"Science Education Asea" follows the events of scientists onboard the R/V Melville.

The SEA Times

Current Location
Latitude 48' 29. 34" N
Longitude -124' 41.97" W

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ECOHAB-Pacific Northwest Research Cruise Departs Elliot Bay

BY DEBORAH MCARTHUR

Pier 66 – The downtown Seattle waterfront bustles with summer activity. The Space Needle elevator zooms up and down. Hawaiian shirts parade through Pike Place Market. The double-decker highway roars with traffic against a backdrop of crooked zipper skyscrapers.

The R/V Melville stands proud, tied to the dock with wrist-thick lines. This sleek, 2,516-ton research vessel -- nearly as long as the Qwest football stadium -- awaits its next assignment - a 3-week voyage to the open Pacific.

ECOHAB-PNW scientists are interested in one of the species that can be harmful, a diatom of the genus Pseudo-nitzschia.

This voyage hosts the scientists of ECOHAB-Pacific Northwest (ECOHAB-PNW), a group of international researchers brought together for a 5-year study of the Northwest waters. ECOHAB-PNW scientists come from as far away as Western Ontario, Canada and Maine, California's San Francisco State University and the University of California, Santa Cruz, and join Seattle-based scientists from NOAA's Northwest Fisheries Science Center and the University of Washington.

The name ECOHAB stands for "ecology" – the science of the relationships between organisms and their environments – "oceanography" and "harmful algal bloom," or the popular acronym HAB. Several different species of algae can produce chemicals that can be harmful to humans and wildlife when they "bloom," or grow rapidly. ECOHAB-PNW scientists are interested in one of the species that can be harmful, a diatom of the genus *Pseudo-nitzschia.*

The *Pseudo-nitzschia* algae can produce a chemical that acts as a neurotoxin – it affects nerve cells, specifically those in the brain. Animals may act disoriented as the toxin affects their behavior. Blooms of *Pseudo-nitzschia* have affected marine birds, including an event with birds acting disoriented and flying into windows that may have inspired Alfred Hitchcocks thriller, "*The Birds*". Cormorants, brown pelicans and California sea lions have died after these bloom periods.

Humans can also be affected by *Pseudo-nitzschia* blooms. The harmful algae can accumulate in clams and crab and the toxin passes to humans by eating seafood. Too much of the toxin can cause a condition called Amnesic Shellfish Poisoning (ASP). This condition can cause short-term memory loss that may be permanent.

Several ECOHAB-PNW scientists loading the ship are wearing navy blue shirts with "What's blooming?" printed on the back. The research team has three weeks traveling along of the Washington and British Columbia coasts, testing the waters and collecting data to come closer to understanding what is blooming and why.

Melville sounds its horn with one long blast announcing the ship's departure and the start of an important research voyage that promises to provide key understanding of the connection between the oceans and our health.

Educator Stows Away

BY DEBORAH MCARTHUR

Seattle,WA - Sunglasses hold back strands of wispy blonde hair. Deborah McArthur stares up at the solid ship, "This is the real Cousteau," she says with a twinkle in her eye, shoveling down the last of her Ivar's clam chowder. "The open sea is calling. Let's go Melville!"

Deborah grew up on the west coast, staring longingly through Los Angeles smog at the Pacific Ocean. "Occasionally it would be clear enough to see Catalina Island 25-miles off-shore," she says. "My mother always told me to look for the green flash at sunset. It took me 22-years to finally see it on a cool, cloudless autumn horizon – not in L.A."

The ECOHAB research cruise welcomes Deb to the decks of the Melville. She coordinates education activities at NOAA's Northwest Fisheries Science Center and the West Coast Center for Oceans and Human Health. She's excited to document the dynamic science of this voyage and the rhythm of life at sea.

"I'm on a life-long quest for knowledge and adventure," she says. "These experiences produce stories that are like pearls I can share with young people."

We asked Deborah what she expects will be the best part of the cruise: "I'm bringing a bag of cookies and a chocolate bar for each day of the trip. The farther you get from a store, the better they taste! And I can't wait to see the diversity of phytoplankton that's out there!"

ECOHAB PNW is a 5-year multi-disciplinary project that is studying the physiology, toxicology, ecology and oceanography of toxic Pseudo-nitzschia *species off the Pacific Northwest coast. For more information, visit the ECOHAB-PNW website at: http://www.ecohabpnw.org.*

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