

Shore Stewards News

GUIDELINES AND RESOURCES FOR LIVING NEAR WATER | ESTABLISHED 2003

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Dangers to the Dungeness Crab



Figure 1: Dungeness Crab, *Metacarcinus magister* or formerly *Cancer magister*
Image Credit: Maxvis

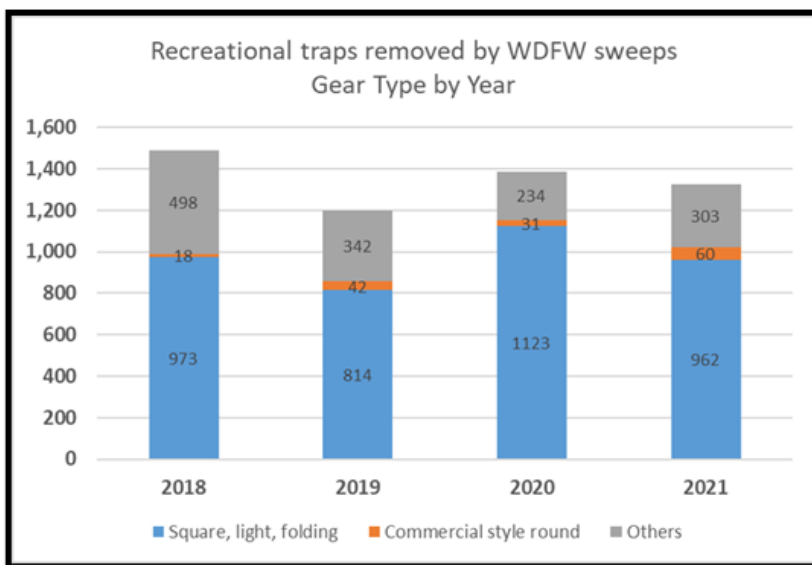
Introduction

Dungeness crab is an edible large-bodied crustacean harvested from central California to the Gulf of Alaska. In Puget Sound, it is most abundant north of Seattle, in Hood Canal, and near the Pacific Coast. Long before this area was settled by Europeans, Coastal Indigenous Peoples valued the crab for its cultural, ecological, and economic roles passed down through tribal traditions spanning thousands of years. The Centre for Indigenous Peoples' Nutrition and Environment (CINE) reports “the Nuxalk word for crab was k'inacw. The Central and Northern Nootka called crabs hasãmts, and the Coast Salish word for crab was Xíxyik'.” (Kuhnlein & Humphries, 2017)) The name, Dungeness, was not established on the North American Pacific Coast until 1792 after British explorer Captain George Vancouver arrived in the Strait of Juan de Fuca. He claimed the natural sand spit and nearby territory for Britain, naming it after a similar extension of land on the southeast coast of England called Dungeness, an Old Norse word meaning “headland”. The territory, native to the Klallam (S'Klallam) Tribe, became known as “New Dungeness”. The sand spit, which juts 5.5 miles out into the Strait

of Juan de Fuca from the top of the Olympic Peninsula, later became known as Dungeness Spit. In 1848, the first commercial fishery began in this location, but it wasn't until 1925 that the first known use of the word, Dungeness, was applied to the crab. Today, the combined harvests for both Tribal and Washington State Dungeness crab fisheries reports an average of 10 million pounds annually. In addition, the Washington shellfish industry employs over 3,200 people and provides \$270 million to the Washington economy, supporting countless livelihoods and communities throughout the state. Yet, despite its enduring history, recreational popularity, and commercial importance, Dungeness crab populations face many potential dangers ranging from global issues, such as ocean acidification and warming sea-surface temperatures, to more localized problems such as derelict crab pots and the invasive European Green Crab.

Derelict crab pots

Derelict fishing gear is any fishing gear lost or left at sea, including monofilament gillnets, purse seines, trawl nets, shrimp pots, and crab pots. Once fishing gear is abandoned, it will continue to trap both target and non-target species with no one there to claim the catch. According to a study by the Northwest Straits Foundation, a non-profit organization founded in 2002 to promote and implement science-based restoration and stewardship, “more than 12,000 crab pots are lost and become derelict every year in Washington’s Salish Sea, killing over 177,000 harvestable crab each year. It is estimated that a single lost crab pot can kill up to 15 crabs per year, and some estimates are much higher”. (Northwest Straits Foundation, 2021). In addition, derelict fishing gear can cause further damage by “scouring or preventing habitat access through accumulation of gear or by fundamentally altering habitats by trapping fine sediments and changing the substrate.” (Sobocinski, 2021)



Crab pots can be lost for a variety of reasons. Strong tidal currents can cause pots to drift if they are not appropriately weighted. Abrupt changes in water depth can sink pots if the gear does not have enough line attached. Heavy vessel traffic, both commercial and recreational, or crowded fishing grounds can lead to vessels running over buoys and lines causing line entanglement with other gear, severed lines, temporary or permanent buoy submersion, and drifting pots. Lost pots can also be caused by user error, malfunctioning gear, or sabotage. All of these factors contribute to high concentrations of derelict crab pots.

Figure 2: Derelict recreational traps removed by Washington Department of Fish and Wildlife over the past four years. **Image Credit:** Washington Department of Fish and Wildlife

What can you do?

The most important step a recreational crabber can take to reduce the number of derelict crab pots in the Salish Sea is to follow the guidelines for a successful crab harvest. The Northwest Straits Foundation recommends the following strategies to “keep your pot and catch more crab”:

- **Avoid marine transit and ferry lanes.**
- **Check tides and currents** to avoid strong tidal changes and currents that can cause pots to drift.

- **Use high visibility buoys** to clearly mark your gear.
- **Use a weighted line** to sink below the surface and avoid being cut by passing boats.
- **Weight your pot** so it does not move in high currents or tidal changes
- **Use longer line.** Use 1/3 more line than water depth to allow for changes in tides and currents.
- **Secure lid escape panels with biodegradable cotton escape cord.** This allows crabs to escape from lost pots after the cord degrades. (Northwest Straits Foundation, 2021)



Figure 3: Dropping crab pots without weights and attaching buoys incorrectly contributes to derelict gear.
Image credit: Washington Department of Fish and Wildlife

Resources

The Northwest Straits Foundation has released an instructional video on YouTube called “[Virtual Crabber Workshop](#)” for recreational crabbing. Presenters from the Washington Department of Fish and Wildlife, Shellfish Biologist Daniel Sund, and Lead Crustacean Biologist Katelyn Bosley, share up-to-date rules and regulations, recommendations for crab gear, best practices, and information resources. In addition, the Northwest Straits Foundation has more information about when and where to set your crab pots at: www.catchmorecrab.org. The site includes helpful links for tide predictions, ferry routes, tug and low tow routes, and commercial vessel tracking, plus instructional videos for “How to Keep Your Pots and Catch More Crab!”, “How to Rig Your Line”, and “Attach Rebar to the Bottom of Your Pot”. If you do lose your crab pots, you can report lost shellfish gear at: www.wdfw.wa.gov/fishing/shellfishing-regulations/gear-rules/lost-gear or call 855-542-3935. Marine Enforcement officers from the Washington Department of Fish and Wildlife may be able to recover your lost gear and return it if it is properly identified. **There are no penalties associated with reporting lost fishing gear.**

European green crab

The European green crab is known as *Carcinus maenas*, which translates to “raving mad crab”. Both opportunistic and prolific, it is considered the most invasive marine species in the world. A single female European green crab can produce up to half a million larvae annually. Once released, the larvae can travel hundreds of miles on ocean currents to new locations where they can readily adapt to a range of salinity and habitat conditions. Without the natural population regulation from parasites or predators found in its native habitat, the European green crab can thrive unchecked in protected intertidal areas. It can damage eelgrass beds, an essential habitat for Dungeness crab, as it actively disturbs bed sediments and uproots shoots while it searches for prey.

The European green crab will also outcompete Dungeness crab for habitat and food as it preys on both plants and animals. It will eat algae, detritus, soft-shell clams, worms, snails, mussels, small oysters, and smaller shore crab, including juvenile Dungeness crab. Adult European green crab will even eat their own young.



The first sighting in the Salish Sea was in the San Juan Islands in 2016. The Kitsap reports, “In 2021, more than 102,000 European green crabs were caught in Puget Sound and along Washington’s coast. This was an astronomical 5,500% increase from the 1,800 crabs caught just two years earlier in 2019”. (The Kitsap, 2021)

Figure 4: The European Green Crab, *Carcinus maenas*.
Photo credit: Allie Simpson, Northwest Straits

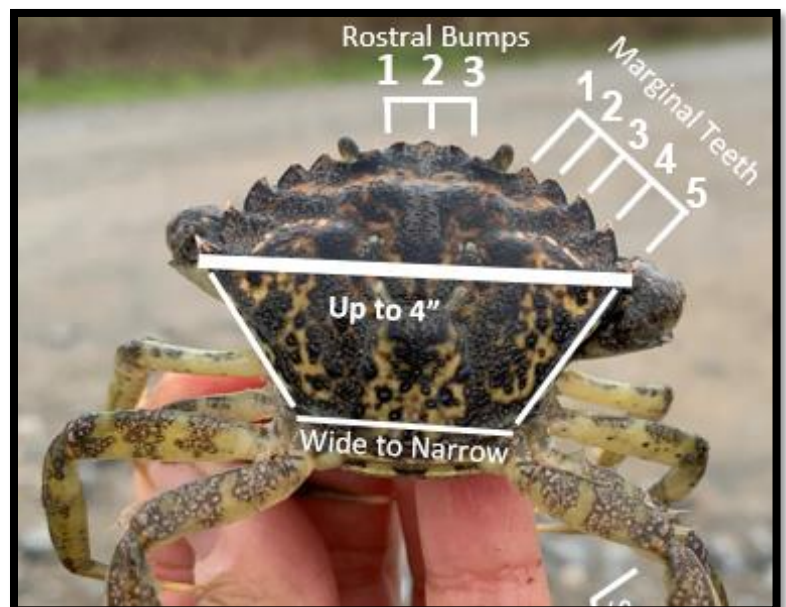
Most recently, a male European green crab was found in Hood Canal in May 2022. The Puget Sound Institute reports, “The discovery of a green crab in Central Hood Canal was fairly shocking for those involved. Despite an extensive trapping effort, green crabs had never been spotted in Central or South Puget Sound, and this green crab in Hood Canal was more than 30 miles by water to the nearest confirmed sighting”. (Dunagan, 2022) The recent finding follows an emergency order issued by Washington Governor, Jay Inslee, in January 2022. The order allows the Washington Department of Fish and Wildlife to develop a statewide plan of action to prevent the European green crab from becoming permanently established in Washington waters. The plan will involve multiple agencies including the Department of Ecology, the Department of Natural Resources, the State Parks and Recreation Commission, Washington Tribes, and Indigenous peoples.

What can you do?

“The best way for community members to help prevent expansion of the species in the Salish Sea is to be the ‘Eyes-on-the-Beach’ as you spend time along the coastline. The best places to look for evidence of European green crabs are intertidal areas with protective structure like vertical banks, intertidal vegetation, or hard debris such as shell, riprap and pilings, or logs. How do you know if you found an invasive green crab and not one of the many other native Salish Sea crab species? Count the spines! If it is a green crab, it will have five spines or marginal teeth on the outside of each eye. An easy way to remember this is **the word G-R-E-E-N has five letters**”. (Robison & Gunnell, 2022)

Figure 5: The European Green Crab Is not always green. Some have a multi-colored mottled pattern and often have yellow, orange, or a red color.

Image Credit: Washington Department of Fish & Wildlife



If you do happen to find a European green crab, please do not remove it. **It is illegal to possess a live European green crab in Washington!** In addition, the Washington Department of Fish and Wildlife is asking the public not to kill suspected European green crabs since several native crabs are also green and may be identified incorrectly.

Resources

The Washington Department of Fish and Wildlife has teamed up with the Washington Sea Grant program at the University of Washington to lead a citizen science-based early detection and monitoring program along inland Washington shorelines. If you find a suspected European green crab or its shell in Washington, document the size of the crab by placing it next to a common object and take several photos from different angles and distances. Note your location and email all photos and detailed information as soon as possible to the Washington Sea Grant program at: crabteam@uw.edu. You can also report your sighting directly to the Washington Department of Fish and Wildlife on their website at: [Report an Invasive Species Occurrence](#), or download the Washington Invasive Species app, available in your phone's app store. To see more photos and identifying features of the European green crab compared to other native species, download the Washington Sea Grant's [Crab Identification Guide](#) or download the [flyer from the Washington Department of Fish and Wildlife](#). If you are interested in receiving the Crab Team Newsletter or volunteering as a community scientist to help monitor and trap European green crabs, you can find more information on the Washington Sea Grant's website at: <https://wsg.washington.edu/crabteam/greencrab/>.

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