

Japanese Nassa, *Hima fratercula* (Dunker, 1860) is more widely distributed than previously thought
By Linda Schroeder

While participating in an intertidal survey at the Fidalgo Bay Aquatic Reserve in Skagit County, WA, one of my fellow surveyors, Bob Lemon, mentioned that he had previously found the Japanese nassa, *Hima fratercula* (Dunker, 1860), a little south of our current location. I commented that it had not yet been published as being present in Fidalgo Bay. We searched for it all morning but they didn't show themselves to us while we were there.

Bob also mentioned he thought he had found them in Bellingham Bay. I made arrangements to meet up with Bob at his home a week later. In the meantime, he visited Marine Park on the south side of Bellingham, WA and collected some samples. He had indeed found the Japanese nassa. The largest specimen was about 12mm. Later that week Bob visited Chuckanut Bay, which is south of Bellingham at the south end of Whatcom County, and confirmed that this species was also present in that bay.

H. fratercula had been thought to be present only in isolated localities in our region. It is an introduced species from Japan which is believed to have arrived through commercial oyster culture. Over the last few months, networking with biologist friends and through some explorations, we have shown that this species is far from isolated and is established quite widely across Whatcom and Skagit Counties in Washington and has also been found in more locations in B.C. These are likely long established populations. The muddy habitat they prefer just doesn't coincide with the type of beach most of us like to visit and they go unnoticed.

The first discovery of this mud snail in our area was made by a charter member of our club, Eleanor Duggan. She discovered it in Padilla Bay, Skagit County, WA in 1960 and in Samish Bay, Skagit County, WA in 1963. She reported both finds in the *Veliger* in 1963. Continuous monitoring in the Padilla Bay National Estuarine Research Reserve shows this species continues to thrive there. The first report for British Columbia was in 1977 in Boundary Bay (Carlton, 1979). Many forays to this bay by club members over the years have shown that this mud snail lives throughout the bay. Immediately adjacent to Boundary Bay to the southeast is Semiahmoo Bay in WA, where it has also been found by club members.

This species has been inconsistently been listed in reports for Willapa Bay, WA. Some relatively recent surveys for introduced species list it and some don't. I was unable to locate a document reporting its first discovery. To verify its existence in this Bay I enlisted the help of Emily Grason and Jennifer Ruesink of the University of Washington. They were able to collaborate and obtain some fresh specimens from Willapa Bay, confirming the Japanese nassa is certainly present.

Until recently, these were the only locations where the Japanese nassa had been reported. Then in 2014, Rick Harbo discovered them in Ladysmith Harbour, BC (Harbo, 2015). Once again it was a muddy bay with a previous commercial oyster operation and the snail had probably been established for some time but went unnoticed. This is the first discovery of it on Vancouver Island. However, just a few months later, on February 23, 2015, Rick found them further north on the island at Ship's Point, Baynes Sound, BC (Harbo, personal communication).

Finally, we have our newly learned sites in 2016 of Fidalgo Bay in Skagit County and Marine Park and Chuckanut Bay in Whatcom County. These locations should come as no surprise. Bellingham, Chuckanut, Samish, Padilla and Fidalgo Bays are all adjacent to each



Hima fratercula found at Marine Park in Bellingham, WA Photos by Linda Schroeder



Yellow marks show locations where the Japanese nassa has been found.
Map created at <https://fortress.wa.gov/ecy/coastalatlantools/Map.aspx>

other stretching from Bellingham to Anacortes, WA. Together they form a large, relatively protected body of water east of the San Juan Islands.

We continue to search other locations to learn the true extent of this species. A number of muddy bays have been searched throughout BC and WA which have not turned up the snail. Some were previous oyster sites and some not.

Bob Lemon's tuna can method

Baiting is the easiest way to try and find the Japanese nassa. They are often under the surface of the mud and difficult to spot. Bob's approach has been to take a recently emptied tuna can, unrinsed, and set it in about a foot of water, weighing it down with a rock. He has tried both rising and falling tides with equal success. After about an hour, he checks the can to see if any of the scavenger mud snails have arrived, be it native or non-native. He has had mixed success with tuna flavored cat food, and this may be partly due to the varied ingredients in the food.

References

- Boersma, P.D., Reichard, S., Van Buren, A.N. (2006). *Invasive Species in the Pacific Northwest*. University of Washington Press. 276pp.
- Carlton, J.T. (1979). "History, biogeography, and ecology of the introduced marine and estuarine invertebrates of the Pacific coast of North America". Ph. D. Dissertation, University of California, Davis. 904 pp.
- Cohen, A.N., Berry, H.D., Mills, C.E., Milne, D., Britton-Simmons, K., Wonham, M.J., Secord, D.L., Barkas, J.A., Bingham, B., Bookheim, B.E., Byers, J.E., Chapman, J.W., Cordell, J.R., Dumbauld, B., Fukuyama, A., Harris, L.H., Kohn, A.J., Li, K., Mumford Jr., T.F., Radashevsky, V., Sewell, A.T., Welch, K. (2000). *Washington State Exotics Expedition 2000: A Rapid Survey of Exotic Species in the Shallow Waters of Elliott Bay, Totten and Eld Inlets, and Willapa Bay*. The Nearshore Habitat Program, Washington State Department of Natural Resources, Olympia, WA. 46pp.
- Duggan, E.P. (1963). "Report on non-indigenous shells collected in the state of Washington". *Veliger* 6:112.
- Harbo, R.M, Holm, G.P., Merilees, W. (2015). "New records for the distribution and a description of the egg capsules of the Japanese nassa, *Hima fratercula* (Dunker, 1860) Family Nassariidae in Ladysmith Harbour, B.C.". *The Dredgings* 55(2): 3-6.
- United States Department of Commerce. (1980). "Draft Environmental Impact Statement, Proposed Estuarine Sanctuary Grant Award for Padilla Bay, Skagit County, Washington to State of Washington". 254pp.