

PlateWatch

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“If there is magic on this planet it is contained in water ”

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Didemnum vexillum from
Whiting Harbor in Sitka,
Alaska. Photo: Kim Holzer



Tunicate Spotting - New Botryllid records for Alaska

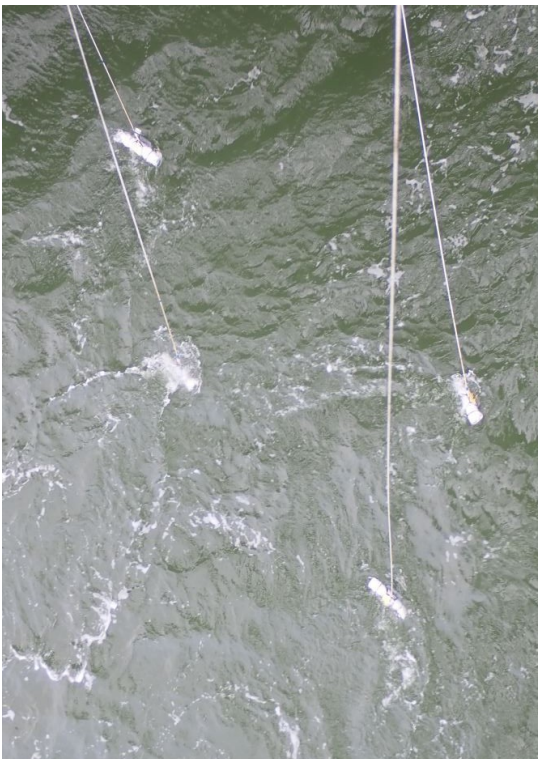
In our search for non-natives species, one of the first marine non-native invertebrate groups SERC scientists encountered in Alaska were tunicates. Many tunicate species seem to do well in harbors and embayments. There are several possible reasons for this—enrichment through pollution and run off could provide additional food, reduced wave action may encourage settlement and growth, man-made structures provide an abundance of hard surface area on which to settle and boats provide a means for them to move around. This year we recorded non-native Botryllid tunicates at 3 new sites, *Botryllus schlosseri* at Dora Bay, and *Botrylloides violaceus* at Hoonah, and Metlakatla. Back in 2010 Gary Freitag photographed *Botrylloides violaceus* on a mussel in Metlakatla so this confirms its establishment there and brings the total number of sites in Southeast with Botryllid tunicates to five (both species are also present in Sitka and Ketchikan)!



From Left to Right: *Botrylloides violaceus* in Metlakatla, in Hoonah, and *Botryllus schlosseri* in Dora Bay. Photos by Taylor Stumpf, Sean Williams, and Gary Freitag respectively.

New Sites in the Far North —

This year, despite all the uncertainty the pandemic threw at us, we welcomed three new sites to Plate Watch invasive species monitoring in Alaska—Metlakatla, Adak and Red Dog Mine. Metlakatla is on Annette Island across the channel from Ketchikan in Southeast. The other two sites are in the Aleutians and Arctic, respectively. Adak is an island far out the Aleutian chain and Red Dog is on the Chukchi Sea. Both are extremely remote sites with limited access. The access at both sites is by tall, fixed docks that do not move up and down with the tides, meaning that it can be a big drop to the water! Despite the height, the staff at Red Dog was able to suspend their plates from the dock with extremely long lines (5 meters or more, photo 1 and 2). The next challenge was what to use for weights since bricks



Photos top and bottom left: Lines many meters long extending from the dock to the water at Red Dog Mine. Bottom right: Bags of gravel cable tied to the plates before they are deployed to weigh them down in the water. Photos: Red Dog staff.

Challenges to Monitoring

were not available. No problem that bags of gravel couldn't solve! At Adak, Lisa Spitler with the Alaska Maritime National Wildlife Refuge, located an alternative deployment site in the form of some old pipes. They were closer to the water line, but were not accessible from land (photos below). That problem was solved by kayaking out to the site. Plates were also hung on long lines from the dock for comparison (Photo below). Creative thinking at both sites saved the day!

Photo right: Old pipes and dock where plates were deployed in Adak this summer. Photo below left: Deploying from the dock (in the Background in photo on right). Photos Lisa Spitler



Photo Right: Lisa's son poses next to the kayak he used to help retrieve and deploy the plates. The line holding the plates was tied between the 2 pipes to his left. Photos: Lisa Spitler



Invasives as Art

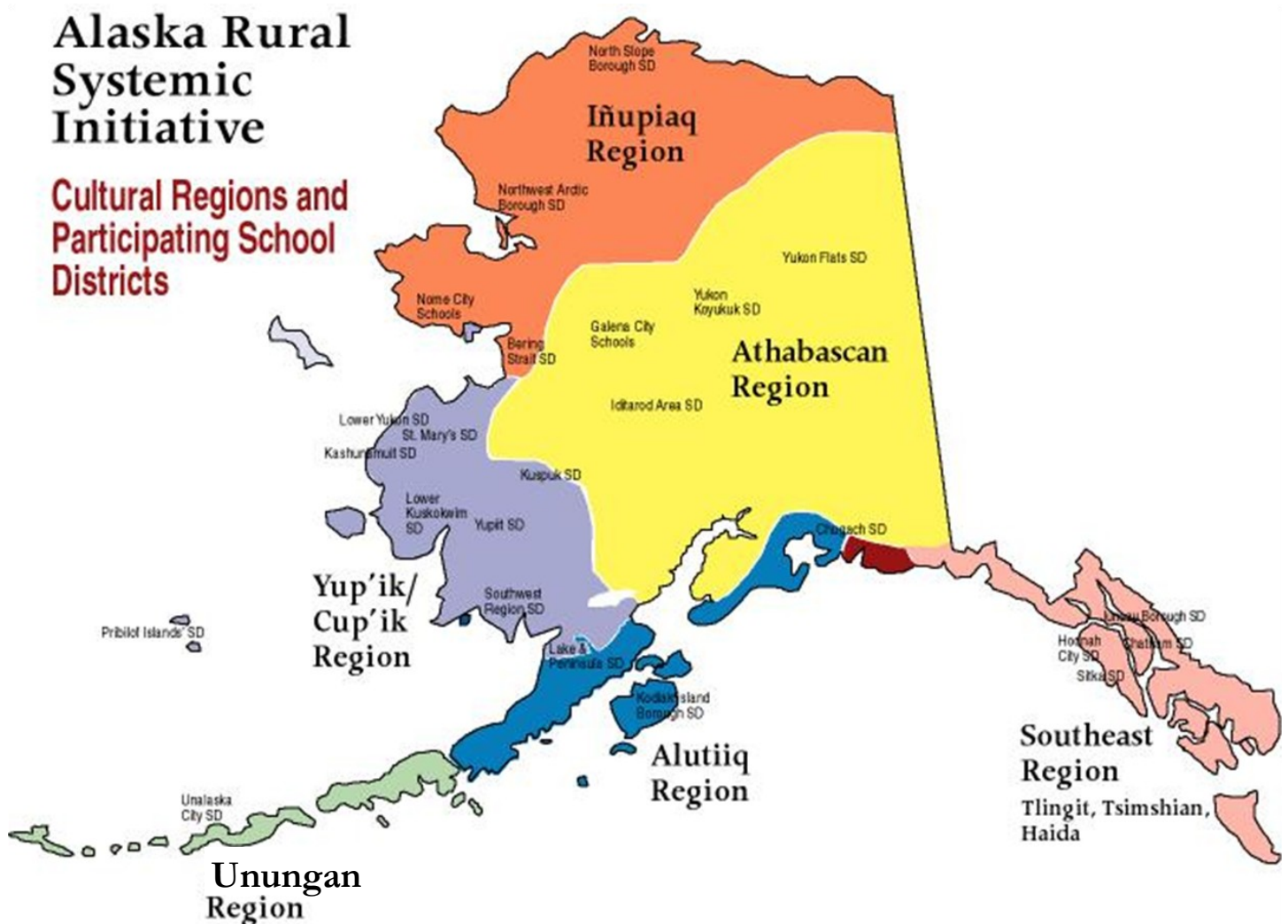


What could be more beautiful than a non-native Botryllid tunicate or one of its predators, a leather sea star? These photos are all from monitoring activities in Alaska and British Columbia.

Photos from top left clockwise: The non-native star tunicate *Botryllus schlosseri* in Sitka; a native sea star *Dermasterias imbricata* in Ketchikan eating invertebrates on a plate; the non-native tunicate *Botrylloides violaceus* (white) in Haida Gwaii, British Columbia; *B. violaceus* (orange) in Ketchikan; and *Botrylloides violaceus* (pink), the native tunicate *Corella inflata* (transparent) and native bryozoan *Bugulina californica* (tree-like) also from Haida Gwaii. All from plate photos. Photo credits in same order: Marnie Chapman University of Alaska Sitka, Temple University students, Steward Crawford, Haida Nation (both pink and white *Botrylloides violaceus* tunicates) and Gary Freitag, AK Sea Grant, Professor emeritus.

Engaging Local Communities

Plate Watch is grateful for our partnerships with so many diverse communities in localities all over Alaska. In addition to the goal of monitoring for non-native species and providing an early warning system for newly arriving marine non-native invertebrates, Plate Watch strives to work with local communities to share knowledge of potentially invasive species that may impact them. We are honoured and grateful to conduct research on the lands and waters of the local Indigenous communities of Alaska including the Tlingit, Tsimshian, Haida, Yupik and Eyak of Southeast, the Alutiiq and Athabascan of the Peninsula and Prince William Sound, the Unungan of the Aleutian chain and Bering Sea, and the Iñupiat of the Arctic. Our Tribal monitors in Unalaska, St Paul, Hoonah, Kodiak, and Metlakatla are helping us survey in places we could not otherwise reach. Thank you - Gunalchéesh, T'oyax, Txin, Qağaasakung, Chin 'an gu nin yu, Quyanaq, Huu 'láagang, Quyanaa, AwA'ahdah! (Map courtesy of Alaska Rural Systemic Initiative Report (uaf.edu/ankn/publications/collective-works-of-ray-b/AKRSI-Final-Report.pdf))



Alaska Invasive News

Dr. John Chapman gave a presentation at the last AKISP meeting on the ectoparasitic isopod *Orthione griffenis* which inhabits the gill chambers of mud shrimps. It is thought to be native to Asia, but is now found on the West coast of North America, from Alaska to Mexico. One of its primary hosts is the mud shrimp *Upogebia pugettensis*, a widely used and commercially harvested fish bait species. Infection by the parasite leads to weight loss and decreased reproduction, causing sharp declines or localized extinctions of shrimp populations. This is a concern for Alaska, as the parasite has recently been found in mud shrimp in both Sitka and Ketchikan.

https://invasions.si.edu/nemesis/calnemo/species_summary/-340

This January the Alaska State Legislature announced that 250 million dollars will be allocated for a port expansion in Nome, the only deep water port in or near the Arctic in the US.

<https://www.adn.com/business-economy/2022/01/25/nome-to-get-250-million-from-feds-to-start-long-awaited-port-expansion/>

While port expansion will bring much needed jobs to the area, the increased ship traffic could also bring new invasions of hitchhiking marine invertebrates. We are looking for ways to get a better baseline of the native species of marine invertebrates that might be impacted by the expansion. Please contact the Plate Watch coordinator, mccannl@si.edu if you are interested in helping or have knowledge of possible funding sources.



Above: Close up of the parasitic isopod *Orthione griffenis* and the mud shrimp it infects. Photos top and bottom respectively: Wikipedia and Stephen Ausmus US Dept Agriculture

Sadly, we lost one of our best Plate Watch monitors in 2021—Richard Hocking. He was very dedicated and always willing to help us dig deeper when a ‘suspect’ invasive was found. He will be missed.

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We're on the web at

<http://platewatch.nisbase.org>