



## Green Crab Attack: European Green Crab Explainer Activity

Grade Level: Preschool - Adult  
Duration: 5-10 minutes  
The Alaska Oil Spill Lesson Bank  
[www.pwsrcac.org/lessons](http://www.pwsrcac.org/lessons)

### Related Resources

#### Websites

Alaska Department of Fish and Game Invasive Species:  
<https://www.adfg.alaska.gov/index.cfm?adfg=invasive.m>  
[ain](https://www.adfg.alaska.gov/index.cfm?adfg=invasive.m)

NOAA Fisheries:  
<https://www.fisheries.noaa.gov/alaska/habitat-conservation/look-out-invasive-crab>

WA Sea Grant Crab Team:  
<https://wsg.washington.edu/crabteam/>

Kachemak Bay National Estuarine Research Reserve Video:  
[https://drive.google.com/file/d/1IujwOWIwNW10hb79yJE\\_hyW7D8YVp8nf/view](https://drive.google.com/file/d/1IujwOWIwNW10hb79yJE_hyW7D8YVp8nf/view)

European Green Crab: Alaska Invasive Species Partnership  
<https://www.youtube.com/watch?v=6ddpeY7IQDY>

### Overview

This is a short explainer activity for a booth or similar informal education/outreach venue to share about marine invasive species monitoring and specifically European green crab in Alaska.

### Objectives

- Participants will engage hands-on with a crab monitoring trap and sorting marine creatures found.
- Participants will gain understanding about marine invasive species and how scientists monitor for them in the local environment.

### Materials

- Crab monitoring trap (e.g., Fukui trap or similar)
  - Suggested: use foam pipe insulation or tape to cover edges at the trap openings. This avoids scratches for the users reaching their arms in.
- Variety of foam sea critters – one or more must be a green crab
- Sorting trays such as pie tins with the creatures' shapes drawn in sharpie
- [ADF&G informational green crab poster](#) or other handouts or diagrams for information
- Optional: Mounts or model European green crabs

## Background

Invasive species are defined as a species that is nonnative to the ecosystem, and whose introduction causes or is likely to cause environmental harm, economic harm, or harm to human health. For Alaska's coastal ecosystems, European green crab (*Carcinus maenas*) are an invasive species of great concern. European green crab are native to the Northeast Atlantic Ocean, but are invasive elsewhere including in the Pacific Ocean where they are found along the West coast of the continental U.S. and Canada. European green crab were found in Alaska for the first time in 2022, in Metlakatla (Southeast Alaska). European green crab are a small and efficient predator crab species that can alter ecosystems they invade. They do this by eating many things including clams, oysters, mussels, marine worms, small crustaceans, and juvenile salmon, and by outcompeting local species for food and habitat. European green crabs can destroy seagrass beds, which are key habitat for many sea creatures especially during vulnerable juvenile stages.

In Southcentral Alaska, monitoring for marine invasive species is especially important because of the oil tanker vessel traffic through the region. The tankers' hulls or the ballast water they carry are potential vectors, or modes of introduction, of invasive species into the environment. Oil tankers carry ballast water in designated tanks when they are empty of oil. This ballast water is ocean water usually taken on board in a port outside of Alaska, such as the west coast of the continental U.S. The water helps them travel safely through the open ocean on their way to Alaska without cargo on board. When tankers arrive, the ballast water is released into Alaska waters such as Port Valdez at the Valdez Marine Terminal (where the Trans Alaska Pipeline System ends). Then the ships are loaded with crude oil to transport to their next destination. Even though ballast water may be treated before it is released to reduce the chance of introducing an invasive species, it is important to monitor the environment for early detection of species that arrive and survive.



Photo: CSIRO, [https://commons.wikimedia.org/wiki/File:CSIRO\\_ScienceImage\\_3468\\_The\\_European\\_Green\\_Crab.jpg](https://commons.wikimedia.org/wiki/File:CSIRO_ScienceImage_3468_The_European_Green_Crab.jpg)

## Preparation

1. Set up the crab trap, animals, and sorting trays.
2. Pre-set the animals inside of the trap.



## Introducing the Lesson

**Note:** *Adjust the suggested script and run of this explainer activity to meet your situational and content needs as well as the age group of the participants.*

Tell participants that they get to step into the shoes of a marine scientist. Ask about the trap: "Do you know what this is?" Share with them if they are unfamiliar.

## Activity

1. Scientists use these traps to monitor for invasive species in the ocean environment. Ask "Do you know what an invasive species is?" Gauge what the participant knows and then give a bit of explanation and background about invasive species.
2. Give the instructions for the activity: "You get to be a marine scientist monitoring for invasive species. Your task is to remove the marine creatures from the trap and sort them into the types you find."
  - a. Small groups can work together on this.
  - b. They can either open the trap on the top or reach in through the side openings to collect the creatures. Allow participants to determine this for themselves.

3. When they complete the task (sort the last animal they grab), ask “What did you find?” After they tell you, ask “Did you find anything that might be a European green crab?”
4. Share about European green crab and why they are of concern for Alaskans and the Alaska marine environment.
  - a. Sharing that the crabs’ disruption of salmon habitat is a great connection for many Alaskans or Alaska visitors.

## Wrap-up

Conclude the activity by explaining why scientists monitor for invasive species in the local area. Ask participants to reflect on why this type of science is important for their lives and where they live. Answer any questions.