deg                                  | min   |
|   |  |                    |          | (nav file corr                          | min)  |
| <input checked="" type="checkbox"/> STA LOC | <input checked="" type="checkbox"/> SMPL ATTEMPT | HH MM SS LOCAL     | DPH, m   | 42 deg                                  | 22.491 min                                  |
|   | <input checked="" type="checkbox"/> VIDEO END    | 110152             |          | (nav file corr                          | 22.4911 min)                                |
|   | <input checked="" type="checkbox"/> OFF SEABED   |                    |          | (nav file corr                          | 21.3547 min)                                |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO END               | HH MM SS LOCAL     | DPH, m   | 42 deg                                  | min   |
|   |  |                    |          | (nav file corr                          | min)  |

UTC = EDT + 4 HRS, EST + 5 HRS

STATION DATE AND TIME, UTC

DDD : HH : MM : SS

256 150152

☐ NO SEDIMENT SAMPLE: ☐ pre-tripped; ☐ no smpl attempted; ☐ jaws partly open; ☐ washout; ☐ refusal;  
☐ too gravelly/shelly; ☐ smpl too small; ☐ grvl in jaws;

DPH TO SED SURF IN GRAB, cm

RIGHT 0.5

LEFT 0.5

SED VOL IN GRAB, liters

RT 5.1 + LFT 5.1 = 10.2

SAMPLES / DATA COLLECTED

☒ SEDIMENT

☒ CTD CAST

☒ GPS NAV FILE

☐ SAND LANCE

☒ INVERTS

☒ GRAB STILL

☒ VERT. / ☐ HORIZ PLNK. TOW

☐ NO INVERTS PRESENT

|  | att epifauna      | herring eggs   | skate             | SEABED DESCRIPTION   |
|--|-------------------|----------------|-------------------|--|
|  | Botlenia tunic.   | lobster        | Suberites spg     | storm sand ripples <input checked="" type="checkbox"/> Y, <input type="checkbox"/> N                           |
|  | brachiopod        | monkfish       | squid             | crests: <input checked="" type="checkbox"/> sharp <input type="checkbox"/> rounded                             |
|  | bushy bry/hyd     | moon snail     |                   | <input checked="" type="checkbox"/> straight <input type="checkbox"/> multi-rippled                            |
|  | cancer crab       | mussels        | tunicate, B pilu. | gvl in ripple troughs <input checked="" type="checkbox"/> Y, <input checked="" type="checkbox"/> N             |
|  | ceri burr anem    | ocean pout     | yellow encr. spg  | small ripples, [ <input type="checkbox"/> intermittent] <input type="checkbox"/> Y, <input type="checkbox"/> N |
|  | cod; cod juvenile |                |                   | sand, unrippled <input type="checkbox"/> Y, <input type="checkbox"/> N   |
|  | ctenophores       | Polymastia spg |                   | sand partial veneer on gravel <input type="checkbox"/> Y, <input type="checkbox"/> N                           |
|  | coralline algae   | red encr. spg  |                   | gravel pavement <input type="checkbox"/> Y, <input type="checkbox"/> N   |
|  | cunner            | red hake       |                   | boulders <input type="checkbox"/> Y, <input type="checkbox"/> N  |
|  | dk yellow spg     | sand dollars   |                   | mud <input type="checkbox"/> Y, <input type="checkbox"/> N   |
|  | Didemnum cols     |                | shells/fragments  | trawled/dredged shell frags <input type="checkbox"/> Y, <input type="checkbox"/> N                             |
|  | dogfish           |                |                   | trawl/dredge marks <input type="checkbox"/> Y, <input type="checkbox"/> N                                      |
|  | finger spg        | scallops       |                   | sand lance in water column <input type="checkbox"/> Y, <input type="checkbox"/> N                              |
|  | flounder          | ✓ sculpin      |                   | sand lance on/in substrate <input type="checkbox"/> Y, <input type="checkbox"/> N                              |
|  | haddock           | sea stars      |                   | sand lance in sed sample <input type="checkbox"/> Y, <input type="checkbox"/> N                                |
|  | herring           |                |                   | SL size: <input type="checkbox"/> sml <input type="checkbox"/> med <input type="checkbox"/> lg                 |
|  |                   | silver hake    |                   | SL nos:  |

AREA OF VAN VEEN GRAB = 0.1 SQ M. MAX DEPTH = 15 CM; VOLUME = 10.8 LITERS

DISTANCE BETWEEN PARALLEL LASERS = 20 CM

PAGE VALENTINE. USGS COASTAL AND MARINE GEOLOGY PROGRAM, WOODS HOLE, MA

USGS STATION

4695

SBNMS Site

N11

CONSEC STA

21

|   |   |                              |                 |   |   |
|---|---|------------------------------|-----------------|---|---|
| CRUISE: USGS AUK2017044                     |   | DAY OF MONTH LOCAL<br>SEP 13 | JD LOCAL<br>256 | <input checked="" type="checkbox"/> DAY<br><input type="checkbox"/> NIGHT | Sunset: Sep 11, 2017<br>1900 EDT = 2300 UTC       |
| LOCATION: STELLWAGEN BANK NMS               |   | DAY OF MONTH UTC<br>SEP 13   | JD UTC<br>256   | VIDEO FWD<br>UPPER CAMERA 1   | FILE 022  |
| MONTH YEAR: SEPTEMBER 2017                  |   |                              |                 | VIDEO FWD<br>LOWER CAMERA 2   | FILE 1876   |
| LOCAL TIME: EDT                             |   |                              |                 |   |   |
| USGS STA 4696                               | SBNMS SITE N12  | CONSECUTIVE STA 22           | QUAD 8          | VIDEO CLIP 376  |   |
| <input type="checkbox"/> STA LOC            | <input checked="" type="checkbox"/> VIDEO START<br><input checked="" type="checkbox"/> WATER COLUMN   | HH MM SS LOCAL<br>111604     | DPH, m<br>26    | 42 deg 22.890 min<br>(nav file corr 22.8912 min)                          | -70 deg 22.594 min<br>(nav file corr 22.5955 min) |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO START<br><input checked="" type="checkbox"/> ON SEABED<br><input type="checkbox"/> SMPL ATTEMPT                      | HH MM SS LOCAL<br>111656     | DPH, m          | 42 deg min<br>(nav file corr 22.8635 min)                                 | -70 deg min<br>(nav file corr 22.5913 min)        |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> SAMPLE ATTEMPT   | HH MM SS LOCAL               | DPH, m          | 42 deg min<br>(nav file corr min)   | -70 deg min<br>(nav file corr min)                |
| <input checked="" type="checkbox"/> STA LOC | <input checked="" type="checkbox"/> SMPL ATTEMPT<br><input checked="" type="checkbox"/> VIDEO END<br><input checked="" type="checkbox"/> OFF SEABED | HH MM SS LOCAL<br>112158     | DPH, m          | 42 deg 22.866 min<br>(nav file corr 22.8667 min)                          | -70 deg 22.567 min<br>(nav file corr 22.5681 min) |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO END  | HH MM SS LOCAL               | DPH, m          | 42 deg min<br>(nav file corr min)   | -70 deg min<br>(nav file corr min)                |
| UTC = EDT + 4 HRS, EST + 5 HRS              |   | STATION DATE AND TIME, UTC   |                 | DDD : HH : MM : SS<br>256 15 21 58  |   |

☐ NO SEDIMENT SAMPLE: ☐ pre-tripped; ☐ no smpl attempted; ☐ jaws partly open; ☐ washout; ☐ refusal;  
☐ too gravelly/shelly; ☐ smpl too small; ☐ grvl in jaws;

DPH TO SED SURF IN GRAB, cm  
RIGHT 6.5 LEFT 7.5  
SED VOL IN GRAB, liters  
RT 2.5 + LFT 2.1 = 4.6

SAMPLES / DATA COLLECTED  
☒ SEDIMENT ☒ CTD CAST ☒ GPS NAV FILE  
☐ SAND LANCE ☒ INVERTS ☐ GRAB STILL  
☒ VERT. / ☐ HORIZ PLNK. TOW ☐ NO INVERTS PRESENT

|  | att epifauna      | herring eggs                                 | skate  | SEABED DESCRIPTION   |
|--|-------------------|--|--|--|
|  | Boltonia tunic.   | lobster                                      | Suberites spg  | storm sand ripples <input checked="" type="checkbox"/> Y, <input type="checkbox"/> N                           |
|  | brachiopod        | monkfish                                     | squid  | crests: <input checked="" type="checkbox"/> sharp <input type="checkbox"/> rounded                             |
|  | bushy bry/hyd     | moon snail                                   |  | <input checked="" type="checkbox"/> straight <input checked="" type="checkbox"/> multi-rippled                 |
|  | cancer crab       | mussels                                      | <input checked="" type="checkbox"/> tunicate, B pilu | gvl in ripple troughs <input type="checkbox"/> Y, <input type="checkbox"/> N                                   |
|  | ceri burr anem    | ocean pout                                   | yellow encr. spg                                     | small ripples, [ <input type="checkbox"/> intermittent] <input type="checkbox"/> Y, <input type="checkbox"/> N |
|  | cod; cod juvenile |  |  | sand, unrippled <input type="checkbox"/> Y, <input type="checkbox"/> N   |
|  | ctenophores       | Polymastia spg                               |  | sand partial veneer on gravel <input type="checkbox"/> Y, <input type="checkbox"/> N                           |
|  | coralline algae   | red encr. spg                                |  | gravel pavement <input type="checkbox"/> Y, <input type="checkbox"/> N   |
|  | cunner            | red hake                                     |  | boulders <input type="checkbox"/> Y, <input type="checkbox"/> N  |
|  | dk yellow spg     | sand dollars                                 |  | mud <input type="checkbox"/> Y, <input type="checkbox"/> N   |
|  | Didemnum cols     |  | shells/fragments                                     | trawled/dredged shell frags <input type="checkbox"/> Y, <input type="checkbox"/> N                             |
|  | dogfish           |  |  | trawl/dredge marks <input type="checkbox"/> Y, <input type="checkbox"/> N                                      |
|  | finger spg        | <input checked="" type="checkbox"/> scallops |  | sand lance in water column <input type="checkbox"/> Y, <input type="checkbox"/> N                              |
|  | flounder          | <input checked="" type="checkbox"/> sculpin  |  | sand lance on/in substrate <input type="checkbox"/> Y, <input type="checkbox"/> N                              |
|  | haddock           | sea stars                                    |  | sand lance in sed sample <input type="checkbox"/> Y, <input type="checkbox"/> N                                |
|  | herring           |  |  | SL size: <input type="checkbox"/> sml <input type="checkbox"/> med <input type="checkbox"/> lg                 |
|  |                   | silver hake                                  |  | SL nos:  |

AREA OF VAN VEEN GRAB = 0.1 SQ M, MAX DEPTH = 15 CM; VOLUME = 10.8 LITERS  
DISTANCE BETWEEN PARALLEL LASERS = 20 CM

PAGE VAI ENTINE USGS COASTAL AND MARINE GEOLOGY PROGRAM, WOODS HOLE, MA

USGS STATION 4696  
SBNMS Site N12, CONSEC STA 22

|   |   |                            |              |  |  |
|---|---|----------------------------|--------------|--|--|
| CRUISE: USGS AUK2017044                     |   | DAY OF MONTH LOCAL         | JD LOCAL     | <input checked="" type="checkbox"/> DAY          | Sunset: Sep 11, 2017<br>1900 EDT = 2300 UTC                            |
| LOCATION: STELLWAGEN BANK NMS               |   | SEP 13                     | 2576         | <input type="checkbox"/> NIGHT                   |  |
| MONTH YEAR: SEPTEMBER 2017                  |   | DAY OF MONTH UTC           | JD UTC       | VIDEO FWD<br>UPPER CAMERA 1                      | FILE 023   |
| LOCAL TIME: EDT                             |   | SEP 13                     | 2576         | VIDEO FWD<br>LOWER CAMERA 2                      | FILE 1877  |
| USGS STA 4697                               | SBNMS SITE N13  | CONSECUTIVE STA 23         | QUAD 8       | VIDEO CLIP 377                                   |  |
| <input type="checkbox"/> STA LOC            | <input checked="" type="checkbox"/> VIDEO START<br><input checked="" type="checkbox"/> WATER COLUMN   | HH MM SS LOCAL<br>113518   | DPH, m<br>26 | 42 deg 23.406 min<br>(nav file corr 23.4059 min) | -70 deg 23.759 min<br>(nav file corr 23.7605 min)                      |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO START<br><input checked="" type="checkbox"/> ON SEABED<br><input type="checkbox"/> SMPL ATTEMPT                      | HH MM SS LOCAL<br>113604   | DPH, m       | 42 deg min                                       | -70 deg min<br>(nav file corr 23.4013 min) (nav file corr 23.7541 min) |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> SAMPLE ATTEMPT   | HH MM SS LOCAL             | DPH, m       | 42 deg min                                       | -70 deg min<br>(nav file corr min) (nav file corr min)                 |
| <input checked="" type="checkbox"/> STA LOC | <input checked="" type="checkbox"/> SMPL ATTEMPT<br><input checked="" type="checkbox"/> VIDEO END<br><input checked="" type="checkbox"/> OFF SEABED | HH MM SS LOCAL<br>114122   | DPH, m       | 42 deg 23.387 min<br>(nav file corr 23.3874 min) | -70 deg 23.724 min<br>(nav file corr 23.7247 min)                      |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO END  | HH MM SS LOCAL             | DPH, m       | 42 deg min                                       | -70 deg min<br>(nav file corr min) (nav file corr min)                 |
| UTC = EDT + 4 HRS, EST + 5 HRS              |   | STATION DATE AND TIME, UTC |              | DDD : HH : MM : SS<br>256 15 41 22               |  |

|  |  |   |   |
|--|--|---|---|
| <input type="checkbox"/> NO SEDIMENT SAMPLE: <input type="checkbox"/> pre-tripped; <input type="checkbox"/> no smpl attempted; <input type="checkbox"/> jaws partly open; <input type="checkbox"/> washout; <input type="checkbox"/> refusal;<br><input type="checkbox"/> too gravelly/shelly; <input type="checkbox"/> smpl too small; <input type="checkbox"/> grvl in jaws; |  |   |   |
| DPH TO SED SURF IN GRAB, cm<br>RIGHT 6.5 LEFT 9  |  | SED VOL IN GRAB, liters<br>RT 2.5 + LFT 1.5 = 4       | <b>SAMPLES / DATA COLLECTED</b><br><input checked="" type="checkbox"/> SEDIMENT <input checked="" type="checkbox"/> CTD CAST <input checked="" type="checkbox"/> GPS NAV FILE<br><input type="checkbox"/> SAND LANCE <input checked="" type="checkbox"/> INVERTS <input checked="" type="checkbox"/> GRAB STILL<br><input checked="" type="checkbox"/> VERT. / <input type="checkbox"/> HORIZ PLNK. TOW <input type="checkbox"/> NO INVERTS PRESENT |
| att epifauna   | herring eggs                                     | skate   | <b>SEABED DESCRIPTION</b>   |
| Boltonia tunic.  | lobster  | Suberites spg   | storm sand ripples <input checked="" type="checkbox"/> Y, <input type="checkbox"/> N  |
| brachiopod   | monkfish   | squid   | crests: <input checked="" type="checkbox"/> sharp <input checked="" type="checkbox"/> rounded   |
| bushy bry/hyd  | moon snail                                       | <input checked="" type="checkbox"/> tunicate, B pilu. | <input checked="" type="checkbox"/> straight <input checked="" type="checkbox"/> multi-rippled  |
| cancer crab  | mussels  | yellow encr. spg                                      | gvl in ripple troughs <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| ceri burr anem   | ocean pout                                       |   | small ripples, [ <input type="checkbox"/> intermittent] <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| cod; cod juvenile  |  |   | sand, unrippled <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| ctenophores  | Polymastia spg                                   |   | sand partial veneer on gravel <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| coralline algae  | red encr. spg                                    |   | gravel pavement <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| cunner   | red hake   |   | boulders <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| dk yellow spg  | <input checked="" type="checkbox"/> sand dollars |   | mud <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| Didemnum cols  |  | shells/fragments                                      | trawled/dredged shell frags <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| dogfish  |  |   | trawl/dredge marks <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| <input checked="" type="checkbox"/> finger spg   | <input checked="" type="checkbox"/> scallops     |   | sand lance in water column <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| <input checked="" type="checkbox"/> flounder   | <input checked="" type="checkbox"/> sculpin      |   | sand lance on/in substrate <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| haddock  | sea stars  |   | sand lance in sed sample <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| herring  |  |   | SL size: <input type="checkbox"/> sml <input type="checkbox"/> med <input type="checkbox"/> lg  |
|  | silver hake                                      |   | SL nos:   |

AREA OF VAN VEEN GRAB = 0.1 SQ M. MAX DEPTH = 15 CM; VOLUME = 10.8 LITERS

DISTANCE BETWEEN PARALLEL LASERS = 20 CM

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USGS STATION 4697  
SBNMS Site N13, CONSEC STA 23



|                               |                              |                 |   |   |
|-------------------------------|------------------------------|-----------------|---|---|
| CRUISE: USGS AUK2017044       | DAY OF MONTH LOCAL<br>SEP 13 | JD LOCAL<br>256 | <input checked="" type="checkbox"/> DAY<br><input type="checkbox"/> NIGHT | Sunset: Sep 11, 2017<br>1900 EDT = 2300 UTC |
| LOCATION: STELLWAGEN BANK NMS | DAY OF MONTH UTC<br>SEP 13   | JD UTC<br>256   | VIDEO FWD<br>UPPER CAMERA 1 FILE 024                                      |   |
| MONTH YEAR: SEPTEMBER 2017    |                              |                 | VIDEO FWD<br>LOWER CAMERA 2 FILE 1878                                     |   |
| LOCAL TIME: EDT               |                              |                 |   |   |

|   |   |                            |              |  |
|---|---|----------------------------|--------------|--|
| USGS STA 4698                               | SBNMS SITE N14  | CONSECUTIVE STA 24         | QUAD 7       | VIDEO CLIP 378                                   |
| <input type="checkbox"/> STA LOC            | <input checked="" type="checkbox"/> VIDEO START<br><input type="checkbox"/> WATER COLUMN  | HH MM SS LOCAL<br>11 56 28 | DPH, m<br>27 | 42 deg 23.803 min<br>(nav file corr 23.8032 min) |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO START<br><input checked="" type="checkbox"/> ON SEABED<br><input type="checkbox"/> SMPL ATTEMPT                      | HH MM SS LOCAL<br>11 57 24 | DPH, m       | 42 deg min<br>(nav file corr 23.7976 min)        |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> SAMPLE ATTEMPT   | HH MM SS LOCAL             | DPH, m       | 42 deg min<br>(nav file corr min)                |
| <input checked="" type="checkbox"/> STA LOC | <input checked="" type="checkbox"/> SMPL ATTEMPT<br><input checked="" type="checkbox"/> VIDEO END<br><input checked="" type="checkbox"/> OFF SEABED | HH MM SS LOCAL<br>12 02 50 | DPH, m       | 42 deg 23.782 min<br>(nav file corr 23.7828 min) |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO END  | HH MM SS LOCAL             | DPH, m       | 42 deg min<br>(nav file corr min)                |

UTC = EDT + 4 HRS, EST + 5 HRS

STATION DATE AND TIME, UTC

DDD : HH : MM : SS  
256 16 02 50

☐ NO SEDIMENT SAMPLE: ☐ pre-tripped; ☐ no smpl attempted; ☐ jaws partly open; ☐ washout; ☐ refusal;  
☐ too gravelly/shelly; ☐ smpl too small; ☐ grvl in jaws;

|  |   |  |
|--|---|--|
| DPH TO SED SURF IN GRAB, cm<br>RIGHT 11, LEFT 11.5 | SED VOL IN GRAB, liters<br>RT 0.8 + LFT 0.7 = 1.5 | SAMPLES / DATA COLLECTED   |
|  |   | <input checked="" type="checkbox"/> SEDIMENT <input type="checkbox"/> CTD CAST <input type="checkbox"/> GPS NAV FILE<br><input type="checkbox"/> SAND LANCE <input checked="" type="checkbox"/> INVERTS <input checked="" type="checkbox"/> GRAB STILL<br><input checked="" type="checkbox"/> VERT. / <input type="checkbox"/> HORIZ PLNK. TOW <input type="checkbox"/> NO INVERTS PRESENT |

|                   |  |  | SEABED DESCRIPTION   |
|-------------------|--|--|--|
| att epifauna      | herring eggs                                     | skate  | storm sand ripples <input checked="" type="checkbox"/> Y, <input type="checkbox"/> N                           |
| Boltonia tunic.   | lobster  | Suberites spg  | crests: <input checked="" type="checkbox"/> sharp <input type="checkbox"/> rounded                             |
| brachiopod        | monkfish   | squid  | <input checked="" type="checkbox"/> straight <input checked="" type="checkbox"/> multi-rippled                 |
| bushy bry/hyd     | moon snail                                       | <input checked="" type="checkbox"/> tunicate, B pily | gvl in ripple troughs <input type="checkbox"/> Y, <input type="checkbox"/> N                                   |
| cancer crab       | mussels  | yellow encr. spg                                     | small ripples, [ <input type="checkbox"/> intermittent] <input type="checkbox"/> Y, <input type="checkbox"/> N |
| ceri burr anem    | ocean pout                                       |  | sand, unrippled <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| cod; cod juvenile |  |  | sand partial veneer on gravel <input type="checkbox"/> Y, <input type="checkbox"/> N                           |
| ctenophores       | Polymastia spg                                   |  | gravel pavement <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| coralline algae   | red encr. spg                                    |  | boulders <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| cunner            | red hake   |  | mud <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| dk yellow spg     | <input checked="" type="checkbox"/> sand dollars |  | trawled/dredged shell frags <input type="checkbox"/> Y, <input type="checkbox"/> N                             |
| Didemnum cols     |  | shells/fragments                                     | trawl/dredge marks <input type="checkbox"/> Y, <input type="checkbox"/> N                                      |
| dogfish           |  |  | sand lance in water column <input type="checkbox"/> Y, <input type="checkbox"/> N                              |
| finger spg        | <input checked="" type="checkbox"/> scallops     |  | sand lance on/in substrate <input type="checkbox"/> Y, <input type="checkbox"/> N                              |
| flounder          | sculpin  |  | sand lance in sed sample <input type="checkbox"/> Y, <input type="checkbox"/> N                                |
| haddock           | sea stars  |  | SL size: <input type="checkbox"/> sml <input type="checkbox"/> med <input type="checkbox"/> lg                 |
| herring           |  |  | SL nos:  |
|                   | silver hake                                      |  |  |

AREA OF VAN VEEN GRAB = 0.1 SQ M, MAX DEPTH = 15 CM; VOLUME = 10.8 LITERS

DISTANCE BETWEEN PARALLEL LASERS = 20 CM

PAGE VAL ENTINE USGS COASTAL AND MARINE GEOLOGY PROGRAM, WOODS HOLE, MA

USGS STATION

SBNMS Site

CONSEC STA

|   |   |                              |                 |   |   |
|---|---|------------------------------|-----------------|---|---|
| CRUISE: USGS AUK2017044                     |   | DAY OF MONTH LOCAL<br>SEP 13 | JD LOCAL<br>256 | <input checked="" type="checkbox"/> DAY<br><input type="checkbox"/> NIGHT | Sunset: Sep 11, 2017<br>1900 EDT = 2300 UTC       |
| LOCATION: STELLWAGEN BANK NMS               |   | DAY OF MONTH UTC<br>SEP 13   | JD UTC<br>256   | VIDEO FWD<br>UPPER CAMERA 1   | FILE 025  |
| MONTH YEAR: SEPTEMBER 2017                  |   |                              |                 | VIDEO FWD<br>LOWER CAMERA 2   | FILE 1879   |
| LOCAL TIME: EDT                             |   |                              |                 |   |   |
| USGS STA 4699                               | SBNMS SITE N15  | CONSECUTIVE STA 25           | QUAD 7          | VIDEO CLIP 379  |   |
| <input type="checkbox"/> STA LOC            | <input checked="" type="checkbox"/> VIDEO START<br><input checked="" type="checkbox"/> WATER COLUMN   | HH MM SS LOCAL<br>121606     | DPH, m<br>28    | 42 deg 24.290 min<br>(nav file corr 24.2906 min)                          | -70 deg 26.130 min<br>(nav file corr 26.1309 min) |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO START<br><input checked="" type="checkbox"/> ON SEABED<br><input type="checkbox"/> SMPL ATTEMPT                      | HH MM SS LOCAL<br>121654     | DPH, m          | 42 deg min<br>(nav file corr 24.2866 min)                                 | -70 deg min<br>(nav file corr 26.1280 min)        |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> SAMPLE ATTEMPT   | HH MM SS LOCAL               | DPH, m          | 42 deg min<br>(nav file corr min)   | -70 deg min<br>(nav file corr min)                |
| <input checked="" type="checkbox"/> STA LOC | <input checked="" type="checkbox"/> SMPL ATTEMPT<br><input checked="" type="checkbox"/> VIDEO END<br><input checked="" type="checkbox"/> OFF SEABED | HH MM SS LOCAL<br>122224     | DPH, m          | 42 deg 24.275 min<br>(nav file corr 24.2750 min)                          | -70 deg 26.110 min<br>(nav file corr 26.1111 min) |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO END  | HH MM SS LOCAL               | DPH, m          | 42 deg min<br>(nav file corr min)   | -70 deg min<br>(nav file corr min)                |

UTC = EDT + 4 HRS, EST + 5 HRS

STATION DATE AND TIME, UTC

DDD : HH : MM : SS  
296 16 22 24

☐ NO SEDIMENT SAMPLE: ☐ pre-tripped; ☐ no smpl attempted; ☐ jaws partly open; ☐ washout; ☐ refusal;  
☐ too gravelly/shelly; ☐ smpl too small; ☐ grvl in jaws;

DPH TO SED SURF IN GRAB, cm  
RIGHT 6.5 LEFT 6.5SED VOL IN GRAB, liters  
RT 2.5 + LFT 2.5 = 5

## SAMPLES / DATA COLLECTED

☒ SEDIMENT ☒ CTD CAST ☐ GPS NAV FILE  
☐ SAND LANCE ☒ INVERTS ☒ GRAB STILL  
☒ VERT. / ☐ HORIZ PLNK. TOW ☐ NO INVERTS PRESENT

|                   |                                     |                |   | SEABED DESCRIPTION   |
|-------------------|-------------------------------------|----------------|---|--|
| att epifauna      |                                     | herring eggs   | skate   | storm sand ripples <input checked="" type="checkbox"/> Y, <input type="checkbox"/> N                           |
| Botlenia tunic.   |                                     | lobster        | Suberites spg   | crests: <input checked="" type="checkbox"/> sharp <input type="checkbox"/> rounded                             |
| brachiopod        |                                     | monkfish       | squid   | <input checked="" type="checkbox"/> straight <input checked="" type="checkbox"/> multi-rippled                 |
| bushy bry/hyd     |                                     | moon snail     | <input checked="" type="checkbox"/> tunicate, B pilu. | gvl in ripple troughs <input type="checkbox"/> Y, <input type="checkbox"/> N                                   |
| cancer crab       |                                     | mussels        | yellow encr. spg                                      | small ripples, [ <input type="checkbox"/> intermittent] <input type="checkbox"/> Y, <input type="checkbox"/> N |
| ceri burr anem    |                                     | ocean pout     |   | sand, unrippled <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| cod; cod juvenile |                                     |                |   | sand partial veneer on gravel <input type="checkbox"/> Y, <input type="checkbox"/> N                           |
| ctenophores       |                                     | Polymastia spg |   | gravel pavement <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| coralline algae   |                                     | red encr. spg  |   | boulders <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| cunner            |                                     | red hake       |   | mud <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| dk yellow spg     | <input checked="" type="checkbox"/> | sand dollars   |   | trawled/dredged shell frags <input type="checkbox"/> Y, <input type="checkbox"/> N                             |
| Didemnum cols     |                                     |                | shells/fragments                                      | trawl/dredge marks <input type="checkbox"/> Y, <input type="checkbox"/> N                                      |
| dogfish           |                                     |                |   | sand lance in water column <input type="checkbox"/> Y, <input type="checkbox"/> N                              |
| finger spg        | <input checked="" type="checkbox"/> | scallops       |   | sand lance on/in substrate <input type="checkbox"/> Y, <input type="checkbox"/> N                              |
| flounder          |                                     | sculpin        |   | sand lance in sed sample <input type="checkbox"/> Y, <input type="checkbox"/> N                                |
| haddock           |                                     | sea stars      |   | SL size: <input type="checkbox"/> sml <input type="checkbox"/> med <input type="checkbox"/> lg                 |
| herring           |                                     |                |   | SL nos:  |
|                   |                                     | silver hake    |   |  |

AREA OF VAN VEEN GRAB = 0.1 SQ M; MAX DEPTH = 15 CM; VOLUME = 10.8 LITERS  
DISTANCE BETWEEN PARALLEL LASERS = 20 CM

PAGE VALENTINE, USGS COASTAL AND MARINE GEOLOGY PROGRAM, WOODS HOLE, MA

SBNMS Site

USGS STATION

CONSEC STA

|   |  |                    |          |   |   |
|---|--|--------------------|----------|---|---|
| CRUISE: USGS AUK2017044                     |  | DAY OF MONTH LOCAL | JD LOCAL | <input checked="" type="checkbox"/> DAY | Sunset: Sep 11, 2017<br>1900 EDT = 2300 UTC |
| LOCATION: STELLWAGEN BANK NMS               |  | SEP 13             | 256      | <input type="checkbox"/> NIGHT          |   |
| MONTH YEAR: SEPTEMBER 2017                  |  | DAY OF MONTH UTC   | JD UTC   | VIDEO FWD                               | FILE  |
| LOCAL TIME: EDT                             |  | SEP 13             | 256      | UPPER CAMERA 1                          | 026   |
|   |  |                    |          | VIDEO FWD                               | FILE  |
|   |  |                    |          | LOWER CAMERA 2                          | 1880  |
| USGS STA                                    | 4700   | SBNMS SITE         | N16      | CONSECUTIVE STA                         | 26  |
|   |  |                    |          | QUAD                                    | 7   |
|   |  |                    |          | VIDEO CLIP                              | 380   |
| <input type="checkbox"/> STA LOC            | <input checked="" type="checkbox"/> VIDEO START  | HH MM SS LOCAL     | DPH, m   | 42 deg                                  | 24.293 min                                  |
|   | <input checked="" type="checkbox"/> WATER COLUMN | 123544             | 30       | (nav file corr                          | 24.2932 min)                                |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO START             | HH MM SS LOCAL     | DPH, m   | 42 deg                                  | min   |
|   | <input checked="" type="checkbox"/> ON SEABED    | 123654             |          | (nav file corr                          | 24.2955 min)                                |
|   | <input type="checkbox"/> SMPL ATTEMPT            |                    |          | (nav file corr                          | 27.4829 min)                                |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> SAMPLE ATTEMPT          | HH MM SS LOCAL     | DPH, m   | 42 deg                                  | min   |
|   |  |                    |          | (nav file corr                          | min)  |
| <input checked="" type="checkbox"/> STA LOC | <input checked="" type="checkbox"/> SMPL ATTEMPT | HH MM SS LOCAL     | DPH, m   | 42 deg                                  | 24.304 min                                  |
|   | <input checked="" type="checkbox"/> VIDEO END    | 124220             |          | (nav file corr                          | 24.3037 min)                                |
|   | <input checked="" type="checkbox"/> OFF SEABED   |                    |          | (nav file corr                          | 27.4765 min)                                |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO END               | HH MM SS LOCAL     | DPH, m   | 42 deg                                  | min   |
|   |  |                    |          | (nav file corr                          | min)  |

UTC = EDT + 4 HRS, EST + 5 HRS

STATION DATE AND TIME, UTC

DDD : HH : MM : SS

256 16 42 20

☐ NO SEDIMENT SAMPLE: ☐ pre-tripped; ☐ no smpl attempted; ☐ jaws partly open; ☐ washout; ☐ refusal;  
☐ too gravelly/shelly; ☐ smpl too small; ☐ grvl in jaws;

DPH TO SED SURF IN GRAB, cm

SED VOL IN GRAB, liters

RIGHT 11.5 LEFT 11.5

RT 0.7 + LFT 0.7 = 1.4

## SAMPLES / DATA COLLECTED

☒ BEDIMENT ☒ CTD CAST ☒ GPS NAV FILE  
☐ SAND LANCE ☐ INVERTS ☐ GRAB STILLs  
☒ VERT. / ☐ HORIZ PLNK. TOW ☒ NO INVERTS PRESENT

|                   |  |                   |  | SEABED DESCRIPTION   |
|-------------------|--|-------------------|--|--|
| att epifauna      | herring eggs                                     | skate             |  | storm sand ripples <input checked="" type="checkbox"/> Y, <input type="checkbox"/> N                           |
| Boltonia tunic.   | lobster  | Suberites spg     |  | crests: <input checked="" type="checkbox"/> sharp <input type="checkbox"/> rounded                             |
| brachiopod        | monkfish   | squid             |  | <input checked="" type="checkbox"/> straight <input type="checkbox"/> multi-rippled                            |
| bushy bry/hyd     | moon snail                                       |                   |  | gvl in ripple troughs <input type="checkbox"/> Y, <input type="checkbox"/> N                                   |
| cancer crab       | mussels  | tunicate, B pilu. |  | small ripples, [ <input type="checkbox"/> intermittent] <input type="checkbox"/> Y, <input type="checkbox"/> N |
| ceri burr anem    | ocean pout                                       | yellow encr. spg  |  | sand, unrippled <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| cod; cod juvenile |  |                   |  | sand partial veneer on gravel <input type="checkbox"/> Y, <input type="checkbox"/> N                           |
| ctenophores       | Polymastia spg                                   |                   |  | gravel pavement <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| coralline algae   | red encr. spg                                    |                   |  | boulders <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| cunner            | red hake   |                   |  | mud <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| dk yellow spg     | <input checked="" type="checkbox"/> sand dollars |                   |  | trawled/dredged shell frags <input type="checkbox"/> Y, <input type="checkbox"/> N                             |
| Didemnum cols     |  | shells/fragments  |  | trawl/dredge marks <input type="checkbox"/> Y, <input type="checkbox"/> N                                      |
| dogfish           |  |                   |  | sand lance in water column <input type="checkbox"/> Y, <input type="checkbox"/> N                              |
| finger spg        | scallops   |                   |  | sand lance on/in substrate <input type="checkbox"/> Y, <input type="checkbox"/> N                              |
| flounder          | <input checked="" type="checkbox"/> sculpin      |                   |  | sand lance in sed sample <input type="checkbox"/> Y, <input type="checkbox"/> N                                |
| haddock           | sea stars  |                   |  | SL size: <input type="checkbox"/> sml <input type="checkbox"/> med <input type="checkbox"/> lg                 |
| herring           |  |                   |  | SL nos:  |
|                   | silver hake                                      |                   |  |  |

AREA OF VAN VEEN GRAB = 0.1 SQ M; MAX DEPTH = 15 CM, VOLUME = 10.8 LITERS

DISTANCE BETWEEN PARALLEL LASERS = 20 CM

PAGE VAL ENTINE USGS COASTAL AND MARINE GEOLOGY PROGRAM, WOODS HOLE, MA

USGS STATION 4700

SBNMS Site N16, CONSEC STA 26



|   |  |                              |                 |   |   |
|---|--|------------------------------|-----------------|---|---|
| CRUISE: USGS AUK2017044                     |  | DAY OF MONTH LOCAL<br>SEP 13 | JD LOCAL<br>256 | <input checked="" type="checkbox"/> DAY<br><input type="checkbox"/> NIGHT | Sunset: Sep 11, 2017<br>1900 EDT = 2300 UTC       |
| LOCATION: STELLWAGEN BANK NMS               |  | DAY OF MONTH UTC<br>SEP 13   | JD UTC<br>256   | VIDEO FWD<br>UPPER CAMERA 1   | FILE 027  |
| MONTH YEAR: SEPTEMBER 2017                  |  |                              |                 | VIDEO FWD<br>LOWER CAMERA 2   | FILE 1881   |
| LOCAL TIME: EDT                             |  |                              |                 |   |   |
| USGS STA 4701                               | SBNMS SITE N1  | CONSECUTIVE STA 27           | QUAD 7          | VIDEO CLIP 381  |   |
| <input type="checkbox"/> STA LOC            | <input checked="" type="checkbox"/> VIDEO START<br><input checked="" type="checkbox"/> WATER COLUMN                                      | HH MM SS LOCAL<br>125636     | DPH, m<br>33    | 42 deg 25.279 min<br>(nav file corr 25.2793 min)                          | -70 deg 26.927 min<br>(nav file corr 26.9266 min) |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO START<br><input checked="" type="checkbox"/> ON SEABED<br><input type="checkbox"/> SMPL ATTEMPT           | HH MM SS LOCAL<br>125730     | DPH, m          | 42 deg min<br>(nav file corr 25.2785 min)                                 | -70 deg min<br>(nav file corr 26.9271 min)        |
| <input checked="" type="checkbox"/> STA LOC | <input checked="" type="checkbox"/> SAMPLE ATTEMPT   | HH MM SS LOCAL<br>125840     | DPH, m          | 42 deg 25.278 min<br>(nav file corr 25.2776 min)                          | -70 deg 26.927 min<br>(nav file corr 26.9273 min) |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> SMPL ATTEMPT<br><input checked="" type="checkbox"/> VIDEO END<br><input checked="" type="checkbox"/> OFF SEABED | HH MM SS LOCAL<br>130234     | DPH, m          | 42 deg 25.279 min<br>(nav file corr 25.2791 min)                          | -70 deg 26.934 min<br>(nav file corr 26.9335 min) |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO END   | HH MM SS LOCAL               | DPH, m          | 42 deg min<br>(nav file corr min)   | -70 deg min<br>(nav file corr min)                |
| UTC = EDT + 4 HRS, EST + 5 HRS              |  | STATION DATE AND TIME, UTC   |                 | DDD : HH : MM : SS<br>256 1658 40   |   |

|  |   |
|--|---|
| <input type="checkbox"/> NO SEDIMENT SAMPLE: <input type="checkbox"/> pre-tripped; <input type="checkbox"/> no smpl attempted; <input type="checkbox"/> jaws partly open; <input type="checkbox"/> washout; <input type="checkbox"/> refusal;<br><input type="checkbox"/> too gravelly/shelly; <input type="checkbox"/> smpl too small; <input type="checkbox"/> grvl in jaws;   |   |
| DPH TO SED SURF IN GRAB, cm<br>RIGHT 9.5 LEFT 11   | SED VOL IN GRAB, liters<br>RT 1.3 + LFT 0.8 = 2.1 |
| SAMPLES / DATA COLLECTED<br><input checked="" type="checkbox"/> SEDIMENT <input checked="" type="checkbox"/> CTD CAST <input checked="" type="checkbox"/> GPS NAV FILE<br><input type="checkbox"/> SAND LANCE <input checked="" type="checkbox"/> INVERTS <input type="checkbox"/> GRAB STILLs<br><input checked="" type="checkbox"/> VERT. / <input type="checkbox"/> HORIZ PLNK. TOW <input type="checkbox"/> NO INVERTS PRESENT |   |

|                   |  |   | SEABED DESCRIPTION  |
|-------------------|--|---|---|
| att epifauna      | herring eggs                                     | skate   | storm sand ripples <input type="checkbox"/> Y, <input checked="" type="checkbox"/> N                                      |
| Boltenia tunic.   | lobster  | Suberites spg   | crests: <input type="checkbox"/> sharp <input type="checkbox"/> rounded   |
| brachiopod        | monkfish   | squid   | <input type="checkbox"/> straight <input type="checkbox"/> multi-rippled  |
| bushy bry/hyd     | moon snail                                       | <input checked="" type="checkbox"/> tunicate, B pilu. | gvl in ripple troughs <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| cancer crab       | mussels  | yellow encr. spg                                      | small ripples, [ <input type="checkbox"/> intermittent] <input checked="" type="checkbox"/> Y, <input type="checkbox"/> N |
| ceri burr anem    | ocean pout                                       |   | sand, unrippled <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| cod; cod juvenile |  |   | sand partial veneer on gravel <input type="checkbox"/> Y, <input type="checkbox"/> N                                      |
| ctenophores       | Polymastia spg                                   |   | gravel pavement <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| coralline algae   | red encr. spg                                    |   | boulders <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| cunner            | red hake   |   | mud <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| dk yellow spg     | <input checked="" type="checkbox"/> sand dollars |   | trawled/dredged shell frags <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| Didemnum cols     |  | shells/fragments                                      | trawl/dredge marks <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| dogfish           |  |   | sand lance in water column <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| finger spg        | <input checked="" type="checkbox"/> scallops     |   | sand lance on/in substrate <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| flounder          | <input checked="" type="checkbox"/> sculpin      |   | sand lance in sed sample <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| haddock           | sea stars  |   | SL size: <input type="checkbox"/> sml <input type="checkbox"/> med <input type="checkbox"/> lg                            |
| herring           |  |   | SL nos:   |
|                   | <input checked="" type="checkbox"/> silver hake  |   |   |

AREA OF VAN VEEN GRAB = 0.1 SQ M, MAX DEPTH = 15 CM, VOLUME = 10.8 LITERS  
 DISTANCE BETWEEN PARALLEL LASERS = 20 CM  
 PAGE VAI FNTINF, USGS COASTAL AND MARINE GEOLOGY PROGRAM, WOODS HOLE, MA

USGS STATION 4701  
 SBNMS Site N1, CONSEC STA 27

|   |   |                            |              |  |   |
|---|---|----------------------------|--------------|--|---|
| CRUISE: USGS AUK2017044                     |   | DAY OF MONTH LOCAL         | JD LOCAL     | <input checked="" type="checkbox"/> DAY          | Sunset: Sep 11, 2017<br>1900 EDT = 2300 UTC       |
| LOCATION: STELLWAGEN BANK NMS               |   | SEP 13                     | 256          | <input type="checkbox"/> NIGHT                   |   |
| MONTH YEAR: SEPTEMBER 2017                  |   | DAY OF MONTH UTC           | JD UTC       | VIDEO FWD UPPER-CAMERA 1                         | FILE 028  |
| LOCAL TIME: EDT                             |   | SEP 13                     | 256          | VIDEO FWD LOWER-CAMERA 2                         | FILE 1882   |
| USGS STA 4702                               | SBNMS SITE N3   | CONSECUTIVE STA 28         | QUAD 8       | VIDEO CLIP 382                                   |   |
| <input type="checkbox"/> STA LOC            | <input checked="" type="checkbox"/> VIDEO START<br><input checked="" type="checkbox"/> WATER COLUMN   | HH MM SS LOCAL<br>131940   | DPH, m<br>33 | 42 deg 24.701 min<br>(nav file corr 24.7016 min) | -70 deg 24.418 min<br>(nav file corr 24.4173 min) |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO START<br><input checked="" type="checkbox"/> ON SEABED<br><input type="checkbox"/> SMPL ATTEMPT                      | HH MM SS LOCAL<br>132042   | DPH, m       | 42 deg min<br>(nav file corr 24.6998 min)        | -70 deg min<br>(nav file corr 24.4217 min)        |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> SAMPLE ATTEMPT   | HH MM SS LOCAL             | DPH, m       | 42 deg min<br>(nav file corr min)                | -70 deg min<br>(nav file corr min)                |
| <input checked="" type="checkbox"/> STA LOC | <input checked="" type="checkbox"/> SMPL ATTEMPT<br><input checked="" type="checkbox"/> VIDEO END<br><input checked="" type="checkbox"/> OFF SEABED | HH MM SS LOCAL<br>132600   | DPH, m       | 42 deg 24.690 min<br>(nav file corr 24.6898 min) | -70 deg 24.450 min<br>(nav file corr 24.4483 min) |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO END  | HH MM SS LOCAL             | DPH, m       | 42 deg min<br>(nav file corr min)                | -70 deg min<br>(nav file corr min)                |
| UTC = EDT + 4 HRS, EST + 5 HRS              |   | STATION DATE AND TIME, UTC |              | DDD : HH : MM : SS<br>256 17 26 00               |   |

☐ NO SEDIMENT SAMPLE: ☐ pre-tripped; ☐ no smpl attempted; ☐ jaws partly open; ☐ washout; ☐ refusal;  
☐ too gravelly/shelly; ☐ smpl too small; ☐ grvl in jaws;

|   |   |  |  |
|---|---|--|--|
| DPH TO SED SURF IN GRAB, cm<br>RIGHT 3.5 LEFT 6 | SED VOL IN GRAB, liters<br>RT 3.8 + LFT 2.7 = 6.5 | SAMPLES / DATA COLLECTED   |  |
|   |   | <input checked="" type="checkbox"/> SEDIMENT   | <input checked="" type="checkbox"/> CTD CAST     |
|   |   | <input type="checkbox"/> SAND LANCE  | <input checked="" type="checkbox"/> GPS NAV FILE |
|   |   | <input checked="" type="checkbox"/> INVERTS  | <input checked="" type="checkbox"/> GRAB STILL   |
|   |   | <input checked="" type="checkbox"/> VERT. / <input type="checkbox"/> HORIZ PLNK. TOW | <input type="checkbox"/> NO INVERTS PRESENT      |

|                   |                |                   | SEABED DESCRIPTION   |   |
|-------------------|----------------|-------------------|--|---|
| att epifauna      | herring eggs   | skate             | storm sand ripples   | <input checked="" type="checkbox"/> Y, <input type="checkbox"/> N |
| Boltonia tunic.   | lobster 1.5m   | Suberites spg     | crests: <input type="checkbox"/> sharp <input type="checkbox"/> rounded                        |   |
| brachiopod        | monkfish       | squid             | <input checked="" type="checkbox"/> straight <input type="checkbox"/> multi-rippled            |   |
| bushy bry/hyd     | moon snail     | tunicate, B pilu. | gvl in ripple troughs  | <input type="checkbox"/> Y, <input type="checkbox"/> N            |
| cancer crab       | mussels        | yellow encr. spg  | small ripples, [ <input type="checkbox"/> intermittent]  | <input type="checkbox"/> Y, <input type="checkbox"/> N            |
| ceri burr anem    | ocean pout     |                   | sand, unrippled  | <input type="checkbox"/> Y, <input type="checkbox"/> N            |
| cod; cod juvenile |                |                   | sand partial veneer on gravel  | <input type="checkbox"/> Y, <input type="checkbox"/> N            |
| ctenophores       | Polymastia spg |                   | gravel pavement  | <input type="checkbox"/> Y, <input type="checkbox"/> N            |
| coralline algae   | red encr. spg  |                   | boulders   | <input type="checkbox"/> Y, <input type="checkbox"/> N            |
| cunner            | red hake       |                   | mud  | <input type="checkbox"/> Y, <input type="checkbox"/> N            |
| dk yellow spg     | sand dollars   |                   | trawled/dredged shell frags  | <input type="checkbox"/> Y, <input type="checkbox"/> N            |
| Didemnum cols     |                | shells/fragments  | trawl/dredge marks   | <input type="checkbox"/> Y, <input type="checkbox"/> N            |
| dogfish           |                |                   | sand lance in water column   | <input type="checkbox"/> Y, <input type="checkbox"/> N            |
| finger spg        | scallops       |                   | sand lance on/in substrate   | <input type="checkbox"/> Y, <input type="checkbox"/> N            |
| flounder          | sculpin        |                   | sand lance in sed sample   | <input type="checkbox"/> Y, <input type="checkbox"/> N            |
| haddock           | sea stars      |                   | SL size: <input type="checkbox"/> sml <input type="checkbox"/> med <input type="checkbox"/> lg |   |
| herring           |                |                   | SL nos:  |   |
|                   | silver hake    |                   |  |   |

AREA OF VAN VEEN GRAB = 0.1 SQ M; MAX DEPTH = 15 CM; VOLUME = 10.8 LITERS  
DISTANCE BETWEEN PARALLEL LASERS = 20 CM

PAGE VALENTINE USGS COASTAL AND MARINE GEOLOGY PROGRAM, WOODS HOLE, MA

USGS STATION 4702  
SBNMS Site N3, CONSEC STA 28

|   |   |                              |                 |   |  |
|---|---|------------------------------|-----------------|---|--|
| CRUISE: USGS AUK2017044                     |   | DAY OF MONTH LOCAL<br>SEP 13 | JD LOCAL<br>256 | <input checked="" type="checkbox"/> DAY<br><input type="checkbox"/> NIGHT | Sunset: Sep 11, 2017<br>1900 EDT = 2300 UTC                            |
| LOCATION: STELLWAGEN BANK NMS               |   | DAY OF MONTH UTC<br>SEP 13   | JD UTC<br>256   | VIDEO FWD<br>UPPER CAMERA 1   | FILE 029   |
| MONTH YEAR: SEPTEMBER 2017                  |   |                              |                 | VIDEO FWD<br>LOWER CAMERA 2   | FILE 1883  |
| LOCAL TIME: EDT                             |   |                              |                 |   |  |
| USGS STA 4703                               |   | SBNMS SITE N4                |                 | CONSECUTIVE STA 29  | QUAD 8 VIDEO CLIP 383  |
| <input type="checkbox"/> STA LOC            | <input checked="" type="checkbox"/> VIDEO START<br><input checked="" type="checkbox"/> WATER COLUMN   | HH MM SS LOCAL<br>133928     | DPH, m<br>32    | 42 deg 24.183 min<br>(nav file corr 24.1837 min)                          | -70 deg 23.207 min<br>(nav file corr 23.2048 min)                      |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO START<br><input checked="" type="checkbox"/> ON SEABED<br><input type="checkbox"/> SMPL ATTEMPT                      | HH MM SS LOCAL<br>134030     | DPH, m          | 42 deg min  | -70 deg min<br>(nav file corr 24.1806 min) (nav file corr 23.2141 min) |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> SAMPLE ATTEMPT   | HH MM SS LOCAL               | DPH, m          | 42 deg min  | -70 deg min<br>(nav file corr min) (nav file corr min)                 |
| <input checked="" type="checkbox"/> STA LOC | <input checked="" type="checkbox"/> SMPL ATTEMPT<br><input checked="" type="checkbox"/> VIDEO END<br><input checked="" type="checkbox"/> OFF SEABED | HH MM SS LOCAL<br>134550     | DPH, m          | 42 deg 24.164 min<br>(nav file corr 24.1641 min)                          | -70 deg 23.263 min<br>(nav file corr 23.2617 min)                      |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO END  | HH MM SS LOCAL               | DPH, m          | 42 deg min  | -70 deg min<br>(nav file corr min) (nav file corr min)                 |
| UTC = EDT + 4 HRS, EST + 5 HRS              |   | STATION DATE AND TIME, UTC   |                 | DDD : HH : MM : SS<br>256 174550  |  |

| <input type="checkbox"/> NO SEDIMENT SAMPLE: <input type="checkbox"/> pre-tripped; <input type="checkbox"/> no smpl attempted; <input type="checkbox"/> jaws partly open; <input type="checkbox"/> washout; <input type="checkbox"/> refusal;<br><input type="checkbox"/> too gravelly/shelly; <input type="checkbox"/> smpl too small; <input type="checkbox"/> grvl in jaws;   |  |  |  |                    |  |  |  |              |              |       |  |                 |         |               |  |            |          |       |   |               |            |   |  |             |         |                  |  |                |            |  |  |                   |  |  |  |             |                |  |  |                 |               |  |   |        |          |  |  |               |              |  |  |               |  |                  |   |         |  |  |   |            |  |  |   |          |         |  |   |         |           |  |   |         |  |  |         |  |             |  |  |
|--|--|--|--|--------------------|--|--|--|--------------|--------------|-------|--|-----------------|---------|---------------|--|------------|----------|-------|---|---------------|------------|---|--|-------------|---------|------------------|--|----------------|------------|--|--|-------------------|--|--|--|-------------|----------------|--|--|-----------------|---------------|--|---|--------|----------|--|--|---------------|--------------|--|--|---------------|--|------------------|---|---------|--|--|---|------------|--|--|---|----------|---------|--|---|---------|-----------|--|---|---------|--|--|---------|--|-------------|--|--|
| DPH TO SED SURF IN GRAB, cm<br>RIGHT 1.5 LEFT 4.5  |  | SED VOL IN GRAB, liters<br>RT 4.7 + LFT 3.4 = 8.1  |  |                    |  |  |  |              |              |       |  |                 |         |               |  |            |          |       |   |               |            |   |  |             |         |                  |  |                |            |  |  |                   |  |  |  |             |                |  |  |                 |               |  |   |        |          |  |  |               |              |  |  |               |  |                  |   |         |  |  |   |            |  |  |   |          |         |  |   |         |           |  |   |         |  |  |         |  |             |  |  |
| worms? protruding from sed in 4703-2.jpg   |  | SAMPLES / DATA COLLECTED<br><input checked="" type="checkbox"/> SEDIMENT <input checked="" type="checkbox"/> CTD CAST <input checked="" type="checkbox"/> GPS NAV FILE<br><input type="checkbox"/> SAND LANCE <input checked="" type="checkbox"/> INVERTS <input checked="" type="checkbox"/> GRAB STILL<br><input checked="" type="checkbox"/> VERT. / <input type="checkbox"/> HORIZ PLNK. TOW <input type="checkbox"/> NO INVERTS PRESENT |  |                    |  |  |  |              |              |       |  |                 |         |               |  |            |          |       |   |               |            |   |  |             |         |                  |  |                |            |  |  |                   |  |  |  |             |                |  |  |                 |               |  |   |        |          |  |  |               |              |  |  |               |  |                  |   |         |  |  |   |            |  |  |   |          |         |  |   |         |           |  |   |         |  |  |         |  |             |  |  |
| <table border="1"> <thead> <tr> <th colspan="4">SEABED DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td>att epifauna</td> <td>herring eggs</td> <td>skate</td> <td>storm sand ripples <input checked="" type="checkbox"/> Y, <input type="checkbox"/> N</td> </tr> <tr> <td>Boltenia tunic.</td> <td>lobster</td> <td>Suberites spg</td> <td>crests: <input checked="" type="checkbox"/> sharp <input type="checkbox"/> rounded</td> </tr> <tr> <td>brachiopod</td> <td>monkfish</td> <td>squid</td> <td><input checked="" type="checkbox"/> straight <input type="checkbox"/> multi-rippled</td> </tr> <tr> <td>bushy bry/hyd</td> <td>moon snail</td> <td><input checked="" type="checkbox"/> tunicate, B pilu.</td> <td>gvl in ripple troughs <input type="checkbox"/> Y, <input type="checkbox"/> N</td> </tr> <tr> <td>cancer crab</td> <td>mussels</td> <td>yellow encr. spg</td> <td>small ripples, [<input type="checkbox"/> intermittent] <input type="checkbox"/> Y, <input type="checkbox"/> N</td> </tr> <tr> <td>ceri burr anem</td> <td>ocean pout</td> <td></td> <td>sand, unrippled <input type="checkbox"/> Y, <input type="checkbox"/> N</td> </tr> <tr> <td>cod; cod juvenile</td> <td></td> <td></td> <td>sand partial veneer on gravel <input type="checkbox"/> Y, <input type="checkbox"/> N</td> </tr> <tr> <td>ctenophores</td> <td>Polymastia spg</td> <td></td> <td>gravel pavement <input type="checkbox"/> Y, <input type="checkbox"/> N</td> </tr> <tr> <td>coralline algae</td> <td>red encr. spg</td> <td></td> <td>boulders <input type="checkbox"/> Y, <input type="checkbox"/> N</td> </tr> <tr> <td>cunner</td> <td>red hake</td> <td></td> <td>mud <input type="checkbox"/> Y, <input type="checkbox"/> N</td> </tr> <tr> <td>dk yellow spg</td> <td>sand dollars</td> <td></td> <td>trawled/dredged shell frags <input type="checkbox"/> Y, <input type="checkbox"/> N</td> </tr> <tr> <td>Didemnum cols</td> <td></td> <td>shells/fragments</td> <td>trawl/dredge marks <input type="checkbox"/> Y, <input type="checkbox"/> N</td> </tr> <tr> <td>dogfish</td> <td></td> <td></td> <td>sand lance in water column <input type="checkbox"/> Y, <input type="checkbox"/> N</td> </tr> <tr> <td>finger spg</td> <td><input checked="" type="checkbox"/> scallops</td> <td></td> <td>sand lance on/in substrate <input type="checkbox"/> Y, <input type="checkbox"/> N</td> </tr> <tr> <td>flounder</td> <td>sculpin</td> <td></td> <td>sand lance in sed sample <input type="checkbox"/> Y, <input type="checkbox"/> N</td> </tr> <tr> <td>haddock</td> <td>sea stars</td> <td></td> <td>SL size: <input type="checkbox"/> sm <input type="checkbox"/> med <input type="checkbox"/> lg</td> </tr> <tr> <td>herring</td> <td></td> <td></td> <td>SL nos:</td> </tr> <tr> <td></td> <td>silver hake</td> <td></td> <td></td> </tr> </tbody> </table> |  |  |  | SEABED DESCRIPTION |  |  |  | att epifauna | herring eggs | skate | storm sand ripples <input checked="" type="checkbox"/> Y, <input type="checkbox"/> N | Boltenia tunic. | lobster | Suberites spg | crests: <input checked="" type="checkbox"/> sharp <input type="checkbox"/> rounded | brachiopod | monkfish | squid | <input checked="" type="checkbox"/> straight <input type="checkbox"/> multi-rippled | bushy bry/hyd | moon snail | <input checked="" type="checkbox"/> tunicate, B pilu. | gvl in ripple troughs <input type="checkbox"/> Y, <input type="checkbox"/> N | cancer crab | mussels | yellow encr. spg | small ripples, [ <input type="checkbox"/> intermittent] <input type="checkbox"/> Y, <input type="checkbox"/> N | ceri burr anem | ocean pout |  | sand, unrippled <input type="checkbox"/> Y, <input type="checkbox"/> N | cod; cod juvenile |  |  | sand partial veneer on gravel <input type="checkbox"/> Y, <input type="checkbox"/> N | ctenophores | Polymastia spg |  | gravel pavement <input type="checkbox"/> Y, <input type="checkbox"/> N | coralline algae | red encr. spg |  | boulders <input type="checkbox"/> Y, <input type="checkbox"/> N | cunner | red hake |  | mud <input type="checkbox"/> Y, <input type="checkbox"/> N | dk yellow spg | sand dollars |  | trawled/dredged shell frags <input type="checkbox"/> Y, <input type="checkbox"/> N | Didemnum cols |  | shells/fragments | trawl/dredge marks <input type="checkbox"/> Y, <input type="checkbox"/> N | dogfish |  |  | sand lance in water column <input type="checkbox"/> Y, <input type="checkbox"/> N | finger spg | <input checked="" type="checkbox"/> scallops |  | sand lance on/in substrate <input type="checkbox"/> Y, <input type="checkbox"/> N | flounder | sculpin |  | sand lance in sed sample <input type="checkbox"/> Y, <input type="checkbox"/> N | haddock | sea stars |  | SL size: <input type="checkbox"/> sm <input type="checkbox"/> med <input type="checkbox"/> lg | herring |  |  | SL nos: |  | silver hake |  |  |
| SEABED DESCRIPTION   |  |  |  |                    |  |  |  |              |              |       |  |                 |         |               |  |            |          |       |   |               |            |   |  |             |         |                  |  |                |            |  |  |                   |  |  |  |             |                |  |  |                 |               |  |   |        |          |  |  |               |              |  |  |               |  |                  |   |         |  |  |   |            |  |  |   |          |         |  |   |         |           |  |   |         |  |  |         |  |             |  |  |
| att epifauna   | herring eggs                                 | skate  | storm sand ripples <input checked="" type="checkbox"/> Y, <input type="checkbox"/> N                           |                    |  |  |  |              |              |       |  |                 |         |               |  |            |          |       |   |               |            |   |  |             |         |                  |  |                |            |  |  |                   |  |  |  |             |                |  |  |                 |               |  |   |        |          |  |  |               |              |  |  |               |  |                  |   |         |  |  |   |            |  |  |   |          |         |  |   |         |           |  |   |         |  |  |         |  |             |  |  |
| Boltenia tunic.  | lobster                                      | Suberites spg  | crests: <input checked="" type="checkbox"/> sharp <input type="checkbox"/> rounded                             |                    |  |  |  |              |              |       |  |                 |         |               |  |            |          |       |   |               |            |   |  |             |         |                  |  |                |            |  |  |                   |  |  |  |             |                |  |  |                 |               |  |   |        |          |  |  |               |              |  |  |               |  |                  |   |         |  |  |   |            |  |  |   |          |         |  |   |         |           |  |   |         |  |  |         |  |             |  |  |
| brachiopod   | monkfish                                     | squid  | <input checked="" type="checkbox"/> straight <input type="checkbox"/> multi-rippled                            |                    |  |  |  |              |              |       |  |                 |         |               |  |            |          |       |   |               |            |   |  |             |         |                  |  |                |            |  |  |                   |  |  |  |             |                |  |  |                 |               |  |   |        |          |  |  |               |              |  |  |               |  |                  |   |         |  |  |   |            |  |  |   |          |         |  |   |         |           |  |   |         |  |  |         |  |             |  |  |
| bushy bry/hyd  | moon snail                                   | <input checked="" type="checkbox"/> tunicate, B pilu.  | gvl in ripple troughs <input type="checkbox"/> Y, <input type="checkbox"/> N                                   |                    |  |  |  |              |              |       |  |                 |         |               |  |            |          |       |   |               |            |   |  |             |         |                  |  |                |            |  |  |                   |  |  |  |             |                |  |  |                 |               |  |   |        |          |  |  |               |              |  |  |               |  |                  |   |         |  |  |   |            |  |  |   |          |         |  |   |         |           |  |   |         |  |  |         |  |             |  |  |
| cancer crab  | mussels                                      | yellow encr. spg   | small ripples, [ <input type="checkbox"/> intermittent] <input type="checkbox"/> Y, <input type="checkbox"/> N |                    |  |  |  |              |              |       |  |                 |         |               |  |            |          |       |   |               |            |   |  |             |         |                  |  |                |            |  |  |                   |  |  |  |             |                |  |  |                 |               |  |   |        |          |  |  |               |              |  |  |               |  |                  |   |         |  |  |   |            |  |  |   |          |         |  |   |         |           |  |   |         |  |  |         |  |             |  |  |
| ceri burr anem   | ocean pout                                   |  | sand, unrippled <input type="checkbox"/> Y, <input type="checkbox"/> N   |                    |  |  |  |              |              |       |  |                 |         |               |  |            |          |       |   |               |            |   |  |             |         |                  |  |                |            |  |  |                   |  |  |  |             |                |  |  |                 |               |  |   |        |          |  |  |               |              |  |  |               |  |                  |   |         |  |  |   |            |  |  |   |          |         |  |   |         |           |  |   |         |  |  |         |  |             |  |  |
| cod; cod juvenile  |  |  | sand partial veneer on gravel <input type="checkbox"/> Y, <input type="checkbox"/> N                           |                    |  |  |  |              |              |       |  |                 |         |               |  |            |          |       |   |               |            |   |  |             |         |                  |  |                |            |  |  |                   |  |  |  |             |                |  |  |                 |               |  |   |        |          |  |  |               |              |  |  |               |  |                  |   |         |  |  |   |            |  |  |   |          |         |  |   |         |           |  |   |         |  |  |         |  |             |  |  |
| ctenophores  | Polymastia spg                               |  | gravel pavement <input type="checkbox"/> Y, <input type="checkbox"/> N   |                    |  |  |  |              |              |       |  |                 |         |               |  |            |          |       |   |               |            |   |  |             |         |                  |  |                |            |  |  |                   |  |  |  |             |                |  |  |                 |               |  |   |        |          |  |  |               |              |  |  |               |  |                  |   |         |  |  |   |            |  |  |   |          |         |  |   |         |           |  |   |         |  |  |         |  |             |  |  |
| coralline algae  | red encr. spg                                |  | boulders <input type="checkbox"/> Y, <input type="checkbox"/> N  |                    |  |  |  |              |              |       |  |                 |         |               |  |            |          |       |   |               |            |   |  |             |         |                  |  |                |            |  |  |                   |  |  |  |             |                |  |  |                 |               |  |   |        |          |  |  |               |              |  |  |               |  |                  |   |         |  |  |   |            |  |  |   |          |         |  |   |         |           |  |   |         |  |  |         |  |             |  |  |
| cunner   | red hake                                     |  | mud <input type="checkbox"/> Y, <input type="checkbox"/> N   |                    |  |  |  |              |              |       |  |                 |         |               |  |            |          |       |   |               |            |   |  |             |         |                  |  |                |            |  |  |                   |  |  |  |             |                |  |  |                 |               |  |   |        |          |  |  |               |              |  |  |               |  |                  |   |         |  |  |   |            |  |  |   |          |         |  |   |         |           |  |   |         |  |  |         |  |             |  |  |
| dk yellow spg  | sand dollars                                 |  | trawled/dredged shell frags <input type="checkbox"/> Y, <input type="checkbox"/> N                             |                    |  |  |  |              |              |       |  |                 |         |               |  |            |          |       |   |               |            |   |  |             |         |                  |  |                |            |  |  |                   |  |  |  |             |                |  |  |                 |               |  |   |        |          |  |  |               |              |  |  |               |  |                  |   |         |  |  |   |            |  |  |   |          |         |  |   |         |           |  |   |         |  |  |         |  |             |  |  |
| Didemnum cols  |  | shells/fragments   | trawl/dredge marks <input type="checkbox"/> Y, <input type="checkbox"/> N                                      |                    |  |  |  |              |              |       |  |                 |         |               |  |            |          |       |   |               |            |   |  |             |         |                  |  |                |            |  |  |                   |  |  |  |             |                |  |  |                 |               |  |   |        |          |  |  |               |              |  |  |               |  |                  |   |         |  |  |   |            |  |  |   |          |         |  |   |         |           |  |   |         |  |  |         |  |             |  |  |
| dogfish  |  |  | sand lance in water column <input type="checkbox"/> Y, <input type="checkbox"/> N                              |                    |  |  |  |              |              |       |  |                 |         |               |  |            |          |       |   |               |            |   |  |             |         |                  |  |                |            |  |  |                   |  |  |  |             |                |  |  |                 |               |  |   |        |          |  |  |               |              |  |  |               |  |                  |   |         |  |  |   |            |  |  |   |          |         |  |   |         |           |  |   |         |  |  |         |  |             |  |  |
| finger spg   | <input checked="" type="checkbox"/> scallops |  | sand lance on/in substrate <input type="checkbox"/> Y, <input type="checkbox"/> N                              |                    |  |  |  |              |              |       |  |                 |         |               |  |            |          |       |   |               |            |   |  |             |         |                  |  |                |            |  |  |                   |  |  |  |             |                |  |  |                 |               |  |   |        |          |  |  |               |              |  |  |               |  |                  |   |         |  |  |   |            |  |  |   |          |         |  |   |         |           |  |   |         |  |  |         |  |             |  |  |
| flounder   | sculpin                                      |  | sand lance in sed sample <input type="checkbox"/> Y, <input type="checkbox"/> N                                |                    |  |  |  |              |              |       |  |                 |         |               |  |            |          |       |   |               |            |   |  |             |         |                  |  |                |            |  |  |                   |  |  |  |             |                |  |  |                 |               |  |   |        |          |  |  |               |              |  |  |               |  |                  |   |         |  |  |   |            |  |  |   |          |         |  |   |         |           |  |   |         |  |  |         |  |             |  |  |
| haddock  | sea stars                                    |  | SL size: <input type="checkbox"/> sm <input type="checkbox"/> med <input type="checkbox"/> lg                  |                    |  |  |  |              |              |       |  |                 |         |               |  |            |          |       |   |               |            |   |  |             |         |                  |  |                |            |  |  |                   |  |  |  |             |                |  |  |                 |               |  |   |        |          |  |  |               |              |  |  |               |  |                  |   |         |  |  |   |            |  |  |   |          |         |  |   |         |           |  |   |         |  |  |         |  |             |  |  |
| herring  |  |  | SL nos:  |                    |  |  |  |              |              |       |  |                 |         |               |  |            |          |       |   |               |            |   |  |             |         |                  |  |                |            |  |  |                   |  |  |  |             |                |  |  |                 |               |  |   |        |          |  |  |               |              |  |  |               |  |                  |   |         |  |  |   |            |  |  |   |          |         |  |   |         |           |  |   |         |  |  |         |  |             |  |  |
|  | silver hake                                  |  |  |                    |  |  |  |              |              |       |  |                 |         |               |  |            |          |       |   |               |            |   |  |             |         |                  |  |                |            |  |  |                   |  |  |  |             |                |  |  |                 |               |  |   |        |          |  |  |               |              |  |  |               |  |                  |   |         |  |  |   |            |  |  |   |          |         |  |   |         |           |  |   |         |  |  |         |  |             |  |  |



|   |   |                            |              |  |   |
|---|---|----------------------------|--------------|--|---|
| CRUISE: USGS AUK2017044                     |   | DAY OF MONTH LOCAL         | JD LOCAL     | <input checked="" type="checkbox"/> DAY          | Sunset: Sep 11, 2017<br>1900 EDT = 2300 UTC       |
| LOCATION: STELLWAGEN BANK NMS               |   | SEP 13                     | 256          | <input type="checkbox"/> NIGHT                   |   |
| MONTH YEAR: SEPTEMBER 2017                  |   | DAY OF MONTH UTC           | JD UTC       | VIDEO FWD UPPER CAMERA                           | FILE 030  |
| LOCAL TIME: EDT                             |   | SEP 13                     | 256          | VIDEO FWD LOWER CAMERA                           | FILE 1884   |
| USGS STA 4704                               | SBNMS SITE N5   | CONSECUTIVE STA 30         | QUAD 8       | VIDEO CLIP 384                                   |   |
| <input type="checkbox"/> STA LOC            | <input checked="" type="checkbox"/> VIDEO START<br><input checked="" type="checkbox"/> WATER COLUMN   | HH MM SS LOCAL<br>140950   | DPH, m<br>33 | 42 deg 23.776 min<br>(nav file corr 23.7767 min) | -70 deg 22.075 min<br>(nav file corr 22.0709 min) |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO START<br><input checked="" type="checkbox"/> ON SEABED<br><input type="checkbox"/> SMPL ATTEMPT                      | HH MM SS LOCAL<br>141100   | DPH, m       | 42 deg min<br>(nav file corr 23.7747 min)        | -70 deg min<br>(nav file corr 22.0910 min)        |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> SAMPLE ATTEMPT   | HH MM SS LOCAL             | DPH, m       | 42 deg min<br>(nav file corr min)                | -70 deg min<br>(nav file corr min)                |
| <input checked="" type="checkbox"/> STA LOC | <input checked="" type="checkbox"/> SMPL ATTEMPT<br><input checked="" type="checkbox"/> VIDEO END<br><input checked="" type="checkbox"/> OFF SEABED | HH MM SS LOCAL<br>141620   | DPH, m       | 42 deg 23.786 min<br>(nav file corr 23.7838 min) | -70 deg 22.171 min<br>(nav file corr 22.1668 min) |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO END  | HH MM SS LOCAL             | DPH, m       | 42 deg min<br>(nav file corr min)                | -70 deg min<br>(nav file corr min)                |
| UTC = EDT + 4 HRS, EST + 5 HRS              |   | STATION DATE AND TIME, UTC |              | DDD : HH : MM : SS<br>256 181620                 |   |

|  |  |   |   |
|--|--|---|---|
| <input checked="" type="checkbox"/> NO SEDIMENT SAMPLE: <input type="checkbox"/> pre-tripped; <input type="checkbox"/> no smpl attempted; <input type="checkbox"/> jaws partly open; <input type="checkbox"/> washout; <input type="checkbox"/> refusal;<br><input type="checkbox"/> too gravelly/shelly; <input type="checkbox"/> smpl too small; <input checked="" type="checkbox"/> grvl in jaws; |  |   |   |
| DPH TO SED SURF IN GRAB, cm<br>RIGHT _____ LEFT _____  |  | SED VOL IN GRAB, liters<br>RT _____ + LFT _____ = _____ |   |
| SAMPLES / DATA COLLECTED   |  |   |   |
| <input type="checkbox"/> SEDIMENT <input checked="" type="checkbox"/> CTD CAST <input checked="" type="checkbox"/> GPS NAV FILE  |  |   |   |
| <input type="checkbox"/> SAND LANCE <input type="checkbox"/> INVERTS <input type="checkbox"/> GRAB STILL   |  |   |   |
| <input checked="" type="checkbox"/> VERT. / <input type="checkbox"/> HORIZ PLNK. TOW <input type="checkbox"/> NO INVERTS PRESENT   |  |   |   |
| cobble in jaws; no sed smpl  |  |   |   |
| SEABED DESCRIPTION   |  |   |   |
| att epifauna   | herring eggs                                 | skate   | storm sand ripples <input checked="" type="checkbox"/> Y, <input type="checkbox"/> N                                      |
| Boltonia tunic.  | lobster                                      | Suberites spg   | crests: <input checked="" type="checkbox"/> sharp <input type="checkbox"/> rounded  |
| brachiopod   | monkfish                                     | squid   | <input checked="" type="checkbox"/> straight <input type="checkbox"/> multi-rippled                                       |
| bushy bry/hyd  | moon snail                                   | tunicate, B pilu.                                       | gvl in ripple troughs <input type="checkbox"/> Y, <input checked="" type="checkbox"/> N                                   |
| cancer crab  | mussels                                      | yellow encr. spg  | small ripples, [ <input type="checkbox"/> intermittent] <input type="checkbox"/> Y, <input checked="" type="checkbox"/> N |
| ceri burr anem   | ocean pout                                   |   | sand, unrippled <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| cod; cod juvenile  |  |   | sand partial veneer on gravel <input type="checkbox"/> Y, <input type="checkbox"/> N                                      |
| ctenophores  | Polymastia spg                               |   | gravel pavement <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| coralline algae  | red encr. spg                                |   | boulders <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| cunner   | red hake                                     |   | mud <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| dk yellow spg  | sand dollars                                 |   | trawled/dredged shell frags <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| Didemnum cols  |  | shells/fragments  | trawl/dredge marks <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| dogfish  |  |   | sand lance in water column <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| finger spg   | <input checked="" type="checkbox"/> scallops |   | sand lance on/in substrate <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| flounder   | sculpin                                      |   | sand lance in sed sample <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| haddock  | sea stars                                    |   | SL size: <input type="checkbox"/> sml <input type="checkbox"/> med <input type="checkbox"/> lg                            |
| herring  |  |   | SL nos:   |
|  | silver hake                                  |   |   |

|   |   |                              |                 |   |   |
|---|---|------------------------------|-----------------|---|---|
| CRUISE: USGS AUK2017044                     |   | DAY OF MONTH LOCAL<br>SEP 13 | JD LOCAL<br>256 | <input checked="" type="checkbox"/> DAY<br><input type="checkbox"/> NIGHT | Sunset: Sep 11, 2017<br>1900 EDT = 2300 UTC       |
| LOCATION: STELLWAGEN BANK NMS               |   | DAY OF MONTH UTC<br>SEP 13   | JD UTC<br>256   | VIDEO FWD<br>UPPER CAMERA 1   | FILE 031  |
| MONTH YEAR: SEPTEMBER 2017                  |   |                              |                 | VIDEO FWD<br>LOWER CAMERA 2   | FILE 1885   |
| LOCAL TIME: EDT                             |   |                              |                 |   |   |
| USGS STA<br>4705                            | SBNMS SITE<br>N5  | CONSECUTIVE STA<br>31        | QUAD<br>8       | VIDEO CLIP<br>385   |   |
| <input type="checkbox"/> STA LOC            | <input checked="" type="checkbox"/> VIDEO START<br><input checked="" type="checkbox"/> WATER COLUMN   | HH MM SS LOCAL<br>142444     | DPH, m<br>34    | 42 deg 23.802 min<br>(nav file corr 23.8026 min)                          | -70 deg 22.041 min<br>(nav file corr 22.0369 min) |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO START<br><input checked="" type="checkbox"/> ON SEABED<br><input type="checkbox"/> SMPL ATTEMPT                      | HH MM SS LOCAL<br>142542     | DPH, m          | 42 deg min<br>(nav file corr 23.8020 min)                                 | -70 deg min<br>(nav file corr 22.0562 min)        |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> SAMPLE ATTEMPT   | HH MM SS LOCAL               | DPH, m          | 42 deg min<br>(nav file corr min)   | -70 deg min<br>(nav file corr min)                |
| <input checked="" type="checkbox"/> STA LOC | <input checked="" type="checkbox"/> SMPL ATTEMPT<br><input checked="" type="checkbox"/> VIDEO END<br><input checked="" type="checkbox"/> OFF SEABED | HH MM SS LOCAL<br>142610     | DPH, m          | 42 deg 23.802 min<br>(nav file corr 23.8016 min)                          | -70 deg 22.068 min<br>(nav file corr 22.0652 min) |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO END  | HH MM SS LOCAL               | DPH, m          | 42 deg min<br>(nav file corr min)   | -70 deg min<br>(nav file corr min)                |

UTC = EDT + 4 HRS, EST + 5 HRS

STATION DATE AND  
TIME, UTCDDD : HH : MM : SS  
256 18 26 10

☐ NO SEDIMENT SAMPLE: ☐ pre-tripped; ☐ no smpl attempted; ☐ jaws partly open; ☐ washout; ☐ refusal;  
☐ too gravelly/shelly; ☐ smpl too small; ☐ grvl in jaws;

|   |   |  |
|---|---|--|
| DPH TO SED SURF IN GRAB, cm<br>RIGHT 9, LEFT 11.5 | SED VOL IN GRAB, liters<br>RT 1.5 + LFT 0.7 = 2.2 | SAMPLES / DATA COLLECTED<br><input checked="" type="checkbox"/> SEDIMENT <input checked="" type="checkbox"/> CTD CAST <input type="checkbox"/> GPS NAV FILE<br><input type="checkbox"/> SAND LANCE <input checked="" type="checkbox"/> INVERTS <input checked="" type="checkbox"/> GRAB STILL<br><input type="checkbox"/> VERT. / <input type="checkbox"/> HORIZ PLNK. TOW <input type="checkbox"/> NO INVERTS PRESENT |
|---|---|--|

|  | att epifauna      | herring eggs   | skate             | SEABED DESCRIPTION   |
|--|-------------------|----------------|-------------------|--|
|  | Boltonia tunic.   | lobster        | Suberites spg     | storm sand ripples <input type="checkbox"/> Y, <input type="checkbox"/> N                                      |
|  | brachiopod        | monkfish       | squid             | crests: <input type="checkbox"/> sharp <input type="checkbox"/> rounded  |
|  | bushy bry/hyd     | moon snail     |                   | <input type="checkbox"/> straight <input type="checkbox"/> multi-rippled                                       |
|  | cancer crab       | mussels        | tunicate, B pilu. | gvl in ripple troughs <input type="checkbox"/> Y, <input type="checkbox"/> N                                   |
|  | ceri burr anem    | ocean pout     | yellow encr. spg  | small ripples, [ <input type="checkbox"/> intermittent] <input type="checkbox"/> Y, <input type="checkbox"/> N |
|  | cod; cod juvenile |                |                   | sand, unrippled <input type="checkbox"/> Y, <input type="checkbox"/> N   |
|  | ctenophores       | Polymastia spg |                   | sand partial veneer on gravel <input type="checkbox"/> Y, <input type="checkbox"/> N                           |
|  | coralline algae   | red encr. spg  |                   | gravel pavement <input type="checkbox"/> Y, <input type="checkbox"/> N   |
|  | cunner            | red hake       |                   | boulders <input type="checkbox"/> Y, <input type="checkbox"/> N  |
|  | dk yellow spg     | sand dollars   |                   | mud <input type="checkbox"/> Y, <input type="checkbox"/> N   |
|  | Didemnum coils    |                | shells/fragments  | trawled/dredged shell frags <input type="checkbox"/> Y, <input type="checkbox"/> N                             |
|  | dogfish           |                |                   | trawl/dredge marks <input type="checkbox"/> Y, <input type="checkbox"/> N                                      |
|  | finger spg        | scallops       |                   | sand lance in water column <input type="checkbox"/> Y, <input type="checkbox"/> N                              |
|  | flounder          | ✓ sculpin      |                   | sand lance on/in substrate <input type="checkbox"/> Y, <input type="checkbox"/> N                              |
|  | haddock           | sea stars      |                   | sand lance in sed sample <input type="checkbox"/> Y, <input type="checkbox"/> N                                |
|  | herring           |                |                   | SL size: <input type="checkbox"/> sml <input type="checkbox"/> med <input type="checkbox"/> lg                 |
|  |                   | silver hake    |                   | SL nos:  |

AREA OF VAN VEEN GRAB = 0.1 SQ M; MAX DEPTH = 15 CM; VOLUME = 10.8 LITERS

DISTANCE BETWEEN PARALLEL LASERS = 20 CM

PAGE VALENTINE, USGS COASTAL AND MARINE GEOLOGY PROGRAM, WOODS HOLE, MA

SBNMS Site

USGS STATION

4705

CONSEC STA

31

|   |  |                            |          |   |   |
|---|--|----------------------------|----------|---|---|
| CRUISE: USGS AUK2017044                     |  | DAY OF MONTH LOCAL         | JD LOCAL | <input checked="" type="checkbox"/> DAY | Sunset: Sep 11, 2017<br>1900 EDT = 2300 UTC |
| LOCATION: STELLWAGEN BANK NMS               |  | SEP 13                     | 256      | <input type="checkbox"/> NIGHT          |   |
| MONTH YEAR: SEPTEMBER 2017                  |  | DAY OF MONTH UTC           | JD UTC   | VIDEO FWD                               | FILE 032                                    |
| LOCAL TIME: EDT                             |  | SEP 13                     | 256      | UPPER CAMERA                            |   |
|   |  |                            |          | VIDEO FWD                               | FILE 1886                                   |
|   |  |                            |          | LOWER CAMERA                            |   |
| USGS STA 4706                               | SBNMS SITE N6                                    | CONSECUTIVE STA 32         | QUAD 8   | VIDEO CLIP 386                          |   |
| <input type="checkbox"/> STA LOC            | <input checked="" type="checkbox"/> VIDEO START  | HH MM SS LOCAL             | DPH, m   | 42 deg 23.334 min                       | -70 deg 20.632 min                          |
|   | <input checked="" type="checkbox"/> WATER COLUMN | 144342                     | 34       | (nav file corr 23.3341 min)             | (nav file corr 20.6898 min)                 |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO START             | HH MM SS LOCAL             | DPH, m   | 42 deg min                              | -70 deg min                                 |
|   | <input checked="" type="checkbox"/> ON SEABED    | 144450                     |          | (nav file corr 23.3367 min)             | (nav file corr 20.7030 min)                 |
|   | <input type="checkbox"/> SMPL ATTEMPT            |                            |          |   |   |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> SAMPLE ATTEMPT          | HH MM SS LOCAL             | DPH, m   | 42 deg min                              | -70 deg min                                 |
|   |  |                            |          | (nav file corr min)                     | (nav file corr min)                         |
| <input checked="" type="checkbox"/> STA LOC | <input checked="" type="checkbox"/> SMPL ATTEMPT | HH MM SS LOCAL             | DPH, m   | 42 deg 23.353 min                       | -70 deg 20.767 min                          |
|   | <input checked="" type="checkbox"/> VIDEO END    | 145002                     |          | (nav file corr 23.3530 min)             | (nav file corr 20.7640 min)                 |
|   | <input checked="" type="checkbox"/> OFF SEABED   |                            |          |   |   |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO END               | HH MM SS LOCAL             | DPH, m   | 42 deg min                              | -70 deg min                                 |
|   |  |                            |          | (nav file corr min)                     | (nav file corr min)                         |
| UTC = EDT + 4 HRS, EST + 5 HRS              |  | STATION DATE AND TIME, UTC |          | DDD : HH : MM : SS<br>256 185002        |   |

| <input type="checkbox"/> NO SEDIMENT SAMPLE: <input type="checkbox"/> pre-tripped; <input type="checkbox"/> no smpl attempted; <input type="checkbox"/> jaws partly open; <input type="checkbox"/> washout; <input type="checkbox"/> refusal;<br><input type="checkbox"/> too gravelly/shelly; <input type="checkbox"/> smpl too small; <input type="checkbox"/> grvl in jaws;   |  |                         |  |   |  |  |  |  |                    |              |  |       |   |                 |   |               |  |            |          |       |   |               |            |  |   |             |         |                   |   |                |  |                  |  |                   |  |  |  |             |                |  |  |                 |               |  |  |        |          |  |   |               |              |  |  |               |  |                  |  |         |  |  |   |            |  |  |   |          |         |  |   |         |           |  |   |         |  |  |  |  |             |  |         |
|--|--|-------------------------|--|---|--|--|--|--|--------------------|--------------|--|-------|---|-----------------|---|---------------|--|------------|----------|-------|---|---------------|------------|--|---|-------------|---------|-------------------|---|----------------|--|------------------|--|-------------------|--|--|--|-------------|----------------|--|--|-----------------|---------------|--|--|--------|----------|--|---|---------------|--------------|--|--|---------------|--|------------------|--|---------|--|--|---|------------|--|--|---|----------|---------|--|---|---------|-----------|--|---|---------|--|--|--|--|-------------|--|---------|
| DPH TO SED SURF IN GRAB, cm  |  | SED VOL IN GRAB, liters |  | SAMPLES / DATA COLLECTED  |  |  |  |  |                    |              |  |       |   |                 |   |               |  |            |          |       |   |               |            |  |   |             |         |                   |   |                |  |                  |  |                   |  |  |  |             |                |  |  |                 |               |  |  |        |          |  |   |               |              |  |  |               |  |                  |  |         |  |  |   |            |  |  |   |          |         |  |   |         |           |  |   |         |  |  |  |  |             |  |         |
| RIGHT 6  | LEFT 5.5   | RT 2.7 + LFT 2.9 = 5.6  |  | <input checked="" type="checkbox"/> SEDIMENT <input checked="" type="checkbox"/> CTD CAST <input checked="" type="checkbox"/> GPS NAV FILE<br><input type="checkbox"/> SAND LANCE <input checked="" type="checkbox"/> INVERTS <input type="checkbox"/> GRAB STILL<br><input checked="" type="checkbox"/> VERT. / <input type="checkbox"/> HORIZ PLNK. TOW <input type="checkbox"/> NO INVERTS PRESENT |  |  |  |  |                    |              |  |       |   |                 |   |               |  |            |          |       |   |               |            |  |   |             |         |                   |   |                |  |                  |  |                   |  |  |  |             |                |  |  |                 |               |  |  |        |          |  |   |               |              |  |  |               |  |                  |  |         |  |  |   |            |  |  |   |          |         |  |   |         |           |  |   |         |  |  |  |  |             |  |         |
| <table border="1"> <thead> <tr> <th colspan="3"></th> <th>SEABED DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td>att epifauna</td> <td><input checked="" type="checkbox"/> herring eggs</td> <td>skate</td> <td>storm sand ripples low <input checked="" type="checkbox"/> Y, <input checked="" type="checkbox"/> N</td> </tr> <tr> <td>Boltonia tunic.</td> <td><input checked="" type="checkbox"/> lobster</td> <td>Suberites spg</td> <td></td> </tr> <tr> <td>brachiopod</td> <td>monkfish</td> <td>squid</td> <td>crests: <input type="checkbox"/> sharp <input type="checkbox"/> rounded</td> </tr> <tr> <td>bushy bry/hyd</td> <td>moon snail</td> <td></td> <td><input checked="" type="checkbox"/> straight <input type="checkbox"/> multi-rippled</td> </tr> <tr> <td>cancer crab</td> <td>mussels</td> <td>tunicate, B pilu.</td> <td>gvl in ripple troughs <input checked="" type="checkbox"/> Y, <input type="checkbox"/> N</td> </tr> <tr> <td>ceri burr anem</td> <td><input checked="" type="checkbox"/> ocean pout</td> <td>yellow encr. spg</td> <td>small ripples, [<input type="checkbox"/> intermittent] <input type="checkbox"/> Y, <input type="checkbox"/> N</td> </tr> <tr> <td>cod; cod juvenile</td> <td></td> <td></td> <td>sand, unrippled <input type="checkbox"/> Y, <input type="checkbox"/> N</td> </tr> <tr> <td>clenophores</td> <td>Polymastia spg</td> <td></td> <td>sand partial veneer on gravel <input type="checkbox"/> Y, <input type="checkbox"/> N</td> </tr> <tr> <td>coralline algae</td> <td>red encr. spg</td> <td></td> <td>gravel pavement <input type="checkbox"/> Y, <input type="checkbox"/> N</td> </tr> <tr> <td>cunner</td> <td>red hake</td> <td></td> <td>boulders <input type="checkbox"/> Y, <input type="checkbox"/> N</td> </tr> <tr> <td>dk yellow spg</td> <td>sand dollars</td> <td></td> <td>mud <input type="checkbox"/> Y, <input type="checkbox"/> N</td> </tr> <tr> <td>Didemnum cols</td> <td></td> <td>shells/fragments</td> <td>trawled/dredged shell frags <input type="checkbox"/> Y, <input type="checkbox"/> N</td> </tr> <tr> <td>dogfish</td> <td></td> <td></td> <td>trawl/dredge marks <input type="checkbox"/> Y, <input type="checkbox"/> N</td> </tr> <tr> <td>finger spg</td> <td><input checked="" type="checkbox"/> scallops</td> <td></td> <td>sand lance in water column <input type="checkbox"/> Y, <input type="checkbox"/> N</td> </tr> <tr> <td>flounder</td> <td>sculpin</td> <td></td> <td>sand lance on/in substrate <input type="checkbox"/> Y, <input type="checkbox"/> N</td> </tr> <tr> <td>haddock</td> <td>sea stars</td> <td></td> <td>sand lance in sed sample <input type="checkbox"/> Y, <input type="checkbox"/> N</td> </tr> <tr> <td>herring</td> <td></td> <td></td> <td>SL size: <input type="checkbox"/> sml <input type="checkbox"/> med <input type="checkbox"/> lg</td> </tr> <tr> <td></td> <td>silver hake</td> <td></td> <td>SL nos:</td> </tr> </tbody> </table> |  |                         |  |   |  |  |  |  | SEABED DESCRIPTION | att epifauna | <input checked="" type="checkbox"/> herring eggs | skate | storm sand ripples low <input checked="" type="checkbox"/> Y, <input checked="" type="checkbox"/> N | Boltonia tunic. | <input checked="" type="checkbox"/> lobster | Suberites spg |  | brachiopod | monkfish | squid | crests: <input type="checkbox"/> sharp <input type="checkbox"/> rounded | bushy bry/hyd | moon snail |  | <input checked="" type="checkbox"/> straight <input type="checkbox"/> multi-rippled | cancer crab | mussels | tunicate, B pilu. | gvl in ripple troughs <input checked="" type="checkbox"/> Y, <input type="checkbox"/> N | ceri burr anem | <input checked="" type="checkbox"/> ocean pout | yellow encr. spg | small ripples, [ <input type="checkbox"/> intermittent] <input type="checkbox"/> Y, <input type="checkbox"/> N | cod; cod juvenile |  |  | sand, unrippled <input type="checkbox"/> Y, <input type="checkbox"/> N | clenophores | Polymastia spg |  | sand partial veneer on gravel <input type="checkbox"/> Y, <input type="checkbox"/> N | coralline algae | red encr. spg |  | gravel pavement <input type="checkbox"/> Y, <input type="checkbox"/> N | cunner | red hake |  | boulders <input type="checkbox"/> Y, <input type="checkbox"/> N | dk yellow spg | sand dollars |  | mud <input type="checkbox"/> Y, <input type="checkbox"/> N | Didemnum cols |  | shells/fragments | trawled/dredged shell frags <input type="checkbox"/> Y, <input type="checkbox"/> N | dogfish |  |  | trawl/dredge marks <input type="checkbox"/> Y, <input type="checkbox"/> N | finger spg | <input checked="" type="checkbox"/> scallops |  | sand lance in water column <input type="checkbox"/> Y, <input type="checkbox"/> N | flounder | sculpin |  | sand lance on/in substrate <input type="checkbox"/> Y, <input type="checkbox"/> N | haddock | sea stars |  | sand lance in sed sample <input type="checkbox"/> Y, <input type="checkbox"/> N | herring |  |  | SL size: <input type="checkbox"/> sml <input type="checkbox"/> med <input type="checkbox"/> lg |  | silver hake |  | SL nos: |
|  |  |                         | SEABED DESCRIPTION   |   |  |  |  |  |                    |              |  |       |   |                 |   |               |  |            |          |       |   |               |            |  |   |             |         |                   |   |                |  |                  |  |                   |  |  |  |             |                |  |  |                 |               |  |  |        |          |  |   |               |              |  |  |               |  |                  |  |         |  |  |   |            |  |  |   |          |         |  |   |         |           |  |   |         |  |  |  |  |             |  |         |
| att epifauna   | <input checked="" type="checkbox"/> herring eggs | skate                   | storm sand ripples low <input checked="" type="checkbox"/> Y, <input checked="" type="checkbox"/> N            |   |  |  |  |  |                    |              |  |       |   |                 |   |               |  |            |          |       |   |               |            |  |   |             |         |                   |   |                |  |                  |  |                   |  |  |  |             |                |  |  |                 |               |  |  |        |          |  |   |               |              |  |  |               |  |                  |  |         |  |  |   |            |  |  |   |          |         |  |   |         |           |  |   |         |  |  |  |  |             |  |         |
| Boltonia tunic.  | <input checked="" type="checkbox"/> lobster      | Suberites spg           |  |   |  |  |  |  |                    |              |  |       |   |                 |   |               |  |            |          |       |   |               |            |  |   |             |         |                   |   |                |  |                  |  |                   |  |  |  |             |                |  |  |                 |               |  |  |        |          |  |   |               |              |  |  |               |  |                  |  |         |  |  |   |            |  |  |   |          |         |  |   |         |           |  |   |         |  |  |  |  |             |  |         |
| brachiopod   | monkfish   | squid                   | crests: <input type="checkbox"/> sharp <input type="checkbox"/> rounded  |   |  |  |  |  |                    |              |  |       |   |                 |   |               |  |            |          |       |   |               |            |  |   |             |         |                   |   |                |  |                  |  |                   |  |  |  |             |                |  |  |                 |               |  |  |        |          |  |   |               |              |  |  |               |  |                  |  |         |  |  |   |            |  |  |   |          |         |  |   |         |           |  |   |         |  |  |  |  |             |  |         |
| bushy bry/hyd  | moon snail                                       |                         | <input checked="" type="checkbox"/> straight <input type="checkbox"/> multi-rippled                            |   |  |  |  |  |                    |              |  |       |   |                 |   |               |  |            |          |       |   |               |            |  |   |             |         |                   |   |                |  |                  |  |                   |  |  |  |             |                |  |  |                 |               |  |  |        |          |  |   |               |              |  |  |               |  |                  |  |         |  |  |   |            |  |  |   |          |         |  |   |         |           |  |   |         |  |  |  |  |             |  |         |
| cancer crab  | mussels  | tunicate, B pilu.       | gvl in ripple troughs <input checked="" type="checkbox"/> Y, <input type="checkbox"/> N                        |   |  |  |  |  |                    |              |  |       |   |                 |   |               |  |            |          |       |   |               |            |  |   |             |         |                   |   |                |  |                  |  |                   |  |  |  |             |                |  |  |                 |               |  |  |        |          |  |   |               |              |  |  |               |  |                  |  |         |  |  |   |            |  |  |   |          |         |  |   |         |           |  |   |         |  |  |  |  |             |  |         |
| ceri burr anem   | <input checked="" type="checkbox"/> ocean pout   | yellow encr. spg        | small ripples, [ <input type="checkbox"/> intermittent] <input type="checkbox"/> Y, <input type="checkbox"/> N |   |  |  |  |  |                    |              |  |       |   |                 |   |               |  |            |          |       |   |               |            |  |   |             |         |                   |   |                |  |                  |  |                   |  |  |  |             |                |  |  |                 |               |  |  |        |          |  |   |               |              |  |  |               |  |                  |  |         |  |  |   |            |  |  |   |          |         |  |   |         |           |  |   |         |  |  |  |  |             |  |         |
| cod; cod juvenile  |  |                         | sand, unrippled <input type="checkbox"/> Y, <input type="checkbox"/> N   |   |  |  |  |  |                    |              |  |       |   |                 |   |               |  |            |          |       |   |               |            |  |   |             |         |                   |   |                |  |                  |  |                   |  |  |  |             |                |  |  |                 |               |  |  |        |          |  |   |               |              |  |  |               |  |                  |  |         |  |  |   |            |  |  |   |          |         |  |   |         |           |  |   |         |  |  |  |  |             |  |         |
| clenophores  | Polymastia spg                                   |                         | sand partial veneer on gravel <input type="checkbox"/> Y, <input type="checkbox"/> N                           |   |  |  |  |  |                    |              |  |       |   |                 |   |               |  |            |          |       |   |               |            |  |   |             |         |                   |   |                |  |                  |  |                   |  |  |  |             |                |  |  |                 |               |  |  |        |          |  |   |               |              |  |  |               |  |                  |  |         |  |  |   |            |  |  |   |          |         |  |   |         |           |  |   |         |  |  |  |  |             |  |         |
| coralline algae  | red encr. spg                                    |                         | gravel pavement <input type="checkbox"/> Y, <input type="checkbox"/> N   |   |  |  |  |  |                    |              |  |       |   |                 |   |               |  |            |          |       |   |               |            |  |   |             |         |                   |   |                |  |                  |  |                   |  |  |  |             |                |  |  |                 |               |  |  |        |          |  |   |               |              |  |  |               |  |                  |  |         |  |  |   |            |  |  |   |          |         |  |   |         |           |  |   |         |  |  |  |  |             |  |         |
| cunner   | red hake   |                         | boulders <input type="checkbox"/> Y, <input type="checkbox"/> N  |   |  |  |  |  |                    |              |  |       |   |                 |   |               |  |            |          |       |   |               |            |  |   |             |         |                   |   |                |  |                  |  |                   |  |  |  |             |                |  |  |                 |               |  |  |        |          |  |   |               |              |  |  |               |  |                  |  |         |  |  |   |            |  |  |   |          |         |  |   |         |           |  |   |         |  |  |  |  |             |  |         |
| dk yellow spg  | sand dollars                                     |                         | mud <input type="checkbox"/> Y, <input type="checkbox"/> N   |   |  |  |  |  |                    |              |  |       |   |                 |   |               |  |            |          |       |   |               |            |  |   |             |         |                   |   |                |  |                  |  |                   |  |  |  |             |                |  |  |                 |               |  |  |        |          |  |   |               |              |  |  |               |  |                  |  |         |  |  |   |            |  |  |   |          |         |  |   |         |           |  |   |         |  |  |  |  |             |  |         |
| Didemnum cols  |  | shells/fragments        | trawled/dredged shell frags <input type="checkbox"/> Y, <input type="checkbox"/> N                             |   |  |  |  |  |                    |              |  |       |   |                 |   |               |  |            |          |       |   |               |            |  |   |             |         |                   |   |                |  |                  |  |                   |  |  |  |             |                |  |  |                 |               |  |  |        |          |  |   |               |              |  |  |               |  |                  |  |         |  |  |   |            |  |  |   |          |         |  |   |         |           |  |   |         |  |  |  |  |             |  |         |
| dogfish  |  |                         | trawl/dredge marks <input type="checkbox"/> Y, <input type="checkbox"/> N                                      |   |  |  |  |  |                    |              |  |       |   |                 |   |               |  |            |          |       |   |               |            |  |   |             |         |                   |   |                |  |                  |  |                   |  |  |  |             |                |  |  |                 |               |  |  |        |          |  |   |               |              |  |  |               |  |                  |  |         |  |  |   |            |  |  |   |          |         |  |   |         |           |  |   |         |  |  |  |  |             |  |         |
| finger spg   | <input checked="" type="checkbox"/> scallops     |                         | sand lance in water column <input type="checkbox"/> Y, <input type="checkbox"/> N                              |   |  |  |  |  |                    |              |  |       |   |                 |   |               |  |            |          |       |   |               |            |  |   |             |         |                   |   |                |  |                  |  |                   |  |  |  |             |                |  |  |                 |               |  |  |        |          |  |   |               |              |  |  |               |  |                  |  |         |  |  |   |            |  |  |   |          |         |  |   |         |           |  |   |         |  |  |  |  |             |  |         |
| flounder   | sculpin  |                         | sand lance on/in substrate <input type="checkbox"/> Y, <input type="checkbox"/> N                              |   |  |  |  |  |                    |              |  |       |   |                 |   |               |  |            |          |       |   |               |            |  |   |             |         |                   |   |                |  |                  |  |                   |  |  |  |             |                |  |  |                 |               |  |  |        |          |  |   |               |              |  |  |               |  |                  |  |         |  |  |   |            |  |  |   |          |         |  |   |         |           |  |   |         |  |  |  |  |             |  |         |
| haddock  | sea stars  |                         | sand lance in sed sample <input type="checkbox"/> Y, <input type="checkbox"/> N                                |   |  |  |  |  |                    |              |  |       |   |                 |   |               |  |            |          |       |   |               |            |  |   |             |         |                   |   |                |  |                  |  |                   |  |  |  |             |                |  |  |                 |               |  |  |        |          |  |   |               |              |  |  |               |  |                  |  |         |  |  |   |            |  |  |   |          |         |  |   |         |           |  |   |         |  |  |  |  |             |  |         |
| herring  |  |                         | SL size: <input type="checkbox"/> sml <input type="checkbox"/> med <input type="checkbox"/> lg                 |   |  |  |  |  |                    |              |  |       |   |                 |   |               |  |            |          |       |   |               |            |  |   |             |         |                   |   |                |  |                  |  |                   |  |  |  |             |                |  |  |                 |               |  |  |        |          |  |   |               |              |  |  |               |  |                  |  |         |  |  |   |            |  |  |   |          |         |  |   |         |           |  |   |         |  |  |  |  |             |  |         |
|  | silver hake                                      |                         | SL nos:  |   |  |  |  |  |                    |              |  |       |   |                 |   |               |  |            |          |       |   |               |            |  |   |             |         |                   |   |                |  |                  |  |                   |  |  |  |             |                |  |  |                 |               |  |  |        |          |  |   |               |              |  |  |               |  |                  |  |         |  |  |   |            |  |  |   |          |         |  |   |         |           |  |   |         |  |  |  |  |             |  |         |

AREA OF VAN VEEN GRAB = 0.1 SQ M; MAX DEPTH = 15 CM; VOLUME = 10.8 LITERS

DISTANCE BETWEEN PARALLEL LASERS = 20 CM

PAGE VALENTINE USGS COASTAL AND MARINE GEOLOGY PROGRAM, WOODS HOLE, MA

USGS STATION 4706

SBNMS Site N6

CONSEC STA 32



|                               |                              |                 |   |   |
|-------------------------------|------------------------------|-----------------|---|---|
| CRUISE: USGS AUK2017044       | DAY OF MONTH LOCAL<br>SEP 13 | JD LOCAL<br>256 | <input checked="" type="checkbox"/> DAY<br><input type="checkbox"/> NIGHT | Sunset: Sep 11, 2017<br>1900 EDT = 2300 UTC |
| LOCATION: STELLWAGEN BANK NMS | DAY OF MONTH UTC<br>SEP 13   | JD UTC<br>256   | VIDEO FWD<br>UPPER CAMERA 1   | FILE 033                                    |
| MONTH YEAR: SEPTEMBER 2017    |                              |                 | VIDEO FWD<br>LOWER CAMERA 2   | FILE 1887                                   |
| LOCAL TIME: EDT               |                              |                 |   |   |

|   |   |                          |              |  |
|---|---|--------------------------|--------------|--|
| USGS STA<br>4707                            | SBNMS SITE<br>N7  | CONSECUTIVE STA<br>33    | QUAD<br>8    | VIDEO CLIP<br>387                                |
| <input type="checkbox"/> STA LOC            | <input checked="" type="checkbox"/> VIDEO START<br><input checked="" type="checkbox"/> WATER COLUMN   | HH MM SS LOCAL<br>150440 | DPH, m<br>32 | 42 deg 22.835 min<br>(nav file corr 22.8353 min) |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO START<br><input checked="" type="checkbox"/> ON SEABED<br><input type="checkbox"/> SMPL ATTEMPT                      | HH MM SS LOCAL<br>150552 | DPH, m       | 42 deg min<br>(nav file corr 22.8389 min)        |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> SAMPLE ATTEMPT   | HH MM SS LOCAL           | DPH, m       | 42 deg min<br>(nav file corr min)                |
| <input checked="" type="checkbox"/> STA LOC | <input checked="" type="checkbox"/> SMPL ATTEMPT<br><input checked="" type="checkbox"/> VIDEO END<br><input checked="" type="checkbox"/> OFF SEABED | HH MM SS LOCAL<br>151142 | DPH, m       | 42 deg 22.863 min<br>(nav file corr 22.8625 min) |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO END  | HH MM SS LOCAL           | DPH, m       | 42 deg min<br>(nav file corr min)                |

UTC = EDT + 4 HRS, EST + 5 HRS

STATION DATE AND TIME, UTC

DDO : HH : MM : SS  
256 191142

☒ NO SEDIMENT SAMPLE: ☐ pre-tripped; ☐ no smpl attempted; ☐ jaws partly open; ☐ washout; ☐ refusal;  
☐ too gravelly/shelly; ☐ smpl too small; ☒ grvl in jaws;

|   |                             |  |
|---|-----------------------------|--|
| DPH TO SED SURF IN GRAB, cm               | SED VOL IN GRAB, liters     | SAMPLES / DATA COLLECTED   |
| RIGHT _____ LEFT _____                    | RT _____ +LFT _____ = _____ | <input type="checkbox"/> SEDIMENT <input checked="" type="checkbox"/> CTD CAST <input checked="" type="checkbox"/> GPS NAV FILE  |
| r-cgs / pub G; no sample, cobbles in jaws |                             | <input type="checkbox"/> SAND LANCE <input checked="" type="checkbox"/> INVERTS <input checked="" type="checkbox"/> GRAB STILL   |
|   |                             | <input checked="" type="checkbox"/> VERT. / <input type="checkbox"/> HORIZ PLNK. TOW <input type="checkbox"/> NO INVERTS PRESENT |

|  |   |  |  |
|--|---|--|--|
| att epifauna                                 | herring eggs                                      | <input checked="" type="checkbox"/> skate            | SEABED DESCRIPTION   |
| Boltonia tunic.                              | lobster   | Suberites spg  | storm sand ripples <input type="checkbox"/> Y, <input checked="" type="checkbox"/> N   |
| brachiopod                                   | monkfish  | squid  | crests: <input type="checkbox"/> sharp <input type="checkbox"/> rounded  |
| bushy bry/hyd                                | moon snail  | calc algae   | <input type="checkbox"/> straight <input type="checkbox"/> multi-rippled   |
| cancer crab                                  | mussels   | tunicate, B pilu.                                    | gvl in ripple troughs <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| ceri burr anem                               | ocean pout  | <input checked="" type="checkbox"/> yellow encr. spg | small ripples: [ <input checked="" type="checkbox"/> intermittent] <input checked="" type="checkbox"/> Y, <input type="checkbox"/> N |
| cod; cod juvenile                            |   |  | sand, unrippled <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| ctenophores                                  | Polymastia spg                                    |  | sand partial veneer on gravel <input checked="" type="checkbox"/> Y, <input type="checkbox"/> N                                      |
| coralline algae                              | <input checked="" type="checkbox"/> red encr. spg |  | gravel pavement <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| cunner                                       | red hake  |  | boulders <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| dk yellow spg                                | sand dollars                                      |  | mud <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| Didemnum cols                                |   | shells/fragments                                     | trawled/dredged shell frags <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| dogfish                                      |   |  | trawl/dredge marks <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| finger spg                                   | <input checked="" type="checkbox"/> scallops      |  | sand lance in water column <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| <input checked="" type="checkbox"/> flounder | <input checked="" type="checkbox"/> sculpin       |  | sand lance on/in substrate <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| haddock                                      | sea stars   |  | sand lance in sed sample <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| herring                                      |   |  | SL size: <input type="checkbox"/> sml <input type="checkbox"/> med <input type="checkbox"/> lg                                       |
|  | silver hake                                       |  | SL nos:  |

AREA OF VAN VEEN GRAB = 0.1 SQ M; MAX DEPTH = 15 CM; VOLUME = 10.8 LITERS

DISTANCE BETWEEN PARALLEL LASERS = 20 CM

PAGE VALENTINE. USGS COASTAL AND MARINE GEOLOGY PROGRAM, WOODS HOLE, MA

USGS STATION 4707

SBNMS Site N7, CONSEC STA 33

|   |  |                    |          |   |   |
|---|--|--------------------|----------|---|---|
| CRUISE: USGS AUK2017044                     |  | DAY OF MONTH LOCAL | JD LOCAL | <input checked="" type="checkbox"/> DAY | Sunset: Sep 11, 2017<br>1900 EDT = 2300 UTC |
| LOCATION: STELLWAGEN BANK NMS               |  | SEP 13             | 256      | <input type="checkbox"/> NIGHT          |   |
| MONTH YEAR: SEPTEMBER 2017                  |  | DAY OF MONTH UTC   | JD UTC   | VIDEO FWD                               | FILE 034                                    |
| LOCAL TIME: EDT                             |  | SEP 13             | 256      | UPPER CAMERA                            |   |
|   |  |                    |          | VIDEO FWD                               | FILE 1868                                   |
|   |  |                    |          | LOWER CAMERA                            | 2   |
| USGS STA 4708                               | SBNMS SITE N8                                    | CONSECUTIVE STA 34 | QUAD 8   | VIDEO CLIP 388                          |   |
| <input type="checkbox"/> STA LOC            | <input checked="" type="checkbox"/> VIDEO START  | HH MM SS LOCAL     | DPH, m   | 42 deg 22.487 min                       | -70 deg 18.368 min                          |
|   | <input checked="" type="checkbox"/> WATER COLUMN | 152452             | 37       | (nav file corr 22.4868 min)             | (nav file corr 18.3636 min)                 |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO START             | HH MM SS LOCAL     | DPH, m   | 42 deg min                              | -70 deg min                                 |
|   | <input checked="" type="checkbox"/> ON SEABED    | 152602             |          | (nav file corr 22.4892 min)             | (nav file corr 18.3906 min)                 |
|   | <input type="checkbox"/> SMPL ATTEMPT            |                    |          |   |   |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> SAMPLE ATTEMPT          | HH MM SS LOCAL     | DPH, m   | 42 deg min                              | -70 deg min                                 |
|   |  |                    |          | (nav file corr min)                     | (nav file corr min)                         |
| <input checked="" type="checkbox"/> STA LOC | <input checked="" type="checkbox"/> SMPL ATTEMPT | HH MM SS LOCAL     | DPH, m   | 42 deg 22.510 min                       | -70 deg 18.476 min                          |
|   | <input checked="" type="checkbox"/> VIDEO END    | 153120             |          | (nav file corr 22.5098 min)             | (nav file corr 18.4732 min)                 |
|   | <input checked="" type="checkbox"/> OFF SEABED   |                    |          |   |   |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO END               | HH MM SS LOCAL     | DPH, m   | 42 deg min                              | -70 deg min                                 |
|   |  |                    |          | (nav file corr min)                     | (nav file corr min)                         |

UTC = EDT + 4 HRS, EST + 5 HRS

STATION DATE AND TIME, UTC

DDD : HH : MM : SS  
256 193120

☐ NO SEDIMENT SAMPLE: ☐ pre-tripped; ☐ no smpl attempted; ☐ jaws partly open; ☐ washout; ☐ refusal;  
☐ too gravelly/shelly; ☐ smpl too small; ☐ grvl in jaws;

DPH TO SED SURF IN GRAB, cm

SED VOL IN GRAB, liters

RIGHT 6.5

LEFT 7.5

RT 2.5 + LFT 2.1 = 4.6

SAMPLES / DATA COLLECTED

☒ SEDIMENT ☒ CTD CAST ☒ GPS NAV FILE  
☐ SAND LANCE ☒ INVERTS ☐ GRAB STILL  
☒ VERT. / ☐ HORIZ PLNK. TOW ☐ NO INVERTS PRESENT

|  |  |                   | SEABED DESCRIPTION   |
|--|--|-------------------|--|
| alt epifauna                                 | herring eggs                                 | skate             | storm sand ripples low <input checked="" type="checkbox"/> Y, <input checked="" type="checkbox"/> N            |
| Boltenia tunic.                              | lobster                                      | Suberites spg     | crests: <input checked="" type="checkbox"/> sharp <input type="checkbox"/> rounded                             |
| brachiopod                                   | monkfish                                     | squid             | <input checked="" type="checkbox"/> straight <input type="checkbox"/> multi-rippled                            |
| bushy bry/hyd                                | moon snail                                   |                   | gvl in ripple troughs <input type="checkbox"/> Y, <input type="checkbox"/> N                                   |
| cancer crab                                  | mussels                                      | tunicate, B pilu. | small ripples, [ <input type="checkbox"/> intermittent] <input type="checkbox"/> Y, <input type="checkbox"/> N |
| ceri burr anem                               | ocean pout                                   | yellow encr. spg  | sand, unrippled <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| cod; cod juvenile                            |  |                   | sand partial veneer on gravel <input type="checkbox"/> Y, <input type="checkbox"/> N                           |
| ctenophores                                  | Polymastia spg                               |                   | gravel pavement <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| coralline algae                              | red encr. spg                                |                   | boulders <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| cunner                                       | red hake                                     |                   | mud <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| dk yellow spg                                | sand dollars                                 |                   | trawled/dredged shell frags <input type="checkbox"/> Y, <input type="checkbox"/> N                             |
| Didemnum cols                                |  | shells/fragments  | trawl/dredge marks <input type="checkbox"/> Y, <input type="checkbox"/> N                                      |
| dogfish                                      |  |                   | sand lance in water column <input type="checkbox"/> Y, <input type="checkbox"/> N                              |
| finger spg                                   | <input checked="" type="checkbox"/> scallops |                   | sand lance on/in substrate <input type="checkbox"/> Y, <input type="checkbox"/> N                              |
| <input checked="" type="checkbox"/> flounder | <input checked="" type="checkbox"/> sculpin  |                   | sand lance in sed sample <input type="checkbox"/> Y, <input type="checkbox"/> N                                |
| haddock                                      | sea stars                                    |                   | SL size: <input type="checkbox"/> sml <input type="checkbox"/> med <input checked="" type="checkbox"/> lg      |
| herring                                      |  |                   | SL nos:  |
|  | silver hake                                  |                   |  |

AREA OF VAN VEEN GRAB = 0.1 SQ M; MAX DEPTH = 15 CM; VOLUME = 10.8 LITERS

DISTANCE BETWEEN PARALLEL LASERS = 20 CM

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SBNMS Site

USGS STATION

4708

CONSEC STA 34

|   |   |                            |              |  |  |
|---|---|----------------------------|--------------|--|--|
| CRUISE: USGS AUK2017044                     |   | DAY OF MONTH LOCAL         | JD LOCAL     | <input checked="" type="checkbox"/> DAY          | Sunset: Sep 11, 2017<br>1900 EDT = 2300 UTC                            |
| LOCATION: STELLWAGEN BANK NMS               |   | SEP 13                     | 256          | <input type="checkbox"/> NIGHT                   |  |
| MONTH YEAR: SEPTEMBER 2017                  |   | DAY OF MONTH UTC           | JD UTC       | VIDEO FWD<br>UPPER CAMERA 1                      | FILE 0035  |
| LOCAL TIME: EDT                             |   | SEP 13                     | 256          | VIDEO FWD<br>LOWER CAMERA 2                      | FILE 1889  |
| USGS STA                                    | 4709  | SBNMS SITE                 | N9           | CONSECUTIVE STA                                  | 35   |
|   |   |                            |              | QUAD   | 8  |
|   |   |                            |              | VIDEO CLIP                                       | 389  |
| <input type="checkbox"/> STA LOC            | <input checked="" type="checkbox"/> VIDEO START<br><input checked="" type="checkbox"/> WATER COLUMN   | HH MM SS LOCAL<br>154522   | DPH, m<br>33 | 42 deg 21.489 min<br>(nav file corr 21.4882 min) | -70 deg 19.135 min<br>(nav file corr 19.1334 min)                      |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO START<br><input checked="" type="checkbox"/> ON SEABED<br><input type="checkbox"/> SMPL ATTEMPT                      | HH MM SS LOCAL<br>154630   | DPH, m       | 42 deg min                                       | -70 deg min<br>(nav file corr 21.4890 min) (nav file corr 19.1495 min) |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> SAMPLE ATTEMPT   | HH MM SS LOCAL             | DPH, m       | 42 deg min                                       | -70 deg min<br>(nav file corr min) (nav file corr min)                 |
| <input checked="" type="checkbox"/> STA LOC | <input checked="" type="checkbox"/> SMPL ATTEMPT<br><input checked="" type="checkbox"/> VIDEO END<br><input checked="" type="checkbox"/> OFF SEABED | HH MM SS LOCAL<br>154706   | DPH, m       | 42 deg 21.491 min<br>(nav file corr 21.4906 min) | -70 deg 19.160 min<br>(nav file corr 19.1573 min)                      |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO END  | HH MM SS LOCAL             | DPH, m       | 42 deg min                                       | -70 deg min<br>(nav file corr min) (nav file corr min)                 |
| UTC = EDT + 4 HRS, EST + 5 HRS              |   | STATION DATE AND TIME, UTC |              | DDD : HH : MM : SS<br>256 194706                 |  |

|   |  |                         |  |  |  |
|---|--|-------------------------|--|--|--|
| <input checked="" type="checkbox"/> NO SEDIMENT SAMPLE: <input type="checkbox"/> pre-tripped; <input type="checkbox"/> no smpl attempted; <input type="checkbox"/> jaws partly open; <input type="checkbox"/> washout; <input type="checkbox"/> refusal;<br><input type="checkbox"/> too gravelly/shelly; <input type="checkbox"/> smpl too small; <input type="checkbox"/> grvl in jaws; <input checked="" type="checkbox"/> shell in jaws |  |                         |  |  |  |
| DPH TO SED SURF IN GRAB, cm   |  | SED VOL IN GRAB, liters |  | SAMPLES / DATA COLLECTED   |  |
| RIGHT   | LEFT   | RT                      | +LFT   | =  |  |
|   |  |                         |  | <input type="checkbox"/> SEDIMENT <input checked="" type="checkbox"/> CTD CAST <input checked="" type="checkbox"/> GPS NAV FILE<br><input type="checkbox"/> SAND LANCE <input type="checkbox"/> INVERTS <input checked="" type="checkbox"/> GRAB STILLs<br><input type="checkbox"/> VERT. / <input type="checkbox"/> HORIZ PLNK. TOW <input type="checkbox"/> NO INVERTS PRESENT |  |
| att epifauna  | herring eggs                                 | skate                   | SEABED DESCRIPTION   |  |  |
| Boltenia tunic.   | lobster                                      | Suberites spg           | storm sand ripples <input checked="" type="checkbox"/> Y, <input type="checkbox"/> N                           |  |  |
| brachiopod  | monkfish                                     | squid                   | crests: <input checked="" type="checkbox"/> sharp <input type="checkbox"/> rounded                             |  |  |
| bushy bry/hyd   | moon snail                                   |                         | <input checked="" type="checkbox"/> straight <input type="checkbox"/> multi-rippled                            |  |  |
| cancer crab   | mussels                                      | tunicate, B pilu.       | gvl in ripple troughs <input type="checkbox"/> Y, <input type="checkbox"/> N                                   |  |  |
| ceri burr anem  | ocean pout                                   | yellow encr. spg        | small ripples, [ <input type="checkbox"/> intermittent] <input type="checkbox"/> Y, <input type="checkbox"/> N |  |  |
| cod; cod juvenile   |  |                         | sand, unrippled <input type="checkbox"/> Y, <input type="checkbox"/> N   |  |  |
| ctenophores   | Polymastia spg                               |                         | sand partial veneer on gravel <input type="checkbox"/> Y, <input type="checkbox"/> N                           |  |  |
| coralline algae   | red encr. spg                                |                         | gravel pavement <input type="checkbox"/> Y, <input type="checkbox"/> N   |  |  |
| cunner  | red hake                                     |                         | boulders <input type="checkbox"/> Y, <input type="checkbox"/> N  |  |  |
| dk yellow spg   | sand dollars                                 |                         | mud <input type="checkbox"/> Y, <input type="checkbox"/> N   |  |  |
| Didemnum cols   |  | shells/fragments        | trawled/dredged shell frags <input type="checkbox"/> Y, <input type="checkbox"/> N                             |  |  |
| dogfish   |  |                         | trawl/dredge marks <input type="checkbox"/> Y, <input type="checkbox"/> N                                      |  |  |
| finger spg  | <input checked="" type="checkbox"/> scallops |                         | sand lance in water column <input type="checkbox"/> Y, <input type="checkbox"/> N                              |  |  |
| flounder  | sculpin                                      |                         | sand lance on/in substrate <input type="checkbox"/> Y, <input type="checkbox"/> N                              |  |  |
| haddock   | sea stars                                    |                         | sand lance in sed sample <input type="checkbox"/> Y, <input type="checkbox"/> N                                |  |  |
| herring   |  |                         | SL size: <input type="checkbox"/> sml <input type="checkbox"/> med <input type="checkbox"/> lg                 |  |  |
|   | silver hake                                  |                         | SL nos:  |  |  |

AREA OF VAN VEEN GRAB = 0.1 SQ M; MAX DEPTH = 15 CM; VOLUME = 10.8 LITERS

DISTANCE BETWEEN PARALLEL LASERS = 20 CM

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USGS STATION 4709

SBNMS Site N9, CONSEC STA 35



|   |   |                              |                 |   |   |
|---|---|------------------------------|-----------------|---|---|
| CRUISE: USGS AUK2017044                     |   | DAY OF MONTH LOCAL<br>SEP 13 | JD LOCAL<br>256 | <input checked="" type="checkbox"/> DAY<br><input type="checkbox"/> NIGHT | Sunset: Sep 11, 2017<br>1900 EDT = 2300 UTC       |
| LOCATION: STELLWAGEN BANK NMS               |   | DAY OF MONTH UTC<br>SEP 13   | JD UTC<br>256   | VIDEO FWD<br>UPPER CAMERA 1   | FILE 036  |
| MONTH YEAR: SEPTEMBER 2017                  |   |                              |                 | VIDEO FWD<br>LOWER CAMERA 2   | FILE 1890   |
| LOCAL TIME: EDT                             |   |                              |                 |   |   |
| USGS STA<br>4710                            | SBNMS SITE<br>N9  | CONSECUTIVE STA<br>36        |                 | QUAD<br>8   | VIDEO CLIP<br>390                                 |
| <input type="checkbox"/> STA LOC            | <input checked="" type="checkbox"/> VIDEO START<br><input checked="" type="checkbox"/> WATER COLUMN   | HH MM SS LOCAL<br>155450     | DPH, m<br>34    | 42 deg 21.473 min<br>(nav file corr 21.4730 min)                          | -70 deg 19.030 min<br>(nav file corr 19.0278 min) |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO START<br><input checked="" type="checkbox"/> ON SEABED<br><input type="checkbox"/> SMPL ATTEMPT                      | HH MM SS LOCAL<br>155550     | DPH, m          | 42 deg min<br>(nav file corr 21.4805 min)                                 | -70 deg min<br>(nav file corr 19.0393 min)        |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> SAMPLE ATTEMPT   | HH MM SS LOCAL               | DPH, m          | 42 deg min<br>(nav file corr min)   | -70 deg min<br>(nav file corr min)                |
| <input checked="" type="checkbox"/> STA LOC | <input checked="" type="checkbox"/> SMPL ATTEMPT<br><input checked="" type="checkbox"/> VIDEO END<br><input checked="" type="checkbox"/> OFF SEABED | HH MM SS LOCAL<br>155650     | DPH, m          | 42 deg 21.490 min<br>(nav file corr 21.4896 min)                          | -70 deg 19.056 min<br>(nav file corr 19.0520 min) |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO END  | HH MM SS LOCAL               | DPH, m          | 42 deg min<br>(nav file corr min)   | -70 deg min<br>(nav file corr min)                |

UTC = EDT + 4 HRS, EST + 5 HRS

STATION DATE AND TIME, UTC

DDD : HH : MM : SS  
256 19 56 50

☐ NO SEDIMENT SAMPLE: ☐ pre-tripped; ☐ no smpl attempted; ☐ jaws partly open; ☐ washout; ☐ refusal;  
☐ too gravelly/shelly; ☐ smpl too small; ☐ grvl in jaws;

DPH TO SED SURF IN GRAB, cm

SED VOL IN GRAB, liters

RIGHT 1.4

LEFT 3

RT 4.7 LFT 4.0 = 8.7

## SAMPLES / DATA COLLECTED

☒ SEDIMENT ☒ CTD CAST ☐ GPS NAV FILE  
☐ SAND LANCE ☒ INVERTS ☒ GRAB STILL  
☐ VERT. / ☐ HORIZ PLNK. TOW ☐ NO INVERTS PRESENT

|                   |  |                   | SEABED DESCRIPTION   |
|-------------------|--|-------------------|--|
| att epifauna      | herring eggs                                 | skate             | storm sand ripples <input type="checkbox"/> Y, <input checked="" type="checkbox"/> N                           |
| Boltenia tunic.   | lobster                                      | Suberites spg     | crests: <input type="checkbox"/> sharp <input type="checkbox"/> rounded  |
| brachiopod        | <input checked="" type="checkbox"/> monkfish | squid             | <input type="checkbox"/> straight <input type="checkbox"/> multi-rippled                                       |
| bushy bry/hyd     | moon snail                                   |                   | gvl in ripple troughs <input type="checkbox"/> Y, <input type="checkbox"/> N                                   |
| cancer crab       | mussels                                      | tunicate, B pilu. | small ripples, [ <input type="checkbox"/> intermittent] <input type="checkbox"/> Y, <input type="checkbox"/> N |
| ceri burr anem    | ocean pout                                   | yellow encr. spg  | sand, unrippled <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| cod; cod juvenile |  |                   | sand partial veneer on gravel <input type="checkbox"/> Y, <input type="checkbox"/> N                           |
| ctenophores       | Polymastia spg                               |                   | gravel pavement <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| coralline algae   | red encr. spg                                |                   | boulders <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| cunner            | red hake                                     |                   | mud <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| dk yellow spg     | sand dollars                                 |                   | trawled/dredged shell frags <input type="checkbox"/> Y, <input type="checkbox"/> N                             |
| Didemnum cols     |  | shells/fragments  | trawl/dredge marks <input type="checkbox"/> Y, <input type="checkbox"/> N                                      |
| dogfish           |  |                   | sand lance in water column <input type="checkbox"/> Y, <input type="checkbox"/> N                              |
| finger spg        | <input checked="" type="checkbox"/> scallops |                   | sand lance on/in substrate <input type="checkbox"/> Y, <input type="checkbox"/> N                              |
| flounder          | sculpin                                      |                   | sand lance in sed sample <input type="checkbox"/> Y, <input type="checkbox"/> N                                |
| haddock           | sea stars                                    |                   | SL size: <input type="checkbox"/> sml <input type="checkbox"/> med <input type="checkbox"/> lg                 |
| herring           |  |                   | SL nos:  |
|                   | silver hake                                  |                   |  |

AREA OF VAN VEEN GRAB = 0.1 SQ M, MAX DEPTH = 15 CM, VOLUME = 10.8 LITERS  
 DISTANCE BETWEEN PARALLEL LASERS = 20 CM

PAGE VALENTINE, USGS COASTAL AND MARINE GEOLOGY PROGRAM, WOODS HOLE, MA

SBNMS Site

USGS STATION

CONSEC STA

|                                      |  |                                     |                        |   |  |
|--------------------------------------|--|-------------------------------------|------------------------|---|--|
| <b>CRUISE:</b> USGS AUK2017044       |  | <b>DAY OF MONTH LOCAL</b><br>SEP 13 | <b>JD LOCAL</b><br>256 | <input checked="" type="checkbox"/> DAY<br><input type="checkbox"/> NIGHT | <b>Sunset:</b> Sep 11, 2017<br>1900 EDT = 2300 UTC |
| <b>LOCATION:</b> STELLWAGEN BANK NMS |  | <b>DAY OF MONTH UTC</b><br>SEP 13   | <b>JD UTC</b><br>256   | <b>VIDEO FWD UPPER CAMERA</b> 1<br><b>VIDEO FWD LOWER CAMERA</b> 2        | <b>FILE</b> 037<br><b>FILE</b> 1891                |
| <b>MONTH YEAR:</b> SEPTEMBER 2017    |  |                                     |                        |   |  |
| <b>LOCAL TIME:</b> EDT               |  |                                     |                        |   |  |

  

|                      |                      |                           |               |                       |
|----------------------|----------------------|---------------------------|---------------|-----------------------|
| <b>USGS STA</b> 4711 | <b>SBNMS SITE</b> C1 | <b>CONSECUTIVE STA</b> 37 | <b>QUAD</b> 5 | <b>VIDEO CLIP</b> 391 |
|----------------------|----------------------|---------------------------|---------------|-----------------------|

  

|   |  |                          |              |                             |                             |
|---|--|--------------------------|--------------|-----------------------------|-----------------------------|
| <input type="checkbox"/> STA LOC            | <input checked="" type="checkbox"/> VIDEO START  | HH MM SS LOCAL<br>162214 | DPH, m<br>34 | 42 deg 18.616 min           | -70 deg 17.132 min          |
|   | <input checked="" type="checkbox"/> WATER COLUMN |                          |              | (nav file corr 18.6143 min) | (nav file corr 17.1287 min) |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO START             | HH MM SS LOCAL<br>162318 | DPH, m       | 42 deg min                  | -70 deg min                 |
|   | <input checked="" type="checkbox"/> ON SEABED    |                          |              | (nav file corr 18.6263 min) | (nav file corr 17.1406 min) |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> SMPL ATTEMPT            |                          |              | 42 deg min                  | -70 deg min                 |
|   |  |                          |              | (nav file corr min)         | (nav file corr min)         |
| <input checked="" type="checkbox"/> STA LOC | <input checked="" type="checkbox"/> SMPL ATTEMPT | HH MM SS LOCAL<br>162834 | DPH, m       | 42 deg 18.673 min           | -70 deg 17.189 min          |
|   | <input checked="" type="checkbox"/> VIDEO END    |                          |              | (nav file corr 18.6730 min) | (nav file corr 17.1874 min) |
| <input type="checkbox"/> STA LOC            | <input checked="" type="checkbox"/> OFF SEABED   |                          |              | 42 deg min                  | -70 deg min                 |
|   | <input type="checkbox"/> VIDEO END               |                          |              | (nav file corr min)         | (nav file corr min)         |

  

UTC = EDT + 4 HRS, EST + 5 HRS      **STATION DATE AND TIME, UTC**      DDD : HH : MM : SS  
256 202834

  

☐ **NO SEDIMENT SAMPLE:**    ☐ pre-tripped;    ☐ no smpl attempted;    ☐ jaws partly open;    ☐ washout;    ☐ refusal;  
☐ too gravelly/shelly;    ☐ smpl too small;    ☐ grvl in jaws;

  

|   |   |   |
|---|---|---|
| <b>DPH TO SED SURF IN GRAB, cm</b><br>RIGHT 3.5    LEFT 4.5 | <b>SED VOL IN GRAB, liters</b><br>RT 3.18 + LFT 3.4 = 7.2 | <b>SAMPLES / DATA COLLECTED</b>   |
|   |   | <input checked="" type="checkbox"/> SEDIMENT <input checked="" type="checkbox"/> CTD CAST <input type="checkbox"/> GPS NAV FILE<br><input type="checkbox"/> SAND LANCE <input checked="" type="checkbox"/> INVERTS <input checked="" type="checkbox"/> GRAB STILL<br><input checked="" type="checkbox"/> VERT. / <input type="checkbox"/> HORIZ PLNK. TOW <input type="checkbox"/> NO INVERTS PRESENT |

  

|   |  |                           |   |
|---|--|---------------------------|---|
|   |  | <b>SEABED DESCRIPTION</b> |   |
| att epifauna                                    | herring eggs                                     | skate                     |   |
| Boltonia tunic.                                 | lobster  | Suberites spg             | storm sand ripples <input type="checkbox"/> Y, <input checked="" type="checkbox"/> N                                      |
| brachiopod                                      | monkfish   | squid                     | crests: <input type="checkbox"/> sharp <input type="checkbox"/> rounded   |
| bushy bry/hyd                                   | moon snail                                       |                           | <input type="checkbox"/> straight <input type="checkbox"/> multi-rippled  |
| <input checked="" type="checkbox"/> cancer crab | mussels  | tunicate, B pilu.         | gvl in ripple troughs <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| ceri burr anem                                  | ocean pout                                       | yellow encr. spg          | small ripples, [ <input type="checkbox"/> intermittent] <input type="checkbox"/> Y, <input checked="" type="checkbox"/> N |
| cod; cod juvenile                               |  |                           | sand, unrippled <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| ctenophores                                     | Polymastia spg                                   |                           | sand partial veneer on gravel <input type="checkbox"/> Y, <input type="checkbox"/> N                                      |
| coralline algae                                 | red encr. spg                                    |                           | gravel pavement <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| cunner  | red hake   |                           | boulders <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| dk yellow spg                                   | <input checked="" type="checkbox"/> sand dollars |                           | mud <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| Didemnum cols                                   |  | shells/fragments          | trawled/dredged shell frags <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| dogfish   |  |                           | trawl/dredge marks <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| <input checked="" type="checkbox"/> finger spg  | scallops   |                           | sand lance in water column <input type="checkbox"/> Y, <input checked="" type="checkbox"/> N                              |
| <input checked="" type="checkbox"/> flounder    | <input checked="" type="checkbox"/> sculpin      |                           | sand lance on/in substrate <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| haddock   | sea stars  |                           | sand lance in sed sample <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| herring   |  |                           | SL size: <input type="checkbox"/> sml <input type="checkbox"/> med <input type="checkbox"/> lg                            |
|   | silver hake                                      |                           | SL nos:   |

AREA OF VAN VEEN GRAB = 0.1 SQ M; MAX DEPTH = 15 CM; VOLUME = 10.8 LITERS  
DISTANCE BETWEEN PARALLEL LASERS = 20 CM

PAGE VALENTINE, USGS COASTAL AND MARINE GEOLOGY PROGRAM, WOODS HOLE, MA

**USGS STATION** 4711

**SBNMS Site** C1, **CONSEC STA** 37

|   |   |                          |              |  |   |
|---|---|--------------------------|--------------|--|---|
| CRUISE: USGS AUK2017044                     |   | DAY OF MONTH LOCAL       | JD LOCAL     | <input checked="" type="checkbox"/> DAY          | Sunset: Sep 11, 2017<br>1900 EDT = 2300 UTC       |
| LOCATION: STELLWAGEN BANK NMS               |   | SEP 13                   | 256          | <input type="checkbox"/> NIGHT                   |   |
| MONTH YEAR: SEPTEMBER 2017                  |   | DAY OF MONTH UTC         | JD UTC       | VIDEO FWD UPPER CAMERA 1 FILE 038                |   |
| LOCAL TIME: EDT                             |   | SEP 13                   | 256          | VIDEO FWD LOWER CAMERA 2 FILE 1892               |   |
| USGS STA 4712                               | SBNMS SITE C14  | CONSECUTIVE STA 38       | QUAD 5       | VIDEO CLIP 392                                   |   |
| <input type="checkbox"/> STA LOC            | <input checked="" type="checkbox"/> VIDEO START<br><input checked="" type="checkbox"/> WATER COLUMN   | HH MM SS LOCAL<br>164108 | DPH, m<br>31 | 42 deg 18.496 min<br>(nav file corr 18.4949 min) | -70 deg 18.360 min<br>(nav file corr 18.3597 min) |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO START<br><input checked="" type="checkbox"/> ON SEABED<br><input type="checkbox"/> SMPL ATTEMPT                      | HH MM SS LOCAL<br>164210 | DPH, m       | 42 deg min<br>(nav file corr 18.5088 min)        | -70 deg min<br>(nav file corr 18.3641 min)        |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> SAMPLE ATTEMPT   | HH MM SS LOCAL           | DPH, m       | 42 deg min<br>(nav file corr min)                | -70 deg min<br>(nav file corr min)                |
| <input checked="" type="checkbox"/> STA LOC | <input checked="" type="checkbox"/> SMPL ATTEMPT<br><input checked="" type="checkbox"/> VIDEO END<br><input checked="" type="checkbox"/> OFF SEABED | HH MM SS LOCAL<br>164720 | DPH, m       | 42 deg 18.567 min<br>(nav file corr 18.5662 min) | -70 deg 18.381 min<br>(nav file corr 18.3803 min) |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO END  | HH MM SS LOCAL           | DPH, m       | 42 deg min<br>(nav file corr min)                | -70 deg min<br>(nav file corr min)                |

UTC = EDT + 4 HRS, EST + 5 HRS

STATION DATE AND TIME, UTC

DDG : HH : MM : SS  
256 20 47 20

☒ NO SEDIMENT SAMPLE: ☐ pre-tripped; ☐ no smpl attempted; ☐ jaws partly open; ☐ washout; ☐ refusal;  
☐ too gravelly/shelly; ☐ smpl too small; ☒ grvl in jaws;

DPH TO SED SURF IN GRAB, cm

SED VOL IN GRAB, liters

RIGHT

LEFT

RT + LFT =

## SAMPLES / DATA COLLECTED

☐ SEDIMENT ☒ CTD CAST ☒ GPS NAV FILE  
☐ SAND LANCE ☐ INVERTS ☐ GRAB STILL  
☒ VERT. / ☐ HORIZ PLNK. TOW ☐ NO INVERTS PRESENT

|   |  |                   |  |
|---|--|-------------------|--|
| att epifauna                                    | herring eggs                                 | skate             | SEABED DESCRIPTION   |
| Boltonia tunic.                                 | lobster                                      | Suberites spg     | storm sand ripples <input checked="" type="checkbox"/> Y, <input type="checkbox"/> N                           |
| brachiopod                                      | monkfish                                     | squid             | crests: <input checked="" type="checkbox"/> sharp <input type="checkbox"/> rounded                             |
| bushy bry/hyd                                   | moon snail                                   | Calc algae        | <input checked="" type="checkbox"/> straight <input type="checkbox"/> multi-rippled                            |
| <input checked="" type="checkbox"/> cancer crab | mussels                                      | tunicate, B pilu. | gvl in ripple troughs <input checked="" type="checkbox"/> Y, <input checked="" type="checkbox"/> N             |
| ceri burr anem                                  | ocean pout                                   | yellow encr. spg  | small ripples, [ <input type="checkbox"/> intermittent] <input type="checkbox"/> Y, <input type="checkbox"/> N |
| cod; cod juvenile                               |  |                   | sand, unrippled <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| ctenophores                                     | Polymastia spg                               |                   | sand partial veneer on gravel <input checked="" type="checkbox"/> Y, <input type="checkbox"/> N                |
| coralline algae                                 | red encr. spg                                |                   | gravel pavement <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| cunner  | red hake                                     |                   | boulders <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| dk yellow spg                                   | sand dollars                                 |                   | mud <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| Didemnum cols                                   |  | shells/fragments  | trawled/dredged shell frags <input type="checkbox"/> Y, <input type="checkbox"/> N                             |
| dogfish   |  |                   | trawl/dredge marks <input type="checkbox"/> Y, <input type="checkbox"/> N                                      |
| <input checked="" type="checkbox"/> finger spg  | <input checked="" type="checkbox"/> scallops |                   | sand lance in water column <input type="checkbox"/> Y, <input type="checkbox"/> N                              |
| <input checked="" type="checkbox"/> flounder    | <input checked="" type="checkbox"/> sculpin  |                   | sand lance on/in substrate <input type="checkbox"/> Y, <input type="checkbox"/> N                              |
| haddock   | sea stars                                    |                   | sand lance in sed sample <input type="checkbox"/> Y, <input type="checkbox"/> N                                |
| herring   |  |                   | SL size: <input type="checkbox"/> sm <input type="checkbox"/> med <input type="checkbox"/> lg                  |
|   | silver hake                                  |                   | SL nos:  |

AREA OF VAN VEEN GRAB = 0.1 SQ M; MAX DEPTH = 15 CM; VOLUME = 10.8 LITERS

DISTANCE BETWEEN PARALLEL LASERS = 20 CM

PAGE VALENTINE USGS COASTAL AND MARINE GEOLOGY PROGRAM, WOODS HOLE, MA

USGS STATION 4712

SBNMS Site C14, CONSEC STA 38



|                                      |  |                                     |  |                        |  |   |  |  |  |
|--------------------------------------|--|-------------------------------------|--|------------------------|--|---|--|--|--|
| <b>CRUISE:</b> USGS AUK2017044       |  | <b>DAY OF MONTH LOCAL</b><br>SEP 13 |  | <b>JD LOCAL</b><br>257 |  | <input checked="" type="checkbox"/> DAY<br><input type="checkbox"/> NIGHT |  | <b>Sunset:</b> Sep 11, 2017<br>1900 EDT = 2300 UTC |  |
| <b>LOCATION:</b> STELLWAGEN BANK NMS |  | <b>DAY OF MONTH UTC</b><br>SEP 13   |  | <b>JD UTC</b><br>256   |  | <b>VIDEO FWD UPPER CAMERA</b> 1<br><b>VIDEO FWD LOWER CAMERA</b> 2        |  | <b>FILE</b> 039<br>1893                            |  |
| <b>MONTH YEAR:</b> SEPTEMBER 2017    |  |                                     |  |                        |  |   |  |  |  |
| <b>LOCAL TIME:</b> EDT               |  |                                     |  |                        |  |   |  |  |  |

  

|                      |  |                       |  |                           |  |               |  |                       |  |
|----------------------|--|-----------------------|--|---------------------------|--|---------------|--|-----------------------|--|
| <b>USGS STA</b> 4713 |  | <b>SBNMS SITE</b> C14 |  | <b>CONSECUTIVE STA</b> 39 |  | <b>QUAD</b> 5 |  | <b>VIDEO CLIP</b> 393 |  |
|----------------------|--|-----------------------|--|---------------------------|--|---------------|--|-----------------------|--|

  

|   |   |                          |              |  |   |
|---|---|--------------------------|--------------|--|---|
| <input type="checkbox"/> STA LOC            | <input checked="" type="checkbox"/> VIDEO START   | HH MM SS LOCAL<br>165458 | DPH, m<br>31 | 42 deg 18.424 min<br>(nav file corr 18.4225 min) | -70 deg 18.387 min<br>(nav file corr 18.3850 min) |
|   | <input checked="" type="checkbox"/> WATER COLUMN  |                          |              |  |   |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO START  | HH MM SS LOCAL<br>165552 | DPH, m       | 42 deg min                                       | -70 deg min                                       |
|   | <input checked="" type="checkbox"/> ON SEABED<br><input type="checkbox"/> SMPL ATTEMPT          |                          |              | (nav file corr 18.4337 min)                      | (nav file corr 18.3913 min)                       |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> SAMPLE ATTEMPT   | HH MM SS LOCAL           | DPH, m       | 42 deg min                                       | -70 deg min                                       |
|   |   |                          |              | (nav file corr min)                              | (nav file corr min)                               |
| <input checked="" type="checkbox"/> STA LOC | <input checked="" type="checkbox"/> SMPL ATTEMPT  | HH MM SS LOCAL<br>165856 | DPH, m       | 42 deg 18.466 min<br>(nav file corr 18.4764 min) | -70 deg 18.404 min<br>(nav file corr 18.4047 min) |
|   | <input checked="" type="checkbox"/> VIDEO END<br><input checked="" type="checkbox"/> OFF SEABED |                          |              |  |   |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO END  | HH MM SS LOCAL           | DPH, m       | 42 deg min                                       | -70 deg min                                       |
|   |   |                          |              | (nav file corr min)                              | (nav file corr min)                               |

  

UTC = EDT + 4 HRS, EST + 5 HRS      STATION DATE AND TIME, UTC      DDD : HH : MM : SS  
256 20 58 56

  

☐ **NO SEDIMENT SAMPLE:**   ☐ pre-tripped;   ☐ no smpl attempted;   ☐ jaws partly open;   ☐ washout;   ☐ refusal;  
☐ too gravelly/shelly;   ☐ smpl too small;   ☐ grvl in jaws;

  

|   |   |   |
|---|---|---|
| DPH TO SED SURF IN GRAB, cm<br>RIGHT 8.5   LEFT 6.5 | SED VOL IN GRAB, liters<br>RT 1.7 + LFT 2.5 = 4.2 | <b>SAMPLES / DATA COLLECTED</b>   |
| r-cgS/pub G   |   | <input checked="" type="checkbox"/> SEDIMENT <input checked="" type="checkbox"/> CTD CAST <input type="checkbox"/> GPS NAV FILE |
|   |   | <input type="checkbox"/> SAND LANCE <input checked="" type="checkbox"/> INVERTS <input checked="" type="checkbox"/> GRAB STILL  |
|   |   | <input type="checkbox"/> VERT. / <input type="checkbox"/> HORIZ PLNK. TOW <input type="checkbox"/> NO INVERTS PRESENT           |

  

|                   |                |                   | SEABED DESCRIPTION   |
|-------------------|----------------|-------------------|--|
| att epifauna      | herring eggs   | skate             | storm sand ripples <input checked="" type="checkbox"/> Y, <input type="checkbox"/> N                           |
| Boltenia tunic.   | lobster        | Suberites spg     | crests: <input checked="" type="checkbox"/> sharp <input type="checkbox"/> rounded                             |
| brachiopod        | monkfish       | squid             | <input checked="" type="checkbox"/> straight <input type="checkbox"/> multi-rippled                            |
| bushy bry/hyd     | moon snail     |                   | gvl in ripple troughs <input checked="" type="checkbox"/> Y, <input type="checkbox"/> N                        |
| cancer crab       | mussels        | tunicate, B pilu. | small ripples, [ <input type="checkbox"/> intermittent] <input type="checkbox"/> Y, <input type="checkbox"/> N |
| ceri burr anem    | ocean pout     | yellow encr. spg  | sand, unrippled <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| cod; cod juvenile |                |                   | sand partial veneer on gravel <input checked="" type="checkbox"/> Y, <input type="checkbox"/> N                |
| ctenophores       | Polymastia spg |                   | gravel pavement <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| coralline algae   | red encr. spg  |                   | boulders <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| cunner            | red hake       |                   | mud <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| dk yellow spg     | sand dollars   |                   | trawled/dredged shell frags <input type="checkbox"/> Y, <input type="checkbox"/> N                             |
| Didemnum cols     |                | shells/fragments  | trawl/dredge marks <input type="checkbox"/> Y, <input type="checkbox"/> N                                      |
| dogfish           |                |                   | sand lance in water column <input type="checkbox"/> Y, <input type="checkbox"/> N                              |
| finger spg        | scallops       |                   | sand lance on/in substrate <input type="checkbox"/> Y, <input type="checkbox"/> N                              |
| flounder          | sculpin        |                   | sand lance in sed sample <input type="checkbox"/> Y, <input type="checkbox"/> N                                |
| haddock           | sea stars      |                   | SL size: <input type="checkbox"/> sml <input type="checkbox"/> med <input type="checkbox"/> lg                 |
| herring           |                |                   | SL nos:  |
|                   | silver hake    |                   |  |

AREA OF VAN VEEN GRAB = 0.1 SQ M; MAX DEPTH = 15 CM; VOLUME = 10.8 LITERS

DISTANCE BETWEEN PARALLEL LASERS = 20 CM

PAGE VALENTINE, USGS COASTAL AND MARINE GEOLOGY PROGRAM, WOODS HOLE, MA

USGS STATION 4713

SBNMS Site C14, CONSEC STA 39

|   |  |                          |                    |  |   |
|---|--|--------------------------|--------------------|--|---|
| CRUISE: USGS AUK2017044                     |  | DAY OF MONTH LOCAL       | JD LOCAL           | <input checked="" type="checkbox"/> DAY          | Sunset: Sep 11, 2017<br>1900 EDT = 2300 UTC       |
| LOCATION: STELLWAGEN BANK NMS               |  | SEP 13                   | 256                | <input type="checkbox"/> NIGHT                   |   |
| MONTH YEAR: SEPTEMBER 2017                  |  | DAY OF MONTH UTC         | JD UTC             | VIDEO FWD  | FILE 040  |
| LOCAL TIME: EDT                             |  | SEP 13                   | 256                | UPPER CAMERA                                     | FILE 1894   |
| USGS STA 4714                               |  | SBNMS SITE C13           | CONSECUTIVE STA 40 | QUAD 5   | VIDEO CLIP 394                                    |
| <input type="checkbox"/> STA LOC            | <input checked="" type="checkbox"/> VIDEO START<br><input checked="" type="checkbox"/> WATER COLUMN                                      | HH MM SS LOCAL<br>171524 | DPH, m<br>34       | 42 deg 17.577 min<br>(nav file corr 17.5762 min) | -70 deg 18.322 min<br>(nav file corr 18.3185 min) |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO START<br><input checked="" type="checkbox"/> ON SEABED<br><input type="checkbox"/> SMPL ATTEMPT           | HH MM SS LOCAL<br>171636 | DPH, m             | 42 deg min<br>(nav file corr 17.5903 min)        | -70 deg min<br>(nav file corr 18.3326 min)        |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> SAMPLE ATTEMPT  | HH MM SS LOCAL           | DPH, m             | 42 deg min<br>(nav file corr min)                | -70 deg min<br>(nav file corr min)                |
| <input checked="" type="checkbox"/> STA LOC | <input checked="" type="checkbox"/> SMPL ATTEMPT<br><input checked="" type="checkbox"/> VIDEO END<br><input type="checkbox"/> OFF SEABED | HH MM SS LOCAL<br>172342 | DPH, m             | 42 deg 17.670 min<br>(nav file corr 17.6686 min) | -70 deg 18.390 min<br>(nav file corr 18.3890 min) |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO END   | HH MM SS LOCAL           | DPH, m             | 42 deg min<br>(nav file corr min)                | -70 deg min<br>(nav file corr min)                |

UTC = EDT + 4 HRS, EST + 5 HRS

STATION DATE AND TIME, UTC

DDD : HH : MM : SS

256 21 23 42

☒ NO SEDIMENT SAMPLE: ☐ pre-tripped; ☐ no smpl attempted; ☐ jaws partly open; ☐ washout; ☐ refusal;  
☐ too gravelly/shelly; ☐ smpl too small; ☒ grvl in jaws; 206610

DPH TO SED SURF IN GRAB, cm

SED VOL IN GRAB, liters

SAMPLES / DATA COLLECTED

RIGHT \_\_\_\_\_

LEFT \_\_\_\_\_

RT \_\_\_\_\_ + LFT \_\_\_\_\_ = \_\_\_\_\_

☐ SEDIMENT☒ CTD CAST☒ GPS NAV FILE☐ SAND LANCE☐ INVERTS☐ GRAB STILL☒ VERT. / ☐ HORIZ PLNK. TOW☐ NO INVERTS PRESENT

3ml r-cgs → n-cgs / 1.6 (smpl)

|   |  |                   | SEABED DESCRIPTION  |
|---|--|-------------------|---|
| att epifauna                                    | herring eggs                                     | skate             | storm sand ripples <input type="checkbox"/> Y, <input checked="" type="checkbox"/> N                                      |
| Boltenia tunic.                                 | lobster  | Suberites spg     | crests: <input type="checkbox"/> sharp <input type="checkbox"/> rounded   |
| brachiopod                                      | monkfish   | squid             | <input type="checkbox"/> straight <input type="checkbox"/> multi-rippled  |
| bushy bry/hyd                                   | moon snail                                       |                   | gvl in ripple troughs <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| <input checked="" type="checkbox"/> cancer crab | mussels  | tunicate, B pilu. | small ripples, [ <input type="checkbox"/> intermittent] <input checked="" type="checkbox"/> Y, <input type="checkbox"/> N |
| ceri burr anem                                  | ocean pout                                       | yellow encr. spg  | sand, unrippled <input checked="" type="checkbox"/> Y, <input type="checkbox"/> N   |
| cod; cod juvenile                               |  |                   | sand partial veneer on gravel <input type="checkbox"/> Y, <input type="checkbox"/> N                                      |
| ctenophores                                     | Polymastia spg                                   |                   | gravel pavement <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| coralline algae                                 | red encr. spg                                    |                   | boulders <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| cunner  | red hake   |                   | mud <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| dk yellow spg                                   | <input checked="" type="checkbox"/> sand dollars |                   | trawled/dredged shell frags <input checked="" type="checkbox"/> Y, <input type="checkbox"/> N                             |
| Didemnum cols                                   |  | shells/fragments  | trawl/dredge marks <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| dogfish   |  |                   | sand lance in water column <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| <input checked="" type="checkbox"/> finger spg  | <input checked="" type="checkbox"/> scallops     |                   | sand lance on/in substrate <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| <input checked="" type="checkbox"/> flounder    | <input checked="" type="checkbox"/> sculpin      |                   | sand lance in sed sample <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| haddock   | sea stars  |                   | SL size: <input type="checkbox"/> sml <input type="checkbox"/> med <input type="checkbox"/> lg                            |
| herring   |  |                   | SL nos:   |
|   | silver hake                                      |                   |   |

AREA OF VAN VEEN GRAB = 0.1 SQ M, MAX DEPTH = 15 CM, VOLUME = 10.8 LITERS

DISTANCE BETWEEN PARALLEL LASERS = 20 CM

PAGE VALENTINE. USGS COASTAL AND MARINE GEOLOGY PROGRAM, WOODS HOLE, MA

USGS STATION

4714

SBNMS Site

C13

CONSEC STA

40

|   |   |                            |              |  |   |
|---|---|----------------------------|--------------|--|---|
| CRUISE: USGS AUK2017044                     |   | DAY OF MONTH LOCAL         | JD LOCAL     | <input checked="" type="checkbox"/> DAY          | Sunset: Sep 11, 2017<br>1900 EDT = 2300 UTC       |
| LOCATION: STELLWAGEN BANK NMS               |   | SEP 13                     | 256          | <input type="checkbox"/> NIGHT                   |   |
| MONTH YEAR: SEPTEMBER 2017                  |   | DAY OF MONTH UTC           | JD UTC       | VIDEO FWD  | FILE  |
| LOCAL TIME: EDT                             |   | SEP 13                     | 256          | UPPER-CAMERA 1                                   | 041   |
|   |   |                            |              | VIDEO FWD  | FILE  |
|   |   |                            |              | LOWER-CAMERA 2                                   | 1895  |
| USGS STA                                    | 4715  | SBNMS SITE                 | C13          | CONSECUTIVE STA                                  | 41  |
|   |   |                            |              | QUAD   | 5   |
|   |   |                            |              | VIDEO CLIP                                       | 394   |
| <input type="checkbox"/> STA LOC            | <input checked="" type="checkbox"/> VIDEO START<br><input checked="" type="checkbox"/> WATER COLUMN   | HH MM SS LOCAL<br>173126   | DPH, m<br>33 | 42 deg 17.550 min<br>(nav file corr 17.5485 min) | -70 deg 18.285 min<br>(nav file corr 18.2835 min) |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO START<br><input checked="" type="checkbox"/> ON SEABED<br><input type="checkbox"/> SMPL ATTEMPT                      | HH MM SS LOCAL<br>173216   | DPH, m       | 42 deg min<br>(nav file corr 17.5631 min)        | -70 deg min<br>(nav file corr 18.2905 min)        |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> SAMPLE ATTEMPT   | HH MM SS LOCAL             | DPH, m       | 42 deg min<br>(nav file corr min)                | -70 deg min<br>(nav file corr min)                |
| <input checked="" type="checkbox"/> STA LOC | <input checked="" type="checkbox"/> SMPL ATTEMPT<br><input checked="" type="checkbox"/> VIDEO END<br><input checked="" type="checkbox"/> OFF SEABED | HH MM SS LOCAL<br>173450   | DPH, m       | 42 deg 17.596 min<br>(nav file corr 17.5953 min) | -70 deg 18.304 min<br>(nav file corr 18.3035 min) |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO END  | HH MM SS LOCAL             | DPH, m       | 42 deg min<br>(nav file corr min)                | -70 deg min<br>(nav file corr min)                |
| UTC = EDT + 4 HRS, EST + 5 HRS              |   | STATION DATE AND TIME, UTC |              | DDD : HH : MM : SS<br>256 213450                 |   |

|  |         |                         |   |   |  |
|--|---------|-------------------------|---|---|--|
| <input type="checkbox"/> NO SEDIMENT SAMPLE: <input type="checkbox"/> pre-tripped; <input type="checkbox"/> no smpl attempted; <input type="checkbox"/> jaws partly open; <input type="checkbox"/> washout; <input type="checkbox"/> refusal;<br><input type="checkbox"/> too gravelly/shelly; <input type="checkbox"/> smpl too small; <input type="checkbox"/> grvl in jaws; |         |                         |   |   |  |
| DPH TO SED SURF IN GRAB, cm  |         | SED VOL IN GRAB, liters |   | SAMPLES / DATA COLLECTED  |  |
| RIGHT 11   | LEFT 11 | RT 0.8                  | +LFT 0.8 = 1.6  | <input checked="" type="checkbox"/> SEDIMENT                    | <input checked="" type="checkbox"/> CTD CAST     |
| cgs/pub G → gvl pment<br>sampled surf. sand only   |         |                         |   | <input type="checkbox"/> SAND LANCE                             | <input checked="" type="checkbox"/> GPS NAV FILE |
|  |         |                         |   | <input type="checkbox"/> VERT. / <input type="checkbox"/> HORIZ | <input checked="" type="checkbox"/> GRAB STILL   |
|  |         |                         |   | <input type="checkbox"/> PLNK. TOW                              | <input type="checkbox"/> NO INVERTS PRESENT      |
| att epifauna<br>Boltenia tunic.<br>brachiopod<br>bushy bry/hyd<br>cancer crab<br>ceri burr anem<br>cod; cod juvenile<br>ctenophores<br>coralline algae<br>cunner<br>dk yellow spg<br>Didemnum cols<br>dogfish<br>finger spg<br>flounder<br>haddock<br>herring  |         |                         | herring eggs<br>lobster<br>monkfish<br>moon snail<br>mussels<br>ocean pout<br>Polymastia spg<br>red encr. spg<br>red hake<br>sand dollars<br>shells/fragments<br>scallops<br>sculpin<br>sea stars<br>silver hake  |   |  |
| skate<br>Suberites spg<br>squid<br>tunicate, B pilu.<br>yellow encr. spg   |         |                         | SEABED DESCRIPTION<br>storm sand ripples <input type="checkbox"/> Y, <input checked="" type="checkbox"/> N<br>crests: <input type="checkbox"/> sharp <input type="checkbox"/> rounded<br><input type="checkbox"/> straight <input type="checkbox"/> multi-rippled<br>gvl in ripple troughs <input type="checkbox"/> Y, <input type="checkbox"/> N<br>small ripples, [ <input type="checkbox"/> intermittent] <input type="checkbox"/> Y, <input type="checkbox"/> N<br>sand, unrippled <input type="checkbox"/> Y, <input type="checkbox"/> N<br>sand partial veneer on gravel <input checked="" type="checkbox"/> Y, <input type="checkbox"/> N<br>gravel pavement <input checked="" type="checkbox"/> Y, <input type="checkbox"/> N<br>boulders <input type="checkbox"/> Y, <input type="checkbox"/> N<br>mud <input type="checkbox"/> Y, <input type="checkbox"/> N<br>trawled/dredged shell frags <input type="checkbox"/> Y, <input type="checkbox"/> N<br>trawl/dredge marks <input type="checkbox"/> Y, <input type="checkbox"/> N<br>sand lance in water column <input type="checkbox"/> Y, <input type="checkbox"/> N<br>sand lance on/in substrate <input type="checkbox"/> Y, <input type="checkbox"/> N<br>sand lance in sed sample <input type="checkbox"/> Y, <input type="checkbox"/> N<br>SL size: <input type="checkbox"/> sml <input type="checkbox"/> med <input type="checkbox"/> lg<br>SL nos: |   |  |

AREA OF VAN VEEN GRAB = 0.1 SQ M; MAX DEPTH = 15 CM; VOLUME = 10.8 LITERS

DISTANCE BETWEEN PARALLEL LASERS = 20 CM

PAGE VALENTINE, USGS COASTAL AND MARINE GEOLOGY PROGRAM, WOODS HOLE, MA

USGS STATION 4715

SBNMS Site C13, CONSEC STA 41



|   |  |                          |              |  |   |
|---|--|--------------------------|--------------|--|---|
| CRUISE: USGS AUK2017044                     |  | DAY OF MONTH LOCAL       | JD LOCAL     | <input checked="" type="checkbox"/> DAY          | Sunset: Sep 11, 2017<br>1900 EDT = 2300 UTC       |
| LOCATION: STELLWAGEN BANK NMS               |  | SEP 13                   | 256          | <input type="checkbox"/> NIGHT                   |   |
| MONTH YEAR: SEPTEMBER 2017                  |  | DAY OF MONTH UTC         | JD UTC       | VIDEO FWD  | FILE  |
| LOCAL TIME: EDT                             |  | SEP 13                   | 256          | UPPER CAMERA 1                                   | 042   |
|   |  |                          |              | VIDEO FWD  | FILE  |
|   |  |                          |              | LOWER CAMERA 2                                   | 1896  |
| USGS STA                                    | 4716   | SBNMS SITE               | C2           | CONSECUTIVE STA                                  | 42  |
|   |  |                          |              | QUAD   | 5   |
|   |  |                          |              | VIDEO CLIP                                       | 395   |
| <input type="checkbox"/> STA LOC            | <input checked="" type="checkbox"/> VIDEO START<br><input checked="" type="checkbox"/> WATER COLUMN                                      | HH MM SS LOCAL<br>174858 | DPH, m<br>34 | 42 deg 17.599 min<br>(nav file corr 17.5979 min) | -70 deg 16.773 min<br>(nav file corr 16.7738 min) |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO START<br><input checked="" type="checkbox"/> ON SEABED<br><input type="checkbox"/> SMPL ATTEMPT           | HH MM SS LOCAL<br>175022 | DPH, m       | 42 deg min<br>(nav file corr 17.6142 min)        | -70 deg min<br>(nav file corr 16.7701 min)        |
| <input checked="" type="checkbox"/> STA LOC | <input checked="" type="checkbox"/> SAMPLE ATTEMPT   | HH MM SS LOCAL<br>175052 | DPH, m       | 42 deg 17.622 min<br>(nav file corr 17.6209 min) | -70 deg 16.768 min<br>(nav file corr 16.7689 min) |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> SMPL ATTEMPT<br><input checked="" type="checkbox"/> VIDEO END<br><input checked="" type="checkbox"/> OFF SEABED | HH MM SS LOCAL<br>175540 | DPH, m       | 42 deg 17.679 min<br>(nav file corr 17.6785 min) | -70 deg 16.741 min<br>(nav file corr 16.7420 min) |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO END   | HH MM SS LOCAL           | DPH, m       | 42 deg min<br>(nav file corr min)                | -70 deg min<br>(nav file corr min)                |

UTC = EDT + 4 HRS, EST + 5 HRS

STATION DATE AND TIME, UTC

DDD : HH : MM : SS

256 2 150 52

☐ NO SEDIMENT SAMPLE: ☐ pre-tripped; ☐ no smpl attempted; ☐ jaws partly open; ☐ washout; ☐ refusal;  
☐ too gravelly/shelly; ☐ smpl too small; ☐ grvl in jaws;

DPH TO SED SURF IN GRAB, cm

RIGHT 4.5 LEFT 4

SED VOL IN GRAB, liters

RT 3.4 + LFT 3.6 = 7.0

## SAMPLES / DATA COLLECTED

☒ SEDIMENT ☒ CTD CAST ☒ GPS NAV FILE  
☐ SAND LANCE ☒ INVERTS ☐ GRAB STILL  
☒ VERT. / ☐ HORIZ PLNK. TOW ☐ NO INVERTS PRESENT

|   |                                     |                |                   | SEABED DESCRIPTION  |
|---|-------------------------------------|----------------|-------------------|---|
| att epifauna                                    |                                     | herring eggs   | skate             |   |
| Boltonia tunic.                                 |                                     | lobster        | Suberites spg     | storm sand ripples <i>few</i> <input checked="" type="checkbox"/> Y, <input type="checkbox"/> N                           |
| brachiopod                                      |                                     | monkfish       | squid             | crests: <input type="checkbox"/> sharp <input checked="" type="checkbox"/> rounded  |
| bushy bry/hyd                                   |                                     | moon snail     |                   | <input type="checkbox"/> straight <input type="checkbox"/> multi-rippled  |
| <input checked="" type="checkbox"/> cancer crab |                                     | mussels        | tunicate, B pilu. | gvl in ripple troughs <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| ceri burr anem                                  |                                     | ocean pout     | yellow encr. spg  | small ripples, [ <input type="checkbox"/> intermittent] <input checked="" type="checkbox"/> Y, <input type="checkbox"/> N |
| cod; cod juvenile                               |                                     |                |                   | sand, unrippled <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| ctenophores                                     |                                     | Polymastia spg |                   | sand partial veneer on gravel <input type="checkbox"/> Y, <input type="checkbox"/> N                                      |
| coralline algae                                 |                                     | red encr. spg  |                   | gravel pavement <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| cunner  |                                     | red hake       |                   | boulders <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| dk yellow spg                                   | <input checked="" type="checkbox"/> | sand dollars   |                   | mud <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| Didemnum cols                                   |                                     |                | shells/fragments  | trawled/dredged shell frags <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| dogfish   |                                     |                |                   | trawl/dredge marks <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| finger spg                                      |                                     | scallops       |                   | sand lance in water column <input type="checkbox"/> Y, <input checked="" type="checkbox"/> N                              |
| flounder  | <input checked="" type="checkbox"/> | sculpin        |                   | sand lance on/in substrate <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| haddock   |                                     | sea stars      |                   | sand lance in sed sample <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| herring   |                                     |                |                   | SL size: <input type="checkbox"/> sml <input type="checkbox"/> med <input type="checkbox"/> lg                            |
|   |                                     | silver hake    |                   | SL nos:   |

AREA OF VAN VEEN GRAB = 0.1 SQ M, MAX DEPTH = 15 CM, VOLUME = 10.8 LITERS

DISTANCE BETWEEN PARALLEL LASERS = 20 CM

PAGE VALENTINE USGS COASTAL AND MARINE GEOLOGY PROGRAM, WOODS HOLE, MA

USGS STATION

4716

SBNMS Site

C2

CONSEC STA

42

|   |   |                              |                 |   |  |
|---|---|------------------------------|-----------------|---|--|
| CRUISE: USGS AUK2017044                     |   | DAY OF MONTH LOCAL<br>SEP 14 | JD LOCAL<br>257 | <input checked="" type="checkbox"/> DAY<br><input type="checkbox"/> NIGHT | Sunset: Sep 11, 2017<br>1900 EDT = 2300 UTC                            |
| LOCATION: STELLWAGEN BANK NMS               |   | DAY OF MONTH UTC<br>SEP 14   | JD UTC<br>257   | VIDEO FWD<br>UPPER CAMERA 1   | FILE 043   |
| MONTH YEAR: SEPTEMBER 2017                  |   |                              |                 | VIDEO FWD<br>LOWER CAMERA 2   | FILE 1897  |
| LOCAL TIME: EDT                             |   |                              |                 |   |  |
| USGS STA 4717                               | SBNMS SITE C12  | CONSECUTIVE STA 43           | QUAD 5          | VIDEO CLIP 397  |  |
| <input type="checkbox"/> STA LOC            | <input checked="" type="checkbox"/> VIDEO START<br><input checked="" type="checkbox"/> WATER COLUMN   | HH MM SS LOCAL<br>100052     | DPH, m<br>33    | 42 deg 16.433 min<br>(nav file corr 16.4315 min)                          | -70 deg 18.066 min<br>(nav file corr 18.0714 min)                      |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO START<br><input checked="" type="checkbox"/> ON SEABED<br><input type="checkbox"/> SMPL ATTEMPT                      | HH MM SS LOCAL<br>100206     | DPH, m          | 42 deg min  | -70 deg min<br>(nav file corr 16.4414 min) (nav file corr 18.0444 min) |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> SAMPLE ATTEMPT   | HH MM SS LOCAL               | DPH, m          | 42 deg min<br>(nav file corr min)   | -70 deg min<br>(nav file corr min)                                     |
| <input checked="" type="checkbox"/> STA LOC | <input checked="" type="checkbox"/> SMPL ATTEMPT<br><input checked="" type="checkbox"/> VIDEO END<br><input checked="" type="checkbox"/> OFF SEABED | HH MM SS LOCAL<br>100752     | DPH, m          | 42 deg 16.487 min<br>(nav file corr 16.4871 min)                          | -70 deg 17.924 min<br>(nav file corr 17.9265 min)                      |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO END  | HH MM SS LOCAL               | DPH, m          | 42 deg min<br>(nav file corr min)   | -70 deg min<br>(nav file corr min)                                     |
| UTC = EDT + 4 HRS, EST + 5 HRS              |   | STATION DATE AND TIME, UTC   |                 | DDD : HH : MM : SS<br>257 14 07 52  |  |

|  |  |  |  |                          |  |
|--|--|--|--|--------------------------|--|
| <input checked="" type="checkbox"/> NO SEDIMENT SAMPLE: <input type="checkbox"/> pre-tripped; <input type="checkbox"/> no smpl attempted; <input type="checkbox"/> jaws partly open; <input type="checkbox"/> washout; <input type="checkbox"/> refusal;<br><input type="checkbox"/> too gravelly/shelly; <input type="checkbox"/> smpl too small; <input checked="" type="checkbox"/> grvl in jaws; |  |  |  |                          |  |
| DPH TO SED SURF IN GRAB, cm  |  | SED VOL IN GRAB, liters                              |  | SAMPLES / DATA COLLECTED |  |
| RIGHT  | LEFT   | RT   | +LFT   | =                        | <input type="checkbox"/> SEDIMENT <input checked="" type="checkbox"/> CTD CAST <input checked="" type="checkbox"/> GPS NAV FILE<br><input type="checkbox"/> SAND LANCE <input type="checkbox"/> INVERTS <input type="checkbox"/> GRAB STILLs<br><input checked="" type="checkbox"/> VERT. / <input type="checkbox"/> HORIZ PLNK. TOW <input type="checkbox"/> NO INVERTS PRESENT |
|  |  |  |  |                          |  |
| att epifauna   | herring eggs                                     | skate  | SEABED DESCRIPTION   |                          |  |
| Boltonia tunic.  | lobster  | Suberites spg  | storm sand ripples <input type="checkbox"/> Y, <input checked="" type="checkbox"/> N                           |                          |  |
| brachiopod   | monkfish   | squid  | crests: <input type="checkbox"/> sharp <input type="checkbox"/> rounded  |                          |  |
| bushy bry/hyd  | moon snail                                       |  | <input type="checkbox"/> straight <input type="checkbox"/> multi-rippled                                       |                          |  |
| <input checked="" type="checkbox"/> cancer crab  | mussels  | tunicate, B pilu.                                    | gvl in ripple troughs <input type="checkbox"/> Y, <input type="checkbox"/> N                                   |                          |  |
| ceri burr anem   | ocean pout                                       | yellow encr. spg                                     | small ripples, [ <input type="checkbox"/> intermittent] <input type="checkbox"/> Y, <input type="checkbox"/> N |                          |  |
| cod; cod juvenile  |  |  | sand, unrippled <input checked="" type="checkbox"/> Y, <input type="checkbox"/> N                              |                          |  |
| ctenophores  | Polymastia spg                                   |  | sand partial veneer on gravel <input type="checkbox"/> Y, <input type="checkbox"/> N                           |                          |  |
| coralline algae  | red encr. spg                                    |  | gravel pavement <input type="checkbox"/> Y, <input type="checkbox"/> N   |                          |  |
| cunner   | red hake   |  | boulders <input type="checkbox"/> Y, <input type="checkbox"/> N  |                          |  |
| dk yellow spg  | <input checked="" type="checkbox"/> sand dollars |  | mud <input type="checkbox"/> Y, <input type="checkbox"/> N   |                          |  |
| Didemnum cols  |  | <input checked="" type="checkbox"/> shells/fragments | trawled/dredged shell frags <input checked="" type="checkbox"/> Y, <input type="checkbox"/> N                  |                          |  |
| dogfish  |  |  | trawl/dredge marks <input type="checkbox"/> Y, <input type="checkbox"/> N                                      |                          |  |
| finger spg   | scallops   |  | sand lance in water column <input type="checkbox"/> Y, <input type="checkbox"/> N                              |                          |  |
| <input checked="" type="checkbox"/> flounder   | <input checked="" type="checkbox"/> sculpin      |  | sand lance on/in substrate <input type="checkbox"/> Y, <input type="checkbox"/> N                              |                          |  |
| haddock  | sea stars  |  | sand lance in sed sample <input type="checkbox"/> Y, <input type="checkbox"/> N                                |                          |  |
| herring  |  |  | SL size: <input type="checkbox"/> sml <input type="checkbox"/> med <input type="checkbox"/> lg                 |                          |  |
|  | silver hake                                      |  | SL nos:  |                          |  |

AREA OF VAN VEEN GRAB = 0.1 SQ M. MAX DEPTH = 15 CM; VOLUME = 10.8 LITERS

DISTANCE BETWEEN PARALLEL LASERS = 20 CM

PAGE VALENTINE, USGS COASTAL AND MARINE GEOLOGY PROGRAM, WOODS HOLE, MA

USGS STATION 4717

SBNMS Site C12, CONSEC STA 43

|                               |  |                              |                 |   |   |
|-------------------------------|--|------------------------------|-----------------|---|---|
| CRUISE: USGS AUK2017044       |  | DAY OF MONTH LOCAL<br>SEP 14 | JD LOCAL<br>257 | <input checked="" type="checkbox"/> DAY<br><input type="checkbox"/> NIGHT | Sunset: Sep 11, 2017<br>1900 EDT = 2300 UTC |
| LOCATION: STELLWAGEN BANK NMS |  | DAY OF MONTH UTC<br>SEP 14   | JD UTC<br>257   | VIDEO FWD<br>UPPER CAMERA 1   | FILE 044                                    |
| MONTH YEAR: SEPTEMBER 2017    |  |                              |                 | VIDEO FWD<br>LOWER CAMERA 2   | FILE 1898                                   |
| LOCAL TIME: EDT               |  |                              |                 |   |   |

  

|               |                |                    |        |                |
|---------------|----------------|--------------------|--------|----------------|
| USGS STA 4718 | SBNMS SITE C12 | CONSECUTIVE STA 44 | QUAD 5 | VIDEO CLIP 398 |
|---------------|----------------|--------------------|--------|----------------|

  

|   |  |                          |              |                             |                             |
|---|--|--------------------------|--------------|-----------------------------|-----------------------------|
| <input type="checkbox"/> STA LOC            | <input checked="" type="checkbox"/> VIDEO START  | HH MM SS LOCAL<br>101710 | DPH, m<br>35 | 42 deg 16.491 min           | -70 deg 18.237 min          |
|   | <input checked="" type="checkbox"/> WATER COLUMN |                          |              | (nav file corr 16.4899 min) | (nav file corr 18.2428 min) |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO START             | HH MM SS LOCAL<br>101824 | DPH, m       | 42 deg min                  | -70 deg min                 |
|   | <input checked="" type="checkbox"/> ON SEABED    |                          |              | (nav file corr 16.5024 min) | (nav file corr 18.2052 min) |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> SMPL ATTEMPT            | HH MM SS LOCAL           | DPH, m       | 42 deg min                  | -70 deg min                 |
|   |  |                          |              | (nav file corr min)         | (nav file corr min)         |
| <input checked="" type="checkbox"/> STA LOC | <input checked="" type="checkbox"/> SMPL ATTEMPT | HH MM SS LOCAL<br>101912 | DPH, m       | 42 deg 16.510 min           | -70 deg 18.182 min          |
|   | <input checked="" type="checkbox"/> VIDEO END    |                          |              | (nav file corr 16.5091 min) | (nav file corr 18.1853 min) |
| <input type="checkbox"/> STA LOC            | <input checked="" type="checkbox"/> OFF SEABED   |                          |              |                             |                             |
|   |  |                          |              |                             |                             |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO END               | HH MM SS LOCAL           | DPH, m       | 42 deg min                  | -70 deg min                 |
|   |  |                          |              | (nav file corr min)         | (nav file corr min)         |

  

UTC = EDT + 4 HRS, EST + 5 HRS      STATION DATE AND TIME, UTC      DDD : HH : MM : SS  
257 141912

  

☐ NO SEDIMENT SAMPLE:    ☐ pre-tripped;    ☐ no smpl attempted;    ☐ jaws partly open;    ☐ washout;    ☐ refusal;  
☐ too gravelly/shelly;    ☐ smpl too small;    ☐ grvl in jaws;

  

|  |   |   |
|--|---|---|
| DPH TO SED SURF IN GRAB, cm<br>RIGHT 10.5    LEFT 12 | SED VOL IN GRAB, liters<br>RT 1.0 + LFT 0.5 = 1.5 | <b>SAMPLES / DATA COLLECTED</b><br><input checked="" type="checkbox"/> SEDIMENT <input checked="" type="checkbox"/> CTD CAST <input checked="" type="checkbox"/> GPS NAV FILE<br><input type="checkbox"/> SAND LANCE <input checked="" type="checkbox"/> INVERTS <input checked="" type="checkbox"/> GRAB STILLs<br><input type="checkbox"/> VERT. / <input type="checkbox"/> HORIZ PLNK. TOW <input type="checkbox"/> NO INVERTS PRESENT |
| smpl smpl; mixed sand + pc grl                       |   |   |

  

|   |                |  |   |
|---|----------------|--|---|
| att epifauna  | herring eggs   | skate  | <b>SEABED DESCRIPTION</b><br>storm sand ripples <input type="checkbox"/> Y, <input checked="" type="checkbox"/> N<br>crests: <input type="checkbox"/> sharp <input type="checkbox"/> rounded<br><input type="checkbox"/> straight <input type="checkbox"/> multi-rippled<br>gvl in ripple troughs <input type="checkbox"/> Y, <input type="checkbox"/> N<br>small ripples, [ <input type="checkbox"/> intermittent] <input type="checkbox"/> Y, <input type="checkbox"/> N<br>sand, unrippled <input type="checkbox"/> Y, <input type="checkbox"/> N<br>sand partial veneer on gravel <input type="checkbox"/> Y, <input type="checkbox"/> N<br>gravel pavement <input type="checkbox"/> Y, <input type="checkbox"/> N<br>boulders <input type="checkbox"/> Y, <input type="checkbox"/> N<br>mud <input type="checkbox"/> Y, <input type="checkbox"/> N<br>trawled/dredged shell frags <input checked="" type="checkbox"/> Y, <input type="checkbox"/> N<br>trawl/dredge marks <input type="checkbox"/> Y, <input type="checkbox"/> N<br>sand lance in water column <input type="checkbox"/> Y, <input type="checkbox"/> N<br>sand lance on/in substrate <input type="checkbox"/> Y, <input type="checkbox"/> N<br>sand lance in sed sample <input type="checkbox"/> Y, <input type="checkbox"/> N<br>SL size: <input type="checkbox"/> sml <input type="checkbox"/> med <input type="checkbox"/> lg<br>SL nos: |
| <input checked="" type="checkbox"/> Boltenia tunic. | lobster        | Suberites spg  |   |
| <input type="checkbox"/> brachiopod                 | monkfish       | squid  |   |
| <input type="checkbox"/> bushy bry/hyd              | moon snail     |  |   |
| <input checked="" type="checkbox"/> cancer crab     | mussels        | tunicate, B pilu.                                    |   |
| <input type="checkbox"/> ceri burr anem             | ocean pout     | yellow encr. spg                                     |   |
| <input type="checkbox"/> cod; cod juvenile          |                |  |   |
| <input type="checkbox"/> ctenophores                | Polymastia spg |  |   |
| <input type="checkbox"/> coralline algae            | red encr. spg  |  |   |
| <input type="checkbox"/> cunner                     | red hake       |  |   |
| <input type="checkbox"/> dk yellow spg              | sand dollars   |  |   |
| <input type="checkbox"/> Didemnum cols              |                | <input checked="" type="checkbox"/> shells/fragments |   |
| <input type="checkbox"/> dogfish                    |                |  |   |
| <input type="checkbox"/> finger spg                 | scallops       |  |   |
| <input type="checkbox"/> flounder                   | sculpin        |  |   |
| <input type="checkbox"/> haddock                    | sea stars      |  |   |
| <input type="checkbox"/> herring                    |                |  |   |
|   | silver hake    |  |   |

AREA OF VAN VEEN GRAB = 0.1 SQ M; MAX DEPTH = 15 CM; VOLUME = 10.8 LITERS

DISTANCE BETWEEN PARALLEL LASERS = 20 CM

PAGE VALENTINE, USGS COASTAL AND MARINE GEOLOGY PROGRAM, WOODS HOLE, MA

USGS STATION 4718

SBNMS Site C12, CONSEC STA 44



|   |  |                    |          |   |   |
|---|--|--------------------|----------|---|---|
| CRUISE: USGS AUK2017044                     |  | DAY OF MONTH LOCAL | JD LOCAL | <input checked="" type="checkbox"/> DAY | Sunset: Sep 11, 2017<br>1900 EDT = 2300 UTC |
| LOCATION: STELLWAGEN BANK NMS               |  | SEP 14             | 257      | <input type="checkbox"/> NIGHT          |   |
| MONTH YEAR: SEPTEMBER 2017                  |  | DAY OF MONTH UTC   | JD UTC   | VIDEO FWD                               | FILE  |
| LOCAL TIME: EDT                             |  | SEP 14             | 257      | UPPER CAMERA 1                          | 045   |
|   |  |                    |          | VIDEO FWD                               | FILE  |
|   |  |                    |          | LOWER CAMERA 2                          | 1899  |
| USGS STA                                    | 4719   | SBNMS SITE         | C3       | CONSECUTIVE STA                         | 45  |
|   |  |                    |          | QUAD                                    | 5   |
|   |  |                    |          | VIDEO CLIP                              | 399   |
| <input type="checkbox"/> STA LOC            | <input checked="" type="checkbox"/> VIDEO START    | HH MM SS LOCAL     | DPH, m   | 42 deg                                  | 16.658 min                                  |
|   | <input checked="" type="checkbox"/> WATER COLUMN   | 103004             | 29       | (nav file corr                          | 16.6576 min)                                |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO START               | HH MM SS LOCAL     | DPH, m   | 42 deg                                  | min   |
|   | <input checked="" type="checkbox"/> ON SEABED      | 103112             |          | (nav file corr                          | 16.6653 min)                                |
|   | <input type="checkbox"/> SMPL ATTEMPT              |                    |          | (nav file corr                          | 16.9319 min)                                |
| <input checked="" type="checkbox"/> STA LOC | <input checked="" type="checkbox"/> SAMPLE ATTEMPT | HH MM SS LOCAL     | DPH, m   | 42 deg                                  | 16.670 min                                  |
|   |  | 103148             |          | (nav file corr                          | 16.6685 min)                                |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> SMPL ATTEMPT              | HH MM SS LOCAL     | DPH, m   | 42 deg                                  | 16.699 min                                  |
|   | <input checked="" type="checkbox"/> VIDEO END      | 103616             |          | (nav file corr                          | 16.6990 min)                                |
|   | <input checked="" type="checkbox"/> OFF SEABED     |                    |          | (nav file corr                          | 16.8232 min)                                |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO END                 | HH MM SS LOCAL     | DPH, m   | 42 deg                                  | min   |
|   |  |                    |          | (nav file corr                          | min)  |

UTC = EDT + 4 HRS, EST + 5 HRS

STATION DATE AND TIME, UTC

DDD : HH : MM : SS  
257 14 31 48

☐ NO SEDIMENT SAMPLE: ☐ pre-tripped; ☐ no smpl attempted; ☐ jaws partly open; ☐ washout; ☐ refusal;  
☐ too gravelly/shelly; ☐ smpl too small; ☐ grvl in jaws;

|                             |                         |  |
|-----------------------------|-------------------------|--|
| DPH TO SED SURF IN GRAB, cm | SED VOL IN GRAB, liters | SAMPLES / DATA COLLECTED   |
| RIGHT 3 LEFT 4              | RT 4.2 LFT 3.6 = 7.6    |  |
|                             |                         | <input checked="" type="checkbox"/> SEDIMENT <input checked="" type="checkbox"/> CTD CAST <input checked="" type="checkbox"/> GPS NAV FILE |
|                             |                         | <input type="checkbox"/> SAND LANCE <input type="checkbox"/> INVERTS <input checked="" type="checkbox"/> GRAB STILL                        |
|                             |                         | <input checked="" type="checkbox"/> VERT. / <input type="checkbox"/> HORIZ PLNK. TOW <input type="checkbox"/> NO INVERTS PRESENT           |

|                                     |                   |                                     |                | SEABED DESCRIPTION |
|-------------------------------------|-------------------|-------------------------------------|----------------|--------------------|
|                                     | att epifauna      |                                     | herring eggs   | skate              |
|                                     | Boletia tunic.    |                                     | lobster        | Suberites spg      |
|                                     | brachiopod        |                                     | monkfish       | squid              |
|                                     | bushy bry/hyd     |                                     | moon snail     |                    |
| <input checked="" type="checkbox"/> | cancer crab       |                                     | mussels        | tunicate, B pilu.  |
|                                     | ceri burr anem    |                                     | ocean pout     | yellow encr. spg   |
|                                     | cod; cod juvenile |                                     |                |                    |
|                                     | ctenophores       |                                     | Polymastia spg |                    |
|                                     | coralline algae   |                                     | red encr. spg  |                    |
|                                     | cunner            |                                     | red hake       |                    |
|                                     | dk yellow spg     | <input checked="" type="checkbox"/> | sand dollars   |                    |
|                                     | Didemnum cols     |                                     |                | shells/fragments   |
|                                     | dogfish           |                                     |                |                    |
|                                     | finger spg        |                                     | scallops       |                    |
| <input checked="" type="checkbox"/> | flounder          | <input checked="" type="checkbox"/> | sculpin        |                    |
|                                     | haddock           |                                     | sea stars      |                    |
|                                     | herring           |                                     |                |                    |
|                                     |                   |                                     | silver hake    |                    |

AREA OF VAN VEEN GRAB = 0.1 SQ M; MAX DEPTH = 15 CM; VOLUME = 10.8 LITERS  
DISTANCE BETWEEN PARALLEL LASERS = 20 CM

PAGE VALENTINE, USGS COASTAL AND MARINE GEOLOGY PROGRAM, WOODS HOLE, MA

USGS STATION 4719  
SBNMS Site C3, CONSEC STA 45

|                               |  |                    |          |   |   |
|-------------------------------|--|--------------------|----------|---|---|
| CRUISE: USGS AUK2017044       |  | DAY OF MONTH LOCAL | JD LOCAL | <input checked="" type="checkbox"/> DAY | Sunset: Sep 11, 2017<br>1900 EDT = 2300 UTC |
| LOCATION: STELLWAGEN BANK NMS |  | SEP 14             | 257      | <input type="checkbox"/> NIGHT          |   |
| MONTH YEAR: SEPTEMBER 2017    |  | DAY OF MONTH UTC   | JD UTC   | VIDEO FWD                               | FILE  |
| LOCAL TIME: EDT               |  | SEP 14             | 257      | <del>UPPER CAMERA 1</del>               | 046   |
|                               |  |                    |          | VIDEO FWD                               | FILE  |
|                               |  |                    |          | LOWER CAMERA 2                          | 1900  |

|               |               |                    |        |                |
|---------------|---------------|--------------------|--------|----------------|
| USGS STA 4720 | SBNMS SITE C4 | CONSECUTIVE STA 46 | QUAD 5 | VIDEO CLIP 400 |
|---------------|---------------|--------------------|--------|----------------|

|   |  |                |        |                             |                             |
|---|--|----------------|--------|-----------------------------|-----------------------------|
| <input type="checkbox"/> STA LOC            | <input checked="" type="checkbox"/> VIDEO START    | HH MM SS LOCAL | DPH, m | 42 deg 15.714 min           | -70 deg 16.555 min          |
|   | <input checked="" type="checkbox"/> WATER COLUMN   | 105154         | 28     | (nav file corr 15.7120 min) | (nav file corr 16.5615 min) |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO START               | HH MM SS LOCAL | DPH, m | 42 deg                      | -70 deg                     |
|   | <input checked="" type="checkbox"/> ON SEABED      | 105254         |        | (nav file corr 15.7272 min) | (nav file corr 16.5378 min) |
|   | <input type="checkbox"/> SMPL ATTEMPT              |                |        |                             |                             |
| <input type="checkbox"/> STA LOC            | <input checked="" type="checkbox"/> SAMPLE ATTEMPT | HH MM SS LOCAL | DPH, m | 42 deg 15.749 min           | -70 deg 16.490 min          |
|   |  | 105446         |        | (nav file corr 15.7476 min) | (nav file corr 16.4948 min) |
| <input checked="" type="checkbox"/> STA LOC | <input type="checkbox"/> SMPL ATTEMPT              | HH MM SS LOCAL | DPH, m | 42 deg 15.780 min           | -70 deg 16.437 min          |
|   | <input checked="" type="checkbox"/> VIDEO END      | 105804         |        | (nav file corr 15.7789 min) | (nav file corr 16.4413 min) |
|   | <input checked="" type="checkbox"/> OFF SEABED     |                |        |                             |                             |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO END                 | HH MM SS LOCAL | DPH, m | 42 deg                      | -70 deg                     |
|   |  |                |        | (nav file corr min)         | (nav file corr min)         |

UTC = EDT + 4 HRS, EST + 5 HRS

STATION DATE AND TIME, UTC

DDD : HH : MM : SS

257 14 54 46

☒ NO SEDIMENT SAMPLE: ☐ pre-tripped; ☐ no smpl attempted; ☐ jaws partly open; ☐ washout; ☐ refusal;  
☐ too gravelly/shelly; ☐ smpl too small; ☒ grvl in jaws;

DPH TO SED SURF IN GRAB, cm

SED VOL IN GRAB, liters

RIGHT

LEFT

RT + LFT =

## SAMPLES / DATA COLLECTED

☐ SEDIMENT ☒ CTD CAST ☒ GPS NAV FILE  
☐ SAND LANCE ☐ INVERTS ☐ GRAB STILLs  
☒ VERT. / ☐ HORIZ PLNK. TOW ☐ NO INVERTS PRESENT

|                                     | att epifauna      |                                     | herring eggs   |  | skate             | SEABED DESCRIPTION   |
|-------------------------------------|-------------------|-------------------------------------|----------------|--|-------------------|--|
|                                     | Boltenia tunic.   | <input checked="" type="checkbox"/> | lobster        |  | Suberites spg     | storm sand ripples <input checked="" type="checkbox"/> Y, <input type="checkbox"/> N                           |
|                                     | brachiopod        |                                     | monkfish       |  | squid             | crests: <input checked="" type="checkbox"/> sharp <input checked="" type="checkbox"/> rounded                  |
|                                     | bushy bry/hyd     |                                     | moon snail     |  |                   | <input checked="" type="checkbox"/> straight <input checked="" type="checkbox"/> multi-rippled                 |
|                                     | cancer crab       |                                     | mussels        |  | tunicate, B pilu. | gvl in ripple troughs <input type="checkbox"/> Y, <input checked="" type="checkbox"/> N                        |
|                                     | ceri burr anem    |                                     | ocean pout     |  | yellow encr. spg  | small ripples, [ <input type="checkbox"/> intermittent] <input type="checkbox"/> Y, <input type="checkbox"/> N |
|                                     | cod; cod juvenile |                                     |                |  |                   | sand, unrippled <input type="checkbox"/> Y, <input type="checkbox"/> N   |
|                                     | ctenophores       |                                     | Polymastia spg |  |                   | sand partial veneer on gravel <input type="checkbox"/> Y, <input type="checkbox"/> N                           |
|                                     | coralline algae   |                                     | red encr. spg  |  |                   | gravel pavement <input type="checkbox"/> Y, <input type="checkbox"/> N   |
|                                     | cunner            | <input checked="" type="checkbox"/> | red hake       |  |                   | boulders <input type="checkbox"/> Y, <input type="checkbox"/> N  |
|                                     | dk yellow spg     | <input checked="" type="checkbox"/> | sand dollars   |  |                   | mud <input type="checkbox"/> Y, <input type="checkbox"/> N   |
|                                     | Didemnum cols     |                                     |                |  | shells/fragments  | trawled/dredged shell frags <input type="checkbox"/> Y, <input type="checkbox"/> N                             |
|                                     | dogfish           |                                     |                |  |                   | trawl/dredge marks <input type="checkbox"/> Y, <input type="checkbox"/> N                                      |
|                                     | finger spg        |                                     | scallops       |  |                   | sand lance in water column <input type="checkbox"/> Y, <input type="checkbox"/> N                              |
| <input checked="" type="checkbox"/> | flounder          | <input checked="" type="checkbox"/> | sculpin        |  |                   | sand lance on/in substrate <input type="checkbox"/> Y, <input type="checkbox"/> N                              |
|                                     | haddock           |                                     | sea stars      |  |                   | sand lance in sed sample <input type="checkbox"/> Y, <input type="checkbox"/> N                                |
|                                     | herring           |                                     |                |  |                   | SL size: <input type="checkbox"/> sml <input type="checkbox"/> med <input type="checkbox"/> lg                 |
|                                     |                   |                                     | silver hake    |  |                   | SL nos:  |

AREA OF VAN VEEN GRAB = 0.1 SQ M; MAX DEPTH = 15 CM; VOLUME = 10.8 LITERS

DISTANCE BETWEEN PARALLEL LASERS = 20 CM

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USGS STATION 4720

SBNMS Site C4

CONSEC STA 46

|   |  |                    |          |   |   |
|---|--|--------------------|----------|---|---|
| CRUISE: USGS AUK2017044                     |  | DAY OF MONTH LOCAL | JD LOCAL | <input checked="" type="checkbox"/> DAY | Sunset: Sep 11, 2017<br>1900 EDT = 2300 UTC |
| LOCATION: STELLWAGEN BANK NMS               |  | SEP 14             | 257      | <input type="checkbox"/> NIGHT          |   |
| MONTH YEAR: SEPTEMBER 2017                  |  | DAY OF MONTH UTC   | JD UTC   | VIDEO FWD                               | FILE  |
| LOCAL TIME: EDT                             |  | SEP 14             | 257      | UPPER CAMERA 1                          | 047   |
|   |  |                    |          | VIDEO FWD                               | FILE  |
|   |  |                    |          | LOWER CAMERA 2                          | 1901  |
| USGS STA                                    | 4721   | SBNMS SITE         | C4       | CONSECUTIVE STA                         | 47  |
|   |  |                    |          | QUAD                                    | 5   |
|   |  |                    |          | VIDEO CLIP                              | 401   |
| <input type="checkbox"/> STA LOC            | <input checked="" type="checkbox"/> VIDEO START  | HH MM SS LOCAL     | DPH, m   | 42 deg 15.745 min                       | -70 deg 16.613 min                          |
|   | <input checked="" type="checkbox"/> WATER COLUMN | 110654             | 28       | (nav file corr 15.7473 min)             | (nav file corr 16.6187 min)                 |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO START             | HH MM SS LOCAL     | DPH, m   | 42 deg min                              | -70 deg min                                 |
|   | <input checked="" type="checkbox"/> ON SEABED    | 110746             |          | (nav file corr 15.7557 min)             | (nav file corr 16.5993 min)                 |
|   | <input type="checkbox"/> SMPL ATTEMPT            |                    |          |   |   |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> SAMPLE ATTEMPT          | HH MM SS LOCAL     | DPH, m   | 42 deg min                              | -70 deg min                                 |
|   |  |                    |          | (nav file corr min)                     | (nav file corr min)                         |
| <input checked="" type="checkbox"/> STA LOC | <input checked="" type="checkbox"/> SMPL ATTEMPT | HH MM SS LOCAL     | DPH, m   | 42 deg 15.762 min                       | -70 deg 16.587 min                          |
|   | <input checked="" type="checkbox"/> VIDEO END    | 110806             |          | (nav file corr 15.7605 min)             | (nav file corr 16.5922 min)                 |
|   | <input checked="" type="checkbox"/> OFF SEABED   |                    |          |   |   |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO END               | HH MM SS LOCAL     | DPH, m   | 42 deg min                              | -70 deg min                                 |
|   |  |                    |          | (nav file corr min)                     | (nav file corr min)                         |

UTC = EDT + 4 HRS, EST + 5 HRS

STATION DATE AND TIME, UTC

DDD : HH : MM : SS  
257 150806

☐ NO SEDIMENT SAMPLE: ☐ pre-tripped; ☐ no smpl attempted; ☐ jaws partly open; ☐ washout; ☐ refusal;  
☐ too gravelly/shelly; ☐ smpl too small; ☐ grvl in jaws;

DPH TO SED SURF IN GRAB, cm

SED VOL IN GRAB, liters

RIGHT 0.5 LEFT 2

RT 5.1 + LFT 4.5 = 9.6

#### SAMPLES / DATA COLLECTED

☒ SEDIMENT ☒ CTD CAST ☒ GPS NAV FILE  
☐ SAND LANCE ☒ INVERTS ☐ GRAB STILL  
☐ VERT. / ☐ HORIZ PLNK. TOW ☐ NO INVERTS PRESENT

|                   |                |                   |  | SEABED DESCRIPTION   |
|-------------------|----------------|-------------------|--|--|
| att epifauna      | herring eggs   | skate             |  | storm sand ripples <input checked="" type="checkbox"/> Y, <input type="checkbox"/> N                           |
| Boltonia tunic.   | lobster        | Suberites spg     |  | crests: <input checked="" type="checkbox"/> sharp <input type="checkbox"/> rounded                             |
| brachiopod        | monkfish       | squid             |  | <input checked="" type="checkbox"/> straight <input type="checkbox"/> multi-rippled                            |
| bushy bry/hyd     | moon snail     |                   |  | gvl in ripple troughs <input type="checkbox"/> Y, <input type="checkbox"/> N                                   |
| cancer crab       | mussels        | tunicate, B pilu. |  | small ripples, [ <input type="checkbox"/> intermittent] <input type="checkbox"/> Y, <input type="checkbox"/> N |
| ceri burr anem    | ocean pout     | yellow encr. spg  |  | sand, unrippled <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| cod; cod juvenile |                |                   |  | sand partial veneer on gravel <input type="checkbox"/> Y, <input type="checkbox"/> N                           |
| ctenophores       | Polymastia spg |                   |  | gravel pavement <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| coralline algae   | red encr. spg  |                   |  | boulders <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| cunner            | red hake       |                   |  | mud <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| dk yellow spg     | sand dollars   |                   |  | trawled/dredged shell frags <input type="checkbox"/> Y, <input type="checkbox"/> N                             |
| Didemnum cols     |                | shells/fragments  |  | trawl/dredge marks <input type="checkbox"/> Y, <input type="checkbox"/> N                                      |
| dogfish           |                |                   |  | sand lance in water column <input type="checkbox"/> Y, <input type="checkbox"/> N                              |
| finger spg        | scallops       |                   |  | sand lance on/in substrate <input type="checkbox"/> Y, <input type="checkbox"/> N                              |
| flounder          | sculpin        |                   |  | sand lance in sed sample <input type="checkbox"/> Y, <input type="checkbox"/> N                                |
| haddock           | sea stars      |                   |  | SL size: <input type="checkbox"/> sml <input type="checkbox"/> med <input type="checkbox"/> lg                 |
| herring           |                |                   |  | SL nos:  |
|                   | silver hake    |                   |  |  |

AREA OF VAN VEEN GRAB = 0.1 SQ M; MAX DEPTH = 15 CM; VOLUME = 10.8 LITERS  
DISTANCE BETWEEN PARALLEL LASERS = 20 CM

PAGE VALENTINE, USGS COASTAL AND MARINE GEOLOGY PROGRAM, WOODS HOLE, MA

USGS STATION

4721

SBNMS Site

C4

CONSEC STA

47



|  |  |  |  |
|--|--|--|--|
| <input type="checkbox"/> <b>NO SEDIMENT SAMPLE:</b> <input type="checkbox"/> pre-tripped; <input type="checkbox"/> no smpl attempted; <input type="checkbox"/> jaws partly open; <input type="checkbox"/> washout; <input type="checkbox"/> refusal; |  |  |  |
| <input type="checkbox"/> too gravelly/shelly; <input type="checkbox"/> smpl too small; <input type="checkbox"/> grvl in jaws;  |  |  |  |
| DPH TO SED SURF IN GRAB, cm<br>RIGHT <u>4</u> LEFT <u>4.5</u>  |  | SED VOL IN GRAB, liters<br>RT <u>3.6</u> + LFT <u>3.4</u> = <u>7.0</u> |  |
| <b>SAMPLES / DATA COLLECTED</b>  |  |  |  |
| <input checked="" type="checkbox"/> SEDIMENT <input checked="" type="checkbox"/> CTD CAST <input checked="" type="checkbox"/> GPS NAV FILE   |  |  |  |
| <input type="checkbox"/> SAND LANCE <input checked="" type="checkbox"/> INVERTS <input checked="" type="checkbox"/> GRAB STILLs  |  |  |  |
| <input checked="" type="checkbox"/> VERT. / <input type="checkbox"/> HORIZ <input type="checkbox"/> PLNK. TOW <input type="checkbox"/> NO INVERTS PRESENT  |  |  |  |

  

|                   |                |                    | SEABED DESCRIPTION  |
|-------------------|----------------|--------------------|---|
| att epifauna      | herring eggs   | skate              | storm sand ripples <input type="checkbox"/> Y, <input checked="" type="checkbox"/> N                                      |
| Boltenia tunic.   | lobster        | Suberites spg      | crests: <input type="checkbox"/> sharp <input type="checkbox"/> rounded   |
| brachiopod        | monkfish       | squid              | <input type="checkbox"/> straight <input type="checkbox"/> multi-rippled  |
| ✓ bushy bry/hyd   | moon snail     |                    | gvl in ripple troughs <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| ✓ cancer crab     | mussels        | tunicate, B pilu.  | small ripples, [ <input type="checkbox"/> intermittent] <input type="checkbox"/> Y, <input checked="" type="checkbox"/> N |
| ceri burr anem    | ocean pout     | yellow encr. spg   | sand, unrippled <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| cod; cod juvenile |                |                    | sand partial veneer on gravel <input type="checkbox"/> Y, <input type="checkbox"/> N                                      |
| ctenophores       | Polymastia spg |                    | gravel pavement <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| coralline algae   | red encr. spg  |                    | boulders <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| cunner            | red hake       |                    | mud <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| dk yellow spg     | ✓ sand dollars |                    | trawled/dredged shell frags <input checked="" type="checkbox"/> Y, <input type="checkbox"/> N                             |
| Didemnum cols     |                | ✓ shells/fragments | trawl/dredge marks <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| dogfish           |                |                    | sand lance in water column <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| ✓ finger spg      | ✓ scallops     |                    | sand lance on/in substrate <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| flounder          | ✓ sculpin      |                    | sand lance in sed sample <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| haddock           | sea stars      |                    | SL size: <input type="checkbox"/> sml <input type="checkbox"/> med <input type="checkbox"/> lg                            |
| herring           |                |                    | SL nos:   |
|                   | silver hake    |                    |   |

CONSEC STA 48

|   |  |                            |              |  |  |
|---|--|----------------------------|--------------|--|--|
| CRUISE: USGS AUK2017044                     |  | DAY OF MONTH LOCAL         | JD LOCAL     | <input checked="" type="checkbox"/> DAY          | Sunset: Sep 11, 2017<br>1900 EDT = 2300 UTC                            |
| LOCATION: STELLWAGEN BANK NMS               |  | SEP 14                     | 257          | <input type="checkbox"/> NIGHT                   |  |
| MONTH YEAR: SEPTEMBER 2017                  |  | DAY OF MONTH UTC           | JD UTC       | VIDEO FWD UPPER CAMERA 1                         | FILE 049   |
| LOCAL TIME: EDT                             |  | SEP 14                     | 257          | VIDEO FWD LOWER CAMERA 2                         | FILE 1903  |
| USGS STA 4723                               | SBNMS SITE C10   | CONSECUTIVE STA 49         | QUAD 5       | VIDEO CLIP 403                                   |  |
| <input type="checkbox"/> STA LOC            | <input checked="" type="checkbox"/> VIDEO START<br><input checked="" type="checkbox"/> WATER COLUMN                                      | HH MM SS LOCAL<br>114408   | DPH, m<br>31 | 42 deg 14.526 min<br>(nav file corr 14.5243 min) | -70 deg 17.867 min<br>(nav file corr 17.8694 min)                      |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO START<br><input checked="" type="checkbox"/> ON SEABED<br><input type="checkbox"/> SMPL ATTEMPT           | HH MM SS LOCAL<br>114510   | DPH, m       | 42 deg min                                       | -70 deg min<br>(nav file corr 14.5360 min) (nav file corr 17.8615 min) |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> SAMPLE ATTEMPT  | HH MM SS LOCAL             | DPH, m       | 42 deg min<br>(nav file corr min)                | -70 deg min<br>(nav file corr min)                                     |
| <input checked="" type="checkbox"/> STA LOC | <input checked="" type="checkbox"/> SMPL ATTEMPT<br><input type="checkbox"/> VIDEO END<br><input checked="" type="checkbox"/> OFF SEABED | HH MM SS LOCAL<br>115038   | DPH, m       | 42 deg 14.600 min<br>(nav file corr 14.5994 min) | -70 deg 17.826 min<br>(nav file corr 17.8277 min)                      |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO END   | HH MM SS LOCAL             | DPH, m       | 42 deg min<br>(nav file corr min)                | -70 deg min<br>(nav file corr min)                                     |
| UTC = EDT + 4 HRS, EST + 5 HRS              |  | STATION DATE AND TIME, UTC |              | DDD : HH : MM : SS<br>257 155038                 |  |

|  |  |  |  |   |  |
|--|--|--|--|---|--|
| <input type="checkbox"/> NO SEDIMENT SAMPLE: <input type="checkbox"/> pre-tripped; <input type="checkbox"/> no smpl attempted; <input type="checkbox"/> jaws partly open; <input type="checkbox"/> washout; <input type="checkbox"/> refusal;<br><input type="checkbox"/> too gravelly/shelly; <input type="checkbox"/> smpl too small; <input type="checkbox"/> grvl in jaws; |  |  |  |   |  |
| DPH TO SED SURF IN GRAB, cm<br>RIGHT 3.5 LEFT 3  |  | SED VOL IN GRAB, liters<br>RT 3.8 + LFT 4.0 = 7.8    |  | SAMPLES / DATA COLLECTED  |  |
|  |  |  |  | <input checked="" type="checkbox"/> SEDIMENT <input checked="" type="checkbox"/> CTD CAST <input checked="" type="checkbox"/> GPS NAV FILE<br><input type="checkbox"/> SAND LANCE <input checked="" type="checkbox"/> INVERTS <input checked="" type="checkbox"/> GRAB STILLs<br><input checked="" type="checkbox"/> VERT. / <input type="checkbox"/> HORIZ PLNK. TOW <input type="checkbox"/> NO INVERTS PRESENT |  |
|  |  |  | SEABED DESCRIPTION   |   |  |
| att epifauna   | herring eggs                                     | skate  | storm sand ripples <input type="checkbox"/> Y, <input checked="" type="checkbox"/> N                           |   |  |
| Boltenia tunic.  | lobster  | Suberites spg  | crests: <input type="checkbox"/> sharp <input type="checkbox"/> rounded  |   |  |
| brachiopod   | monkfish   | squid  | <input type="checkbox"/> straight <input type="checkbox"/> multi-rippled                                       |   |  |
| bushy bry/hyd  | moon snail                                       | tunicate, B pilu.                                    | gvl in ripple troughs <input type="checkbox"/> Y, <input type="checkbox"/> N                                   |   |  |
| cancer crab  | mussels  | yellow encr. spg                                     | small ripples, [ <input type="checkbox"/> intermittent] <input type="checkbox"/> Y, <input type="checkbox"/> N |   |  |
| ceri burr anem   | ocean pout                                       |  | sand, unrippled <input checked="" type="checkbox"/> Y, <input type="checkbox"/> N                              |   |  |
| cod; cod juvenile  |  |  | sand partial veneer on gravel <input type="checkbox"/> Y, <input type="checkbox"/> N                           |   |  |
| ctenophores  | Polymastia spg                                   |  | gravel pavement <input type="checkbox"/> Y, <input type="checkbox"/> N   |   |  |
| coralline algae  | red encr. spg                                    |  | boulders <input type="checkbox"/> Y, <input type="checkbox"/> N  |   |  |
| cunner   | red hake   |  | mud <input type="checkbox"/> Y, <input type="checkbox"/> N   |   |  |
| dk yellow spg  | <input checked="" type="checkbox"/> sand dollars | <input checked="" type="checkbox"/> shells/fragments | trawled/dredged shell frags <input checked="" type="checkbox"/> Y, <input type="checkbox"/> N                  |   |  |
| Didemnum cols  |  |  | trawl/dredge marks <input type="checkbox"/> Y, <input type="checkbox"/> N                                      |   |  |
| dogfish  |  |  | sand lance in water column <input type="checkbox"/> Y, <input type="checkbox"/> N                              |   |  |
| finger spg   | scallops   |  | sand lance on/in substrate <input type="checkbox"/> Y, <input type="checkbox"/> N                              |   |  |
| flounder   | sculpin  |  | sand lance in sed sample <input type="checkbox"/> Y, <input type="checkbox"/> N                                |   |  |
| haddock  | sea stars  |  | SL size: <input type="checkbox"/> sml <input type="checkbox"/> med <input type="checkbox"/> lg                 |   |  |
| herring  |  |  | SL nos:  |   |  |
|  | silver hake                                      |  |  |   |  |

AREA OF VAN VEEN GRAB = 0.1 SQ M, MAX DEPTH = 15 CM, VOLUME = 10.8 LITERS

DISTANCE BETWEEN PARALLEL LASERS = 20 CM

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USGS STATION 4723

SBNMS Site C10, CONSEC STA 49

|   |  |                          |              |  |   |
|---|--|--------------------------|--------------|--|---|
| CRUISE: USGS AUK2017044                     |  | DAY OF MONTH LOCAL       | JD LOCAL     | <input checked="" type="checkbox"/> DAY          | Sunset: Sep 11, 2017<br>1900 EDT = 2300 UTC       |
| LOCATION: STELLWAGEN BANK NMS               |  | SEP 14                   | 257          | <input type="checkbox"/> NIGHT                   |   |
| MONTH YEAR: SEPTEMBER 2017                  |  | DAY OF MONTH UTC         | JD UTC       | VIDEO FWD UPPER CAMERA 1                         | FILE 050  |
| LOCAL TIME: EDT                             |  | SEP 14                   | 257          | VIDEO FWD LOWER CAMERA 2                         | FILE 1904   |
| USGS STA 4724                               | SBNMS SITE C5  | CONSECUTIVE STA 50       | QUAD 5       | VIDEO CLIP 404                                   |   |
| <input type="checkbox"/> STA LOC            | <input checked="" type="checkbox"/> VIDEO START<br><input checked="" type="checkbox"/> WATER COLUMN                                      | HH MM SS LOCAL<br>120308 | DPH, m<br>27 | 42 deg 14.697 min<br>(nav file corr 14.6952 min) | -70 deg 16.399 min<br>(nav file corr 16.4007 min) |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO START<br><input checked="" type="checkbox"/> ON SEABED<br><input type="checkbox"/> SMPL ATTEMPT           | HH MM SS LOCAL<br>120408 | DPH, m       | 42 deg min<br>(nav file corr 14.7071 min)        | -70 deg min<br>(nav file corr 16.3944 min)        |
| <input checked="" type="checkbox"/> STA LOC | <input checked="" type="checkbox"/> SAMPLE ATTEMPT   | HH MM SS LOCAL<br>120608 | DPH, m       | 42 deg 14.723 min<br>(nav file corr 14.7224 min) | -70 deg 16.391 min<br>(nav file corr 16.3911 min) |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> SMPL ATTEMPT<br><input checked="" type="checkbox"/> VIDEO END<br><input checked="" type="checkbox"/> OFF SEABED | HH MM SS LOCAL<br>120920 | DPH, m       | 42 deg 14.752 min<br>(nav file corr 14.7518 min) | -70 deg 16.390 min<br>(nav file corr 16.3900 min) |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO END   | HH MM SS LOCAL           | DPH, m       | 42 deg min<br>(nav file corr min)                | -70 deg min<br>(nav file corr min)                |

UTC = EDT + 4 HRS, EST + 5 HRS

STATION DATE AND TIME, UTC

DDD : HH : MM : SS  
257 16 06 08

☐ NO SEDIMENT SAMPLE: ☐ pre-tripped; ☐ no smpl attempted; ☐ jaws partly open; ☐ washout; ☐ refusal;  
☐ too gravelly/shelly; ☐ smpl too small; ☐ grvl in jaws;

DPH TO SED SURF IN GRAB, cm

SED VOL IN GRAB, liters

RIGHT 2, LEFT 2.5

RT 4.5 + LFT 4.2 = 8.7

## SAMPLES / DATA COLLECTED

☒ SEDIMENT ☒ CTD CAST ☒ GPS NAV FILE  
☐ SAND LANCE ☐ INVERTS ☒ GRAB STILL  
☒ VERT. / ☐ HORIZ PLNK. TOW ☐ NO INVERTS PRESENT

|   |  |   | SEABED DESCRIPTION   |
|---|--|---|--|
| att epifauna                                    | herring eggs                                     | <input checked="" type="checkbox"/> skate | storm sand ripples <input checked="" type="checkbox"/> Y, <input type="checkbox"/> N                           |
| Boltenia tunic.                                 | lobster  | Suberites spg                             | crests: <input checked="" type="checkbox"/> sharp <input type="checkbox"/> rounded                             |
| brachiopod                                      | monkfish   | squid                                     | <input checked="" type="checkbox"/> straight <input checked="" type="checkbox"/> multi-rippled                 |
| bushy bry/hyd                                   | moon snail                                       |   | gvl in ripple troughs <input type="checkbox"/> Y, <input checked="" type="checkbox"/> N                        |
| <input checked="" type="checkbox"/> cancer crab | mussels  | tunicate, B pilu.                         | small ripples, [ <input type="checkbox"/> intermittent] <input type="checkbox"/> Y, <input type="checkbox"/> N |
| ceri burr anem                                  | ocean pout                                       | yellow encr. spg                          | sand, unrippled <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| cod; cod juvenile                               |  |   | sand partial veneer on gravel <input type="checkbox"/> Y, <input type="checkbox"/> N                           |
| ctenophores                                     | Polymastia spg                                   |   | gravel pavement <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| coralline algae                                 | red encr. spg                                    |   | boulders <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| cunner  | red hake   |   | mud <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| dk yellow spg                                   | <input checked="" type="checkbox"/> sand dollars |   | trawled/dredged shell frags <input type="checkbox"/> Y, <input type="checkbox"/> N                             |
| Didemnum cols                                   |  | shells/fragments                          | trawl/dredge marks <input type="checkbox"/> Y, <input type="checkbox"/> N                                      |
| dogfish   |  |   | sand lance in water column <input type="checkbox"/> Y, <input type="checkbox"/> N                              |
| finger spg                                      | scallops   |   | sand lance on/in substrate <input type="checkbox"/> Y, <input type="checkbox"/> N                              |
| <input checked="" type="checkbox"/> flounder    | <input checked="" type="checkbox"/> sculpin      |   | sand lance in sed sample <input type="checkbox"/> Y, <input type="checkbox"/> N                                |
| haddock   | sea stars  |   | SL size: <input type="checkbox"/> sml <input type="checkbox"/> med <input type="checkbox"/> lg                 |
| herring   |  |   | SL nos:  |
|   | silver hake                                      |   |  |

AREA OF VAN VEEN GRAB = 0.1 SQ M, MAX DEPTH = 15 CM, VOLUME = 10.8 LITERS  
DISTANCE BETWEEN PARALLEL LASERS = 20 CM

PAGE VALENTINE, USGS COASTAL AND MARINE GEOLOGY PROGRAM, WOODS HOLE, MA

SBNMS Site

USGS STATION

CONSEC STA



|   |   |                          |              |  |   |
|---|---|--------------------------|--------------|--|---|
| CRUISE: USGS AUK2017044                     |   | DAY OF MONTH LOCAL       | JD LOCAL     | <input checked="" type="checkbox"/> DAY        | Sunset: Sep 11, 2017<br>1900 EDT = 2300 UTC                           |
| LOCATION: STELLWAGEN BANK NMS               |   | SEP 14                   | 257          | <input type="checkbox"/> NIGHT                 |   |
| MONTH YEAR: SEPTEMBER 2017                  |   | DAY OF MONTH UTC         | JD UTC       | VIDEO FWD                                      | FILE 051  |
| LOCAL TIME: EDT                             |   | SEP 14                   | 257          | VIDEO FWD<br>UPPER CAMERA                      | FILE 1905   |
| USGS STA 4725                               |   | SBNMS SITE 528           |              | CONSECUTIVE STA 51                             | QUAD 2 VIDEO CLIP 405   |
| <input type="checkbox"/> STA LOC            | <input checked="" type="checkbox"/> VIDEO START<br><input checked="" type="checkbox"/> WATER COLUMN   | HH MM SS LOCAL<br>124210 | DPH, m<br>20 | 42 deg 9.900 min<br>(nav file corr 9.8994 min) | -70 deg 17.531 min<br>(nav file corr 17.5298 min)                     |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO START<br><input checked="" type="checkbox"/> ON SEABED<br><input type="checkbox"/> SMPL ATTEMPT                      | HH MM SS LOCAL<br>124254 | DPH, m       | 42 deg min                                     | -70 deg min<br>(nav file corr 9.9060 min) (nav file corr 17.5334 min) |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> SAMPLE ATTEMPT   | HH MM SS LOCAL           | DPH, m       | 42 deg min                                     | -70 deg min<br>(nav file corr min) (nav file corr min)                |
| <input checked="" type="checkbox"/> STA LOC | <input checked="" type="checkbox"/> SMPL ATTEMPT<br><input checked="" type="checkbox"/> VIDEO END<br><input checked="" type="checkbox"/> OFF SEABED | HH MM SS LOCAL<br>124340 | DPH, m       | 42 deg 9.918 min<br>(nav file corr 9.9167 min) | -70 deg 17.536 min<br>(nav file corr 17.5351 min)                     |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO END  | HH MM SS LOCAL           | DPH, m       | 42 deg min                                     | -70 deg min<br>(nav file corr min) (nav file corr min)                |

UTC = EDT + 4 HRS, EST + 5 HRS

STATION DATE AND TIME, UTC

DDD : HH : MM : SS

257 164340

☐ NO SEDIMENT SAMPLE: ☐ pre-tripped; ☐ no smpl attempted; ☐ jaws partly open; ☐ washout; ☐ refusal;  
☐ too gravelly/shelly; ☐ smpl too small; ☐ grvl in jaws;

|                             |                         |  |
|-----------------------------|-------------------------|--|
| DPH TO SED SURF IN GRAB, cm | SED VOL IN GRAB, liters | SAMPLES / DATA COLLECTED   |
| RIGHT 3.5 LEFT 2.5          | RT 3.8 + LFT 4.2 = 8.0  |  |
| sand lance                  |                         | <input checked="" type="checkbox"/> SEDIMENT <input checked="" type="checkbox"/> CTD CAST <input checked="" type="checkbox"/> GPS NAV FILE<br><input checked="" type="checkbox"/> SAND LANCE <input type="checkbox"/> INVERTS <input checked="" type="checkbox"/> GRAB STILL<br><input checked="" type="checkbox"/> VERT. / <input type="checkbox"/> HORIZ PLNK. TOW <input type="checkbox"/> NO INVERTS PRESENT |

|                   |                |                   | SEABED DESCRIPTION   |
|-------------------|----------------|-------------------|--|
| alt epifauna      | herring eggs   | skate             | storm sand ripples <input checked="" type="checkbox"/> Y, <input checked="" type="checkbox"/> N                      |
| Boltenia tunic.   | lobster        | Suberites spg     | crests: <input type="checkbox"/> sharp <input checked="" type="checkbox"/> rounded                                   |
| brachiopod        | monkfish       | squid             | <input type="checkbox"/> straight <input type="checkbox"/> multi-rippled   |
| bushy bry/hyd     | moon snail     |                   | gvl in ripple troughs <input type="checkbox"/> Y, <input checked="" type="checkbox"/> N                              |
| cancer crab       | mussels        | tunicate, B pilu. | small ripples, [ <input type="checkbox"/> intermittent] <input type="checkbox"/> Y, <input type="checkbox"/> N       |
| ceri burr anem    | ocean pout     | yellow encr. spg  | sand, unrippled <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| cod; cod juvenile |                |                   | sand partial veneer on gravel <input type="checkbox"/> Y, <input type="checkbox"/> N                                 |
| ctenophores       | Polymastia spg |                   | gravel pavement <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| coralline algae   | red encr. spg  |                   | boulders <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| cunner            | red hake       |                   | mud <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| dk yellow spg     | sand dollars   |                   | trawled/dredged shell frags <input type="checkbox"/> Y, <input type="checkbox"/> N                                   |
| Didemnum cols     |                | shells/fragments  | trawl/dredge marks <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| dogfish           |                |                   | sand lance in water column <input type="checkbox"/> Y, <input type="checkbox"/> N                                    |
| finger spg        | scallops       |                   | sand lance on/in substrate <input type="checkbox"/> Y, <input type="checkbox"/> N                                    |
| flounder          | sculpin        |                   | sand lance in sed sample <input checked="" type="checkbox"/> Y, <input type="checkbox"/> N                           |
| haddock           | sea stars      |                   | SL size: <input type="checkbox"/> sml <input checked="" type="checkbox"/> med <input checked="" type="checkbox"/> lg |
| herring           |                |                   | SL nos: 6  |
|                   | silver hake    |                   |  |

AREA OF VAN VEEN GRAB = 0.1 SQ M; MAX DEPTH = 15 CM; VOLUME = 10.8 LITERS

DISTANCE BETWEEN PARALLEL LASERS = 20 CM

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USGS STATION

4725

SBNMS Site

528

CONSEC STA

51

|   |   |                              |                 |   |   |
|---|---|------------------------------|-----------------|---|---|
| CRUISE: USGS AUK2017044                     |   | DAY OF MONTH LOCAL<br>SEP 14 | JD LOCAL<br>257 | <input checked="" type="checkbox"/> DAY<br><input type="checkbox"/> NIGHT | Sunset: Sep 11, 2017<br>1900 EDT = 2300 UTC       |
| LOCATION: STELLWAGEN BANK NMS               |   | DAY OF MONTH UTC<br>SEP 14   | JD UTC<br>257   | VIDEO FWD UPPER CAMERA 1<br>VIDEO FWD LOWER CAMERA 2                      | FILE 052<br>FILE 1906                             |
| MONTH YEAR: SEPTEMBER 2017                  |   |                              |                 |   |   |
| LOCAL TIME: EDT                             |   |                              |                 |   |   |
| USGS STA<br>4726                            | SBNMS SITE<br>528   | CONSECUTIVE STA<br>52        | QUAD<br>2       | VIDEO CLIP<br>406   |   |
| <input type="checkbox"/> STA LOC            | <input checked="" type="checkbox"/> VIDEO START<br><input checked="" type="checkbox"/> WATER COLUMN   | HH MM SS LOCAL<br>130120     | DPH, m<br>20    | 42 deg 9.920 min<br>(nav file corr 9.9211 min)                            | -70 deg 17.534 min<br>(nav file corr 17.5327 min) |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO START<br><input checked="" type="checkbox"/> ON SEABED<br><input type="checkbox"/> SMPL ATTEMPT                      | HH MM SS LOCAL<br>130206     | DPH, m          | 42 deg min<br>(nav file corr 9.9183 min)                                  | -70 deg min<br>(nav file corr 17.5375 min)        |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> SAMPLE ATTEMPT   | HH MM SS LOCAL               | DPH, m          | 42 deg min<br>(nav file corr min)   | -70 deg min<br>(nav file corr min)                |
| <input checked="" type="checkbox"/> STA LOC | <input checked="" type="checkbox"/> SMPL ATTEMPT<br><input checked="" type="checkbox"/> VIDEO END<br><input checked="" type="checkbox"/> OFF SEABED | HH MM SS LOCAL<br>130250     | DPH, m          | 42 deg 9.928 min<br>(nav file corr 9.9255 min)                            | -70 deg 17.540 min<br>(nav file corr 17.5402 min) |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO END  | HH MM SS LOCAL               | DPH, m          | 42 deg min<br>(nav file corr min)   | -70 deg min<br>(nav file corr min)                |

UTC = EDT + 4 HRS, EST + 5 HRS

STATION DATE AND TIME, UTC

DDD : HH : MM : SS

257 170250

☐ NO SEDIMENT SAMPLE: ☐ pre-tripped; ☐ no smpl attempted; ☐ jaws partly open; ☐ washout; ☐ refusal;  
☐ too gravelly/shelly; ☐ smpl too small; ☐ grvl in jaws;

DPH TO SED SURF IN GRAB, cm

SED VOL IN GRAB, liters

RIGHT 4 LEFT 5

RT 3.6 + LFT 3.1 = 6.7

## SAMPLES / DATA COLLECTED

☒ SEDIMENT ☒ CTD CAST ☐ GPS NAV FILE  
☒ SAND LANCE ☒ INVERTS ☒ GRAB STILLs  
☒ VERT. / ☐ HORIZ PLNK. TOW ☐ NO INVERTS PRESENT

|                   |  |                   | SEABED DESCRIPTION   |
|-------------------|--|-------------------|--|
| att epifauna      | herring eggs                                     | skate             | storm sand ripples <input type="checkbox"/> Y, <input checked="" type="checkbox"/> N                                 |
| Boltenia tunic.   | lobster  | Suberites spg     | crests: <input type="checkbox"/> sharp <input type="checkbox"/> rounded  |
| brachiopod        | monkfish   | squid             | <input type="checkbox"/> straight <input type="checkbox"/> multi-rippled   |
| bushy bry/hyd     | moon snail                                       | tunicate, B pilu. | grvl in ripple troughs <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| cancer crab       | mussels  | yellow encr. spg  | small ripples, [ <input type="checkbox"/> intermittent] <input type="checkbox"/> Y, <input type="checkbox"/> N       |
| ceri burr anem    | ocean pout                                       |                   | sand, unrippled <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| cod; cod juvenile |  |                   | sand partial veneer on gravel <input type="checkbox"/> Y, <input type="checkbox"/> N                                 |
| ctenophores       | Polymastia spg                                   |                   | gravel pavement <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| coralline algae   | red encr. spg                                    |                   | boulders <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| cunner            | red hake   |                   | mud <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| dk yellow spg     | <input checked="" type="checkbox"/> sand dollars |                   | trawled/dredged shell frags <input type="checkbox"/> Y, <input type="checkbox"/> N                                   |
| Didemnum cols     |  | shells/fragments  | trawl/dredge marks <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| dogfish           |  |                   | sand lance in water column <input type="checkbox"/> Y, <input type="checkbox"/> N                                    |
| finger spg        | scallops   |                   | sand lance on/in substrate <input type="checkbox"/> Y, <input type="checkbox"/> N                                    |
| flounder          | sculpin  |                   | sand lance in sed sample <input checked="" type="checkbox"/> Y, <input type="checkbox"/> N                           |
| haddock           | sea stars  |                   | SL size: <input type="checkbox"/> sml <input checked="" type="checkbox"/> med <input checked="" type="checkbox"/> lg |
| herring           |  |                   | SL nos: 7  |
|                   | silver hake                                      |                   |  |

AREA OF VAN VEEN GRAB = 0.1 SQ M, MAX DEPTH = 15 CM, VOLUME = 10.8 LITERS  
DISTANCE BETWEEN PARALLEL LASERS = 20 CM

USGS STATION

4726

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SBNMS Site

528

CONSEC STA

52

|   |  |                    |          |   |   |
|---|--|--------------------|----------|---|---|
| CRUISE: USGS AUK2017044                     |  | DAY OF MONTH LOCAL | JD LOCAL | <input checked="" type="checkbox"/> DAY | Sunset: Sep 11, 2017<br>1900 EDT = 2300 UTC |
| LOCATION: STELLWAGEN BANK NMS               |  | SEP 14             | 257      | <input type="checkbox"/> NIGHT          |   |
| MONTH YEAR: SEPTEMBER 2017                  |  | DAY OF MONTH UTC   | JD UTC   | VIDEO FWD                               | FILE  |
| LOCAL TIME: EDT                             |  | SEP 14             | 257      | UPPER CAMERA 1                          | 053   |
|   |  |                    |          | VIDEO FWD                               | FILE  |
|   |  |                    |          | LOWER CAMERA 2                          | 1907  |
| USGS STA                                    | 4727   | SBNMS SITE         | 528      | CONSECUTIVE STA                         | 53  |
|   |  |                    |          | QUAD                                    | 2   |
|   |  |                    |          | VIDEO CLIP                              | 407   |
| <input type="checkbox"/> STA LOC            | <input checked="" type="checkbox"/> VIDEO START  | HH MM SS LOCAL     | DPH, m   | 42 deg                                  | min   |
|   | <input checked="" type="checkbox"/> WATER COLUMN | 131910             | 20       | (nav file corr)                         | 9.9129 min                                  |
|   |  |                    |          | -70 deg                                 | 17.529 min                                  |
|   |  |                    |          | (nav file corr)                         | 17.5283 min                                 |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO START             | HH MM SS LOCAL     | DPH, m   | 42 deg                                  | min   |
|   | <input checked="" type="checkbox"/> ON SEABED    | 131954             |          | -70 deg                                 | min   |
|   | <input type="checkbox"/> SMPL ATTEMPT            |                    |          | (nav file corr)                         | 9.9213 min                                  |
|   |  |                    |          | (nav file corr)                         | 17.5319 min                                 |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> SAMPLE ATTEMPT          | HH MM SS LOCAL     | DPH, m   | 42 deg                                  | min   |
|   |  |                    |          | -70 deg                                 | min   |
|   |  |                    |          | (nav file corr)                         | min   |
|   |  |                    |          | (nav file corr)                         | min   |
| <input checked="" type="checkbox"/> STA LOC | <input checked="" type="checkbox"/> SMPL ATTEMPT | HH MM SS LOCAL     | DPH, m   | 42 deg                                  | min   |
|   | <input checked="" type="checkbox"/> VIDEO END    | 132030             |          | -70 deg                                 | 17.536 min                                  |
|   | <input checked="" type="checkbox"/> OFF SEABED   |                    |          | (nav file corr)                         | 9.9312 min                                  |
|   |  |                    |          | (nav file corr)                         | 17.5335 min                                 |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO END               | HH MM SS LOCAL     | DPH, m   | 42 deg                                  | min   |
|   |  |                    |          | -70 deg                                 | min   |
|   |  |                    |          | (nav file corr)                         | min   |
|   |  |                    |          | (nav file corr)                         | min   |

UTC = EDT + 4 HRS, EST + 5 HRS

STATION DATE AND TIME, UTC

DDD : HH : MM : SS  
257 17 2030

☐ NO SEDIMENT SAMPLE: ☐ pre-tripped; ☐ no smpl attempted; ☐ jaws partly open; ☐ washout; ☐ refusal;  
☐ too gravelly/shelly; ☐ smpl too small; ☐ grvl in jaws;

DPH TO SED SURF IN GRAB, cm

SED VOL IN GRAB, liters

RIGHT 2.5 LEFT 2

RT 4.2 + LFT 4.5 = 8.7

#### SAMPLES / DATA COLLECTED

☒ SEDIMENT ☒ CTD CAST ☒ GPS NAV FILE  
☒ SAND LANCE ☒ INVERTS ☐ GRAB STILL  
☒ VERT. / ☐ HORIZ PLNK. TOW ☐ NO INVERTS PRESENT

|   |                                     |                |                   | SEABED DESCRIPTION   |
|---|-------------------------------------|----------------|-------------------|--|
| att epifauna                                    |                                     | herring eggs   | skate             |  |
| Boltenia tunic.                                 |                                     | lobster        | Suberites spg     | storm sand ripples <input checked="" type="checkbox"/> Y, <input checked="" type="checkbox"/> N                      |
| brachiopod                                      |                                     | monkfish       | squid             | crests: <input type="checkbox"/> sharp <input checked="" type="checkbox"/> rounded                                   |
| bushy bry/hyd                                   |                                     | moon snail     |                   | <input type="checkbox"/> straight <input type="checkbox"/> multi-rippled   |
| <input checked="" type="checkbox"/> cancer crab |                                     | mussels        | tunicate, B pilu. | gvl in ripple troughs <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| ceri burr anem                                  |                                     | ocean pout     | yellow encr. spg  | small ripples, [ <input type="checkbox"/> intermittent] <input type="checkbox"/> Y, <input type="checkbox"/> N       |
| cod; cod juvenile                               |                                     |                |                   | sand, unrippled <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| ctenophores                                     |                                     | Polymastia spg |                   | sand partial veneer on gravel <input type="checkbox"/> Y, <input type="checkbox"/> N                                 |
| coralline algae                                 |                                     | red encr. spg  |                   | gravel pavement <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| cunner  |                                     | red hake       |                   | boulders <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| dk yellow spg                                   | <input checked="" type="checkbox"/> | sand dollars   |                   | mud <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| Didemnum cols                                   |                                     |                | shells/fragments  | trawled/dredged shell frags <input type="checkbox"/> Y, <input type="checkbox"/> N                                   |
| dogfish   |                                     |                |                   | trawl/dredge marks <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| finger spg                                      |                                     | scallops       |                   | sand lance in water column <input type="checkbox"/> Y, <input checked="" type="checkbox"/> N                         |
| flounder  |                                     | sculpin        |                   | sand lance on/in substrate <input checked="" type="checkbox"/> Y, <input type="checkbox"/> N                         |
| haddock   |                                     | sea stars      |                   | sand lance in sed sample <input checked="" type="checkbox"/> Y, <input type="checkbox"/> N                           |
| herring   |                                     |                |                   | SL size: <input type="checkbox"/> sml <input checked="" type="checkbox"/> med <input checked="" type="checkbox"/> lg |
|   |                                     | silver hake    |                   | SL nos: 4727/5   |

AREA OF VAN VEEN GRAB = 0.1 SQ M; MAX DEPTH = 15 CM; VOLUME = 10.8 LITERS  
DISTANCE BETWEEN PARALLEL LASERS = 20 CM

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USGS STATION 4727  
SBNMS Site 528, CONSEC STA 53





|   |   |                          |              |  |   |
|---|---|--------------------------|--------------|--|---|
| CRUISE: USGS AUK2017044                     |   | DAY OF MONTH LOCAL       | JD LOCAL     | <input checked="" type="checkbox"/> DAY        | Sunset: Sep 11, 2017<br>1900 EDT = 2300 UTC       |
| LOCATION: STELLWAGEN BANK NMS               |   | SEP 14                   | 257          | <input type="checkbox"/> NIGHT                 |   |
| MONTH YEAR: SEPTEMBER 2017                  |   | DAY OF MONTH UTC         | JD UTC       | VIDEO FWD                                      | FILE 055  |
| LOCAL TIME: EDT                             |   | SEP 14                   | 257          | VIDEO FWD<br>LOWER CAMERA                      | FILE 1909   |
| USGS STA 4729                               | SBNMS SITE 527  | CONSECUTIVE STA 55       | QUAD 2       | VIDEO CLIP 409                                 |   |
| <input type="checkbox"/> STA LOC            | <input checked="" type="checkbox"/> VIDEO START<br><input checked="" type="checkbox"/> WATER COLUMN   | HH MM SS LOCAL<br>134832 | DPH, m<br>20 | 42 deg 9.635 min<br>(nav file corr 9.6316 min) | -70 deg 18.254 min<br>(nav file corr 18.2541 min) |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO START<br><input checked="" type="checkbox"/> ON SEABED<br><input type="checkbox"/> SMPL ATTEMPT                      | HH MM SS LOCAL<br>134924 | DPH, m       | 42 deg min<br>(nav file corr 9.6423 min)       | -70 deg min<br>(nav file corr 18.2604 min)        |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> SAMPLE ATTEMPT   | HH MM SS LOCAL           | DPH, m       | 42 deg min<br>(nav file corr min)              | -70 deg min<br>(nav file corr min)                |
| <input checked="" type="checkbox"/> STA LOC | <input checked="" type="checkbox"/> SMPL ATTEMPT<br><input checked="" type="checkbox"/> VIDEO END<br><input checked="" type="checkbox"/> OFF SEABED | HH MM SS LOCAL<br>135014 | DPH, m       | 42 deg 9.654 min<br>(nav file corr 9.6526 min) | -70 deg 18.271 min<br>(nav file corr 18.2693 min) |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO END  | HH MM SS LOCAL           | DPH, m       | 42 deg min<br>(nav file corr min)              | -70 deg min<br>(nav file corr min)                |

UTC = EDT + 4 HRS, EST + 5 HRS

STATION DATE AND  
TIME, UTC

DDD : HH : MM : SS

257 17 50 14

☐ NO SEDIMENT SAMPLE: ☐ pre-tripped; ☐ no smpl attempted; ☐ jaws partly open; ☐ washout; ☐ refusal;  
☐ too gravelly/shelly; ☐ smpl too small; ☐ grvl in jaws;

DPH TO SED SURF IN GRAB, cm

SED VOL IN GRAB, liters

RIGHT 2

LEFT 2.5

RT 4.5 + LFT 4.2 = 8.7

## SAMPLES / DATA COLLECTED

☒ SEDIMENT ☒ CTD CAST ☒ GPS NAV FILE  
☐ SAND LANCE ☒ INVERTS ☐ GRAB STILL  
☐ VERT. / ☐ HORIZ PLNK. TOW ☐ NO INVERTS PRESENT

lobster trap line on seabed

|                   |  |                   |  | SEABED DESCRIPTION   |
|-------------------|--|-------------------|--|--|
| att epifauna      | herring eggs                                     | skate             |  | storm sand ripples <input checked="" type="checkbox"/> Y, <input type="checkbox"/> N                           |
| Boltenia tunic.   | lobster  | Suberites spg     |  | crests: <input type="checkbox"/> sharp <input checked="" type="checkbox"/> rounded                             |
| brachiopod        | monkfish   | squid             |  | <input type="checkbox"/> straight <input type="checkbox"/> multi-rippled                                       |
| bushy bry/hyd     | moon snail                                       |                   |  | grvl in ripple troughs <input type="checkbox"/> Y, <input type="checkbox"/> N                                  |
| cancer crab       | mussels  | tunicate, B pilu. |  | small ripples, [ <input type="checkbox"/> intermittent] <input type="checkbox"/> Y, <input type="checkbox"/> N |
| ceri burr anem    | ocean pout                                       | yellow encr. spg  |  | sand, unrippled <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| cod; cod juvenile |  |                   |  | sand partial veneer on gravel <input type="checkbox"/> Y, <input type="checkbox"/> N                           |
| ctenophores       | Polymastia spg                                   |                   |  | gravel pavement <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| coralline algae   | red encr. spg                                    |                   |  | boulders <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| cunner            | red hake   |                   |  | mud <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| dk yellow spg     | <input checked="" type="checkbox"/> sand dollars |                   |  | trawled/dredged shell frags <input type="checkbox"/> Y, <input type="checkbox"/> N                             |
| Didemnum cols     |  | shells/fragments  |  | trawl/dredge marks <input type="checkbox"/> Y, <input type="checkbox"/> N                                      |
| dogfish           |  |                   |  | sand lance in water column <input type="checkbox"/> Y, <input type="checkbox"/> N                              |
| finger spg        | scallops   |                   |  | sand lance on/in substrate <input type="checkbox"/> Y, <input type="checkbox"/> N                              |
| flounder          | sculpin  |                   |  | sand lance in sed sample <input checked="" type="checkbox"/> Y, <input type="checkbox"/> N                     |
| haddock           | sea stars  |                   |  | SL size: <input type="checkbox"/> sml <input checked="" type="checkbox"/> med <input type="checkbox"/> lg      |
| herring           |  |                   |  | SL nos: 1  |
|                   | silver hake                                      |                   |  |  |

AREA OF VAN VEEN GRAB = 0.1 SQ M; MAX DEPTH = 15 CM; VOLUME = 10.8 LITERS  
 DISTANCE BETWEEN PARALLEL LASERS = 20 CM

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SBNMS Site

USGS STATION

4729

SBNMS Site 527, CONSEC STA 55

|                               |  |                    |          |   |   |
|-------------------------------|--|--------------------|----------|---|---|
| CRUISE: USGS AUK2017044       |  | DAY OF MONTH LOCAL | JD LOCAL | <input checked="" type="checkbox"/> DAY | Sunset: Sep 11, 2017<br>1900 EDT = 2300 UTC |
| LOCATION: STELLWAGEN BANK NMS |  | SEP 14             | 257      | <input type="checkbox"/> NIGHT          |   |
| MONTH YEAR: SEPTEMBER 2017    |  | DAY OF MONTH UTC   | JD UTC   | VIDEO FWD                               | FILE  |
| LOCAL TIME: EDT               |  | SEP 14             | 257      | UPPER CAMERA 1                          | 056   |
|                               |  |                    |          | VIDEO FWD                               | FILE  |
|                               |  |                    |          | LOWER CAMERA 2                          | 1910  |

|               |                |                    |        |                |
|---------------|----------------|--------------------|--------|----------------|
| USGS STA 4730 | SBNMS SITE 528 | CONSECUTIVE STA 56 | QUAD 2 | VIDEO CLIP 410 |
|---------------|----------------|--------------------|--------|----------------|

|   |  |                |        |                            |                             |
|---|--|----------------|--------|----------------------------|-----------------------------|
| <input type="checkbox"/> STA LOC            | <input checked="" type="checkbox"/> VIDEO START  | HH MM SS LOCAL | DPH, m | 42 deg 9.900 min           | -70 deg 17.591 min          |
|   | <input checked="" type="checkbox"/> WATER COLUMN | 140540         | 21     | (nav file corr 9.8983 min) | (nav file corr 17.5789 min) |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO START             | HH MM SS LOCAL | DPH, m | 42 deg                     | -70 deg                     |
|   | <input checked="" type="checkbox"/> ON SEABED    | 140616         |        | (nav file corr 9.9082 min) | (nav file corr 17.5826 min) |
|   | <input type="checkbox"/> SMPL ATTEMPT            |                |        |                            |                             |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> SAMPLE ATTEMPT          | HH MM SS LOCAL | DPH, m | 42 deg                     | -70 deg                     |
|   |  |                |        | (nav file corr min)        | (nav file corr min)         |
| <input checked="" type="checkbox"/> STA LOC | <input checked="" type="checkbox"/> SMPL ATTEMPT | HH MM SS LOCAL | DPH, m | 42 deg 9.918 min           | -70 deg 17.593 min          |
|   | <input checked="" type="checkbox"/> VIDEO END    | 140656         |        | (nav file corr 9.9173 min) | (nav file corr 17.5896 min) |
|   | <input checked="" type="checkbox"/> OFF SEABED   |                |        |                            |                             |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO END               | HH MM SS LOCAL | DPH, m | 42 deg                     | -70 deg                     |
|   |  |                |        | (nav file corr min)        | (nav file corr min)         |

UTC = EDT + 4 HRS, EST + 5 HRS

STATION DATE AND TIME, UTC

DDD : HH : MM : SS  
257 18 06 56

☐ NO SEDIMENT SAMPLE: ☐ pre-tripped; ☐ no smpl attempted; ☐ jaws partly open; ☐ washout; ☐ refusal;  
☐ too gravelly/shelly; ☐ smpl too small; ☐ grvl in jaws;

DPH TO SED SURF IN GRAB, cm  
RIGHT 1.5, LEFT 1

SED VOL IN GRAB, liters

RT 4.7 + LFT 4.9 = 9.6

## SAMPLES / DATA COLLECTED

☒ SEDIMENT ☒ CTD CAST ☒ GPS NAV FILE  
☒ SAND LANCE ☒ INVERTS ☒ GRAB STILL  
☐ VERT. / ☐ HORIZ PLNK. TOW ☐ NO INVERTS PRESENT

| att epifauna      | herring eggs                                     | skate             | SEABED DESCRIPTION   |
|-------------------|--|-------------------|--|
| Boltenia tunic.   | lobster  | Suberites spg     | storm sand ripples <input checked="" type="checkbox"/> Y, <input type="checkbox"/> N                                 |
| brachiopod        | monkfish   | squid             | crests: <input type="checkbox"/> sharp <input checked="" type="checkbox"/> rounded                                   |
| bushy bry/hyd     | moon snail                                       |                   | <input type="checkbox"/> straight <input type="checkbox"/> multi-rippled   |
| cancer crab       | mussels  | tunicate, B pilu. | gvl in ripple troughs <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| ceri burr anem    | ocean pout                                       | yellow encr. spg  | small ripples, [ <input type="checkbox"/> intermittent] <input type="checkbox"/> Y, <input type="checkbox"/> N       |
| cod; cod juvenile |  |                   | sand, unrippled <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| ctenophores       | Polymastia spg                                   |                   | sand partial veneer on gravel <input type="checkbox"/> Y, <input type="checkbox"/> N                                 |
| coralline algae   | red encr. spg                                    |                   | gravel pavement <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| cunner            | red hake   |                   | boulders <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| dk yellow spg     | <input checked="" type="checkbox"/> sand dollars |                   | mud <input type="checkbox"/> Y, <input type="checkbox"/> N   |
| Didemnum cols     |  | shells/fragments  | trawled/dredged shell frags <input type="checkbox"/> Y, <input type="checkbox"/> N                                   |
| dogfish           |  |                   | trawl/dredge marks <input type="checkbox"/> Y, <input type="checkbox"/> N  |
| finger spg        | scallops   |                   | sand lance in water column <input type="checkbox"/> Y, <input checked="" type="checkbox"/> N                         |
| flounder          | sculpin  |                   | sand lance on/in substrate <input type="checkbox"/> Y, <input checked="" type="checkbox"/> N                         |
| haddock           | sea stars  |                   | sand lance in sed sample <input checked="" type="checkbox"/> Y, <input type="checkbox"/> N                           |
| herring           |  |                   | SL size: <input type="checkbox"/> sml <input checked="" type="checkbox"/> med <input checked="" type="checkbox"/> lg |
|                   | silver hake                                      |                   | SL nos: 6+   |

AREA OF VAN VEEN GRAB = 0.1 SQ M, MAX DEPTH = 15 CM, VOLUME = 10.8 LITERS  
DISTANCE BETWEEN PARALLEL LASERS = 20 CM

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SBNMS Site

USGS STATION

CONSEC STA



|   |  |                    |          |   |   |
|---|--|--------------------|----------|---|---|
| CRUISE: USGS AUK2017044                     |  | DAY OF MONTH LOCAL | JD LOCAL | <input checked="" type="checkbox"/> DAY | Sunset: Sep 11, 2017<br>1900 EDT = 2300 UTC |
| LOCATION: STELLWAGEN BANK NMS               |  | SEP 14             | 257      | <input type="checkbox"/> NIGHT          |   |
| MONTH YEAR: SEPTEMBER 2017                  |  | DAY OF MONTH UTC   | JD UTC   | VIDEO FWD                               | FILE  |
| LOCAL TIME: EDT                             |  | SEP 14             | 257      | UPPER CAMERA 1                          | 057   |
|   |  |                    |          | VIDEO FWD                               | FILE  |
|   |  |                    |          | LOWER CAMERA 2                          | 1911  |
| USGS STA 4731                               | SBNMS SITE 528                                   | CONSECUTIVE STA 57 | QUAD 2   | VIDEO CLIP 411                          |   |
| <input type="checkbox"/> STA LOC            | <input checked="" type="checkbox"/> VIDEO START  | HH MM SS LOCAL     | DPH, m   | 42 deg 9.952 min                        | -70 deg 17.555 min                          |
|   | <input checked="" type="checkbox"/> WATER COLUMN | 142030             | 21       | (nav file corr 9.9499 min)              | (nav file corr 17.5535 min)                 |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO START             | HH MM SS LOCAL     | DPH, m   | 42 deg min                              | -70 deg min                                 |
|   | <input checked="" type="checkbox"/> ON SEABED    | 142110             |          | (nav file corr 9.9605 min)              | (nav file corr 17.5563 min)                 |
|   | <input type="checkbox"/> SMPL ATTEMPT            |                    |          |   |   |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> SAMPLE ATTEMPT          | HH MM SS LOCAL     | DPH, m   | 42 deg min                              | -70 deg min                                 |
|   |  |                    |          | (nav file corr min)                     | (nav file corr min)                         |
| <input checked="" type="checkbox"/> STA LOC | <input checked="" type="checkbox"/> SMPL ATTEMPT | HH MM SS LOCAL     | DPH, m   | 42 deg 9.967 min                        | -70 deg 17.565 min                          |
|   | <input checked="" type="checkbox"/> VIDEO END    | 142144             |          | (nav file corr 9.9662 min)              | (nav file corr 17.5623 min)                 |
|   | <input checked="" type="checkbox"/> OFF SEABED   |                    |          |   |   |
| <input type="checkbox"/> STA LOC            | <input type="checkbox"/> VIDEO END               | HH MM SS LOCAL     | DPH, m   | 42 deg min                              | -70 deg min                                 |
|   |  |                    |          | (nav file corr min)                     | (nav file corr min)                         |

UTC = EDT + 4 HRS, EST + 5 HRS

STATION DATE AND TIME, UTC

DDD : HH : MM : SS  
257 18 2144

☐ NO SEDIMENT SAMPLE: ☐ pre-tripped; ☐ no smpl attempted; ☐ jaws partly open; ☐ washout; ☐ refusal;  
☐ too gravelly/shelly; ☐ smpl too small; ☐ grvl in jaws;

DPH TO SED SURF IN GRAB, cm

SED VOL IN GRAB, liters

RIGHT 2 LEFT 3

RT 4.5 + LFT 4.0 = 8.5

#### SAMPLES / DATA COLLECTED

☒ SEDIMENT ☒ CTD CAST ☒ GPS NAV FILE  
☒ SAND LANCE ☒ INVERTS ☒ GRAB STILLs  
☐ VERT. / ☐ HORIZ PLNK. TOW ☒ NO INVERTS PRESENT

|                   |                |                   |  | SEABED DESCRIPTION  |
|-------------------|----------------|-------------------|--|---|
| att epifauna      | herring eggs   | skate             |  |   |
| Boltenia tunic.   | lobster        | Suberites spg     | storm sand ripples   | <input checked="" type="checkbox"/> Y, <input type="checkbox"/> N |
| brachiopod        | monkfish       | squid             | crests: <input type="checkbox"/> sharp <input checked="" type="checkbox"/> rounded                       |   |
| bushy bry/hyd     | moon snail     |                   | <input type="checkbox"/> straight <input type="checkbox"/> multi-rippled                                 |   |
| cancer crab       | mussels        | tunicate, B pilu. | gvl in ripple troughs  | <input type="checkbox"/> Y, <input type="checkbox"/> N            |
| ceri burr anem    | ocean pout     | yellow encr. spg  | small ripples, [ <input type="checkbox"/> intermittent]  | <input type="checkbox"/> Y, <input type="checkbox"/> N            |
| cod; cod juvenile |                |                   | sand, unrippled  | <input type="checkbox"/> Y, <input type="checkbox"/> N            |
| ctenophores       | Polymastia spg |                   | sand partial veneer on gravel  | <input type="checkbox"/> Y, <input type="checkbox"/> N            |
| coralline algae   | red encr. spg  |                   | gravel pavement  | <input type="checkbox"/> Y, <input type="checkbox"/> N            |
| cunner            | red hake       |                   | boulders   | <input type="checkbox"/> Y, <input type="checkbox"/> N            |
| dk yellow spg     | sand dollars   |                   | mud  | <input type="checkbox"/> Y, <input type="checkbox"/> N            |
| Didemnum cols     |                | shells/fragments  | trawled/dredged shell frags  | <input type="checkbox"/> Y, <input type="checkbox"/> N            |
| dogfish           |                |                   | trawl/dredge marks   | <input type="checkbox"/> Y, <input type="checkbox"/> N            |
| finger spg        | scallops       |                   | sand lance in water column   | <input type="checkbox"/> Y, <input checked="" type="checkbox"/> N |
| flounder          | sculpin        |                   | sand lance on/in substrate   | <input type="checkbox"/> Y, <input checked="" type="checkbox"/> N |
| haddock           | sea stars      |                   | sand lance in sed sample   | <input checked="" type="checkbox"/> Y, <input type="checkbox"/> N |
| herring           |                |                   | SL size: <input type="checkbox"/> sm <input checked="" type="checkbox"/> med <input type="checkbox"/> lg |   |
|                   | silver hake    |                   | SL nos: 3 + 2 parts  |   |

AREA OF VAN VEEN GRAB = 0.1 SQ M; MAX DEPTH = 15 CM; VOLUME = 10.8 LITERS

DISTANCE BETWEEN PARALLEL LASERS = 20 CM

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SBNMS Site 528, CONSEC STA 57