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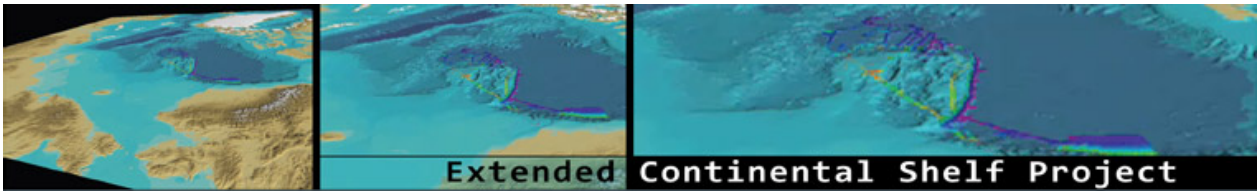
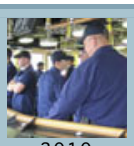
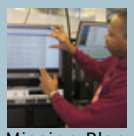


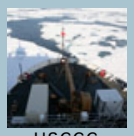
Arctic Seafloor Mapping Project Web Site - arcticseafloormapping.gov

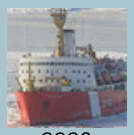

2010 Mission


Mission Plan

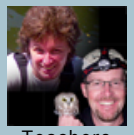

Law of the Sea


Continental Shelf


USCGC *Healy*


CCGS *Louis S. St-Laurent*


Healy's Science Team


Teachers

Photos of the Day

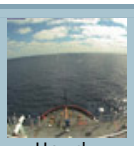
Jul 31 | Aug 1 | Aug 9 | Aug 11 | Aug 12 | Aug 14 | Aug 15
Aug 16 | Aug 17 | Aug 21 | Aug 23 | Aug 25 | Aug 26 | Aug 29
Aug 31 | Sep 1 | Sep 2 | Sep 3 | Sep 4 | Sep 5

Photos taken during the 2010 Extended Continental Shelf mission that provide a glimpse of activities and events in addition to those contained in the logs....

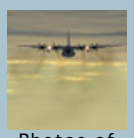
September 6, 2010
Homeward Bound

Community Observer Ralph Kaleak (Barrow Arctic Science Consortium) in the helicopter. Most of us will travel for a couple of days to get home, but Ralph, who lives in Barrow, will be reunited with his family very soon. Credit: Helen Gibbons, USGS/ECS Project.

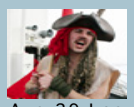
Waiting for an evening flight, we take advantage of the fine weather to explore Barrow. On a bluff overlooking the beach, we enjoy the view of *Healy* at anchor. Credit: Helen Gibbons, USGS/ECS Project.


Hourly Photos from *Healy's* Aloft Conn


USCG Logs


Photos of the Day

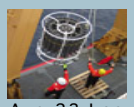

Sep 05 Log

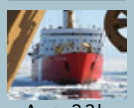

Aug 29 Log

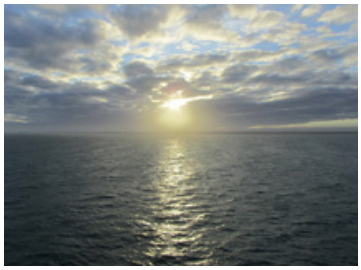

Aug 28 Log


Aug 25 Log


Aug 24 Log


Aug 23 Log


Aug 22b Log



Sunrise over Barrow, Alaska, about 0815 Alaska Daylight Time. Fair weather and calm seas bode well for our helicopter transfers from *Healy* to shore. **Credit**: Helen Gibbons, USGS/ECS Project.

The helicopter is carrying members of the next science party plus gear and fresh food back to *Healy*. It will make many trips back and forth today. **Credit**: Helen Gibbons, USGS/ECS Project.

A high point was our visit to the Iñupiat Cultural Center, where we saw beautiful artwork, such as this piece carved from mammoth tusk by Forrest J. Ahvakana, titled "Fall Time Family Fishing at Qaviarat." **Credit**: Helen Gibbons, USGS/ECS Project.

Back to the beach in the evening; it's hard to believe we're on the Arctic Ocean. **Credit**: Helen Gibbons, USGS/ECS Project.

One more view of *Healy*, silhouetted against the evening sky. It's been a fine trip! **Credit**: Helen Gibbons, USGS/ECS Project.

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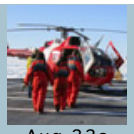
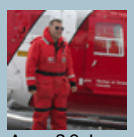
September 5, 2010

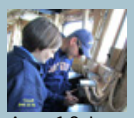
Final Cleaning Day

Credit: Helen Gibbons, USGS/ECS Project.

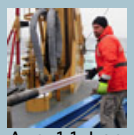

Aug 22a Log

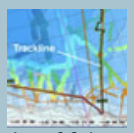

Aug 21 Log

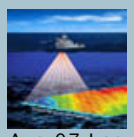

Aug 20 Log

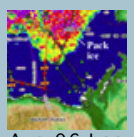

Aug 18 Log


Aug 17 Log

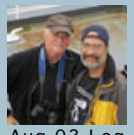

Aug 11 Log


Aug 08 Log


Aug 07 Log


Aug 06 Log


Aug 04 Log


Aug 03 Log

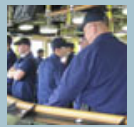


Photo Log

Chief Scientist Brian Edwards (USGS) pauses for a photo while swabbing the deck in the Computer Lab. Tomorrow we will disembark and turn our spaces over to a new science party.

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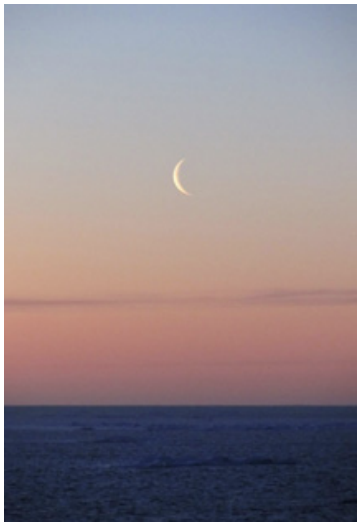
September 4, 2010

Reunion with an Old Friend.

Just after sunset, I saw a faint crescent in the northwest. I went back on deck about an hour and a half later and took this photo of the moon—nearly as high as it had been at sunset and a little easier to see in the darkening sky. Photo taken at 2253 hrs Alaska Daylight Time on September 4, about 300 nautical miles northeast of Barrow, at approximate latitude 74°42'N.



Credit: Helen Gibbons, USGS/ECS Project.

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September 3, 2010

Farewell to Our Canadian Friends

This evening, the helicopter from *Louis* made the final transfer of personnel between the two ships. Coming over from *Louis* were U.S. Liaison Jon Childs (USGS), Operations Technical Advisor Caryn Panowicz (National Ice Center), and LT Charlene Criss (U.S. Coast Guard). Returning to *Louis* on the flight pictured here were Canadian Liaison Captain Michel Bourdeau (Canadian Coast Guard), Ice Services Specialist Erin Clark (Canadian Ice Service), and hydrographer David Street (Canadian Hydrographic Service). *Healy* will continue breaking ice for *Louis* until it's time to head for Barrow, where the next science party awaits.

Credit: Helen Gibbons, USGS/ECS Project.

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September 2, 2010

Flyover by the USCG Vice Commandant

Credit: Helen Gibbons, USGS/ECS Project.

Credit: Helen Gibbons, USGS/ECS Project.

Credit: Helen Gibbons, USGS/ECS Project.

A C-130 carrying Vice Admiral Sally Brice-O'Hara, the Vice Commandant of the U.S. Coast Guard, flew around *Healy* twice tonight at about 1845 hrs Pacific Daylight Time. The plane was flying an Arctic Domain Awareness mission along the north coast of Alaska and made the extra hop to greet the *Healy*. The Vice Commandant and Alice Hill—Principal for Deputy Secretary of Homeland Security Jane Holl Lute—spoke with *Healy's* Captain William Rall by radio, sending greetings and words of appreciation to all aboard.

Credit: Helen Gibbons, USGS/ECS Project.

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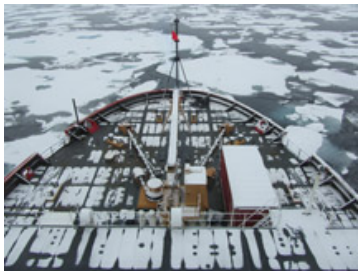
September 1, 2010

More Snow, and a Polar Bear



The light, wet snow that began yesterday continues to fall. **Credit**: Helen Gibbons, USGS/ECS Project.

At around 1115 hours Pacific Daylight Time, as many of us were sitting down to lunch, the bridge announced a polar bear about 600 yards off the port bow. Here it is, seen through the snow. Not as energetic as the bear we saw on August 9, this bear watched the ship go by... **Credit**: Helen Gibbons, USGS/ECS Project.

...and then settled down to rest on its stomach, folding its front legs under its chest like a cat. **Credit**: Helen Gibbons, USGS/ECS Project.

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August 31, 2010

It's Snowing!

It's about 0845 hours Pacific Daylight Time at latitude 75°35'N, longitude 140°06'W (about 350 nautical miles north of the northeast corner of Alaska), and a light, wet snow is falling. With the air temperature above freezing (1.5°C, 34.7°F), most of the snow is melting when it hits the ship, but some has accumulated on cold surfaces—such as these buoys

A sprinkling of snow remains unmelted on the track beneath the piston corer we are about to deploy. **Credit**: Helen Gibbons, USGS/ECS Project.

stored on the stern. **Credit:** Helen Gibbons, USGS/ECS Project.

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August 29, 2010
Captain Davey Jones

About a week and a half ago, a tall fellow who calls himself Captain Davey Jones suddenly appeared on the ship, his purpose to guide the “Blue Noses” (sailors who have crossed the Arctic Circle for the first time) through initiation as “Polar Bears.” He’s been insulting us, giving us impossible orders, and generally making our lives—well, “miserable” might be too strong a word; let’s say “suspenseful.”

Captain Davey Jones (a.k.a FS3 Tysin Alley). **Credit:** MK2 Chris Schumacher, U.S. Coast Guard.

Captain Jones and his Wench give a Blue Nose one of many challenging assignments. **Credit:** MK2 Chris Schumacher, U.S. Coast Guard.

Captain Jones’ Wench (a.k.a. SN Beth Hildebrand). **Credit:** MK2 Chris Schumacher, U.S. Coast Guard.

Captain Jones trains Blue Noses for their initiation as Polar Bears. **Credit:** MK2 Chris Schumacher, U.S. Coast Guard.

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August 26, 2010

A Little Night Music

Credit: Helen Gibbons, USGS/ECS Project.

The geochemists aboard *Healy* are among the busiest people on the ship, but they still manage to find time to relax. Here is University of South Florida graduate student Mark Patsavas composing music between analyzing seawater samples. (Read about the chemists' ocean acidification study in the August 25 log.)

Download a short clip of Mark's music - MPEG 4 format.

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August 25, 2010

Sun Dogs

Sun dogs. These bright spots on either side of the sun are caused by refraction of sunlight by ice crystals in the atmosphere. Notice the faint rainbow colors, with red closest to the sun. Photo taken at 0844 hrs Pacific Daylight Time, at approximately 81°34'N, 134°32'W.

Credit: Helen Gibbons, USGS/ECS Project.

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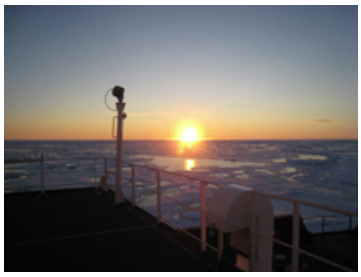
August 23, 2010

Midnight Sun



Credit: Jerry Hyman, National Geospatial-Intelligence Agency.

This photo was taken at local midnight, just before 0300 PDT on August 23, the first day of our trip on which the sun did not set. Taken at approx latitude 78°42'N, longitude 147°50'W.

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August 21, 2010

Bingo Night!

Every Saturday night, *Healy's* Morale Committee sponsors a Bingo fundraiser. BM2 Jerry "Banana" McCann is tonight's caller. **Credit**: Helen Gibbons, USGS/ECS Project

After some prize swapping, ET2 Jeremy Gainey is the proud owner of a Sponge Bob fishing pole. **Credit**: Helen Gibbons, USGS/ECS Project

ET2 Gainey said he was going to catch a halibut, but he seems to be reeling in SN Beth Hildebrand. **Credit**: Helen Gibbons, USGS/ECS Project

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August 17, 2010

Back in the ice.

Winds have pushed ice floes into a densely packed zone at the outer edge of the ice pack. Photo taken at 1148 hrs (Pacific Daylight Time) at approximate latitude 73°26', longitude -150°50'.

Credit: Helen Gibbons, USGS/ECS Project

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August 16, 2010

Training of Opportunity

On this day we were off Barrow, Alaska, to pick up a new crewman and spare fuel filters for *Louis*, thereby allowing *Louis* to continue seismic-reflection profiling, which is a priority for this mission. In the late morning, the Coast Guard took advantage of this opportunity to practice launching its Arctic Survey Boat (ASB) from the ship and landing it on the beach.

The ASB was lowered by crane from *Healy's* 02 deck to a spot level with the 01 deck, where the crew—a coxswain (the driver), crewman, small-boat engineer, and additional Coasties learning these positions—climbed aboard. Credit: Helen Gibbons, USGS/ECS Project

Which way is forward? This is a view of the bow (lower left), which hinges out and down to form a ramp from the boat onto the beach. Credit: Helen Gibbons, USGS/ECS Project

Soon the ASB was headed for Barrow, where *Louis's* new crewman was waiting. A smaller boat was sent to Barrow later that evening to pick up the fuel filters that had just arrived on a flight from Anchorage. Credit: Helen Gibbons, USGS/ECS Project

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August 15, 2010

August 15 was a quiet day on *Healy*, so I am borrowing photos from August 14, when we saw a couple of fogbows. According to *The American Practical Navigator, An Epitome of Navigation*, originally by Nathaniel Bowditch (2002 Bicentennial Edition, National Imagery and Mapping Agency, Bethesda, Maryland), "A faint, white arc of about 39° radius is occasionally seen in fog opposite the Sun. This is called a fogbow...."

I took this photo shortly after 1300 hrs on August 14. The sun was relatively high in the sky, and so I could fit the whole bow in one frame. You can see the faint colors of the rainbow, with red on the outside and indigo on the

inside. **Credit**: Helen Gibbons, USGS/ECS Project

Another fogbow appeared in the late evening. I shot this photo at about 2015 hrs on August 14. The sun was lower in the sky, and the fogbow was higher; I couldn't fit the whole arc in one frame. Here are views of the left side... **Credit**: Helen Gibbons, USGS/ECS Project

...and the right side. **Credit**: Helen Gibbons, USGS/ECS Project

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August 14, 2010

We've been breaking ice ahead of the Canadian Coast Guard Ship *Louis S. St-Laurent* (*Louis*) since Friday morning to give her a clear path for towing her seismic-reflection gear, but we didn't get a good look at her until today. Here she is in the early afternoon, emerging from the thinning fog. **Credit**: Helen Gibbons, USGS/ECS Project

The sun comes out just after *Healy* has made a turn onto a new trackline. As *Louis* turns to follow us, we get a good view of her port side. Just forward of the white stripe, you can see white bubbles foaming along *Louis's* hull. *Louis* generates these bubbles below the waterline on either side of the hull to reduce friction during icebreaking, a strategy that *Healy* does not use. **Credit**: Helen Gibbons, USGS/ECS Project

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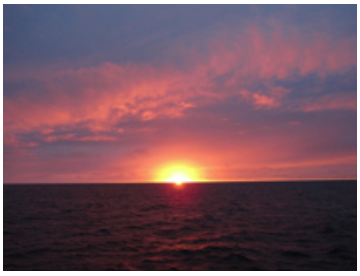
August 12, 2010



The sun set about half an hour after midnight this morning while we were transiting between coring stations—about 130 km north of Alaska's northeast coast. **Credit:** Caroline Singler, NOAA Teacher at Sea.

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August 11, 2010

Mud, Glorious, Mud—and Gas Hydrate! Our First Day of Sampling. *See more photos in the August 11 Log!*

Chief Scientist Brian Edwards always has a ready smile, but he had extra reason to be gleeful on August 11. By the end of our first sampling day (actually by about 6 a.m. the next morning), he was batting 1000, having recovered core samples of the seafloor on three out of three tries: a gravity core followed by two piston cores. **Credit:** Helen Gibbons, USGS/ECS Project

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The star of the show was a chunk of gas hydrate at the bottom of the first piston core, collected from the seafloor at about 2,550-m water depth. Gas hydrate looks like water ice but is actually made up of water cages that enclose gas molecules, usually methane. Gas hydrate is stable at relatively low temperatures and moderate pressures like those beneath the seafloor at the coring site. At the surface, gas hydrate is not stable and breaks down (dissociates) into water and gas. Gas hydrate is sometimes called the "ice that burns" because it will sustain a flame as the gas molecules are released. Learn more at the USGS Gas Hydrates Project Web site. **Credit:** Helen Gibbons, USGS/ECS Project

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August 9, 2010

Polar bear! The fourth to be spotted on the trip, and the first that could be seen easily

A watchstander on the bridge radioed LTJG Chris Skapin in the Aft Conn (a room for

with the naked eye. We saw this one shortly after noon (Alaska Daylight Time) while we were stopped for a few hours to collect CTD (conductivity/ temperature/depth) data and water samples. **Credit:** Helen Gibbons, USGS/ECS Project

The bear made its way slowly toward the ship, jumping across narrow leads and wading into the water to swim across wide ones. It stopped every once in a while to look up and sniff the air.
Credit: Helen Gibbons, USGS/ECS Project

controlling the ship from the stern) to find out if the stern was in contact with the ice. Apparently bears have been known to climb up onto vessels. This bear did not come much closer than about 100 yards. **Credit:** Helen Gibbons, USGS/ECS Project

Community Observer Ralph Kaleak (Barrow Arctic Science Consortium) estimated the bear's length at 6-7 feet and its weight at 400+ pounds. Gradually it wandered out of sight beyond our stern. **Credit:** Helen Gibbons, USGS/ECS Project

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August 1, 2010

Andy Stevenson (second from right) has sailed out of Dutch Harbor many times on U.S. Geological Survey research cruises. He gave us an informal walking tour of Unalaska. Left to right: Pablo Clemente-Colón (National Ice Center), Caroline Singler (NOAA Teacher at Sea), Andy, and Jerry Hyman (National Geospatial-Intelligence Agency).
Credit: Helen Gibbons, USGS/ECS Project

Nearly at the top of Mount Ballyhoo, with a partial view of Dutch Harbor below. My legs ached for days, especially going down *Healy's* steep ladders, but it was worth it!
Credit: Peter Triezenberg, USGS.

Unalaska is full of bald eagles. Here's one perched on the Russian Orthodox Church of the Holy Ascension, built in 1825.

Fireweed in Dutch Harbor. **Credit:** Helen Gibbons, USGS/ECS Project

Credit: Helen Gibbons, USGS/ECS Project

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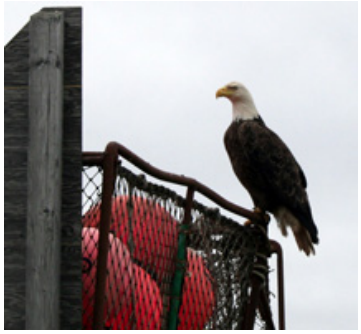
July 31, 2010

Dutch Harbor and Unalaska



Bald eagle perched on a crab pot in Dutch Harbor. **Credit:** MK2 Chris Schumacher, USCGC *Healy*.

Some of *Healy's* crew enjoy a flag football game in Unalaska. Left to right: SN Bethany Hildebrand, ET2 Jeremy Gainey, SK1 Mark Morgan, and MK2 Chris Schumacher. **Credit:** Jean Dominguez.

Nice catch! Left to right: CDR John Reeves, DC3 Matthew Yosting, DC2 Montarno Mandrie, and ET2 Jeremy Gainey (with the ball). **Credit:** Jean Dominguez.

Captain William Rall about to carry the ball in for a touchdown. In hot pursuit are (left to right) CDR John Reeves, MK2 Chris Schumacher, and SK1 Mark Morgan. **Credit**: Jean Dominguez.
