

Aquatic Nuisance Species Monitoring in Alaska

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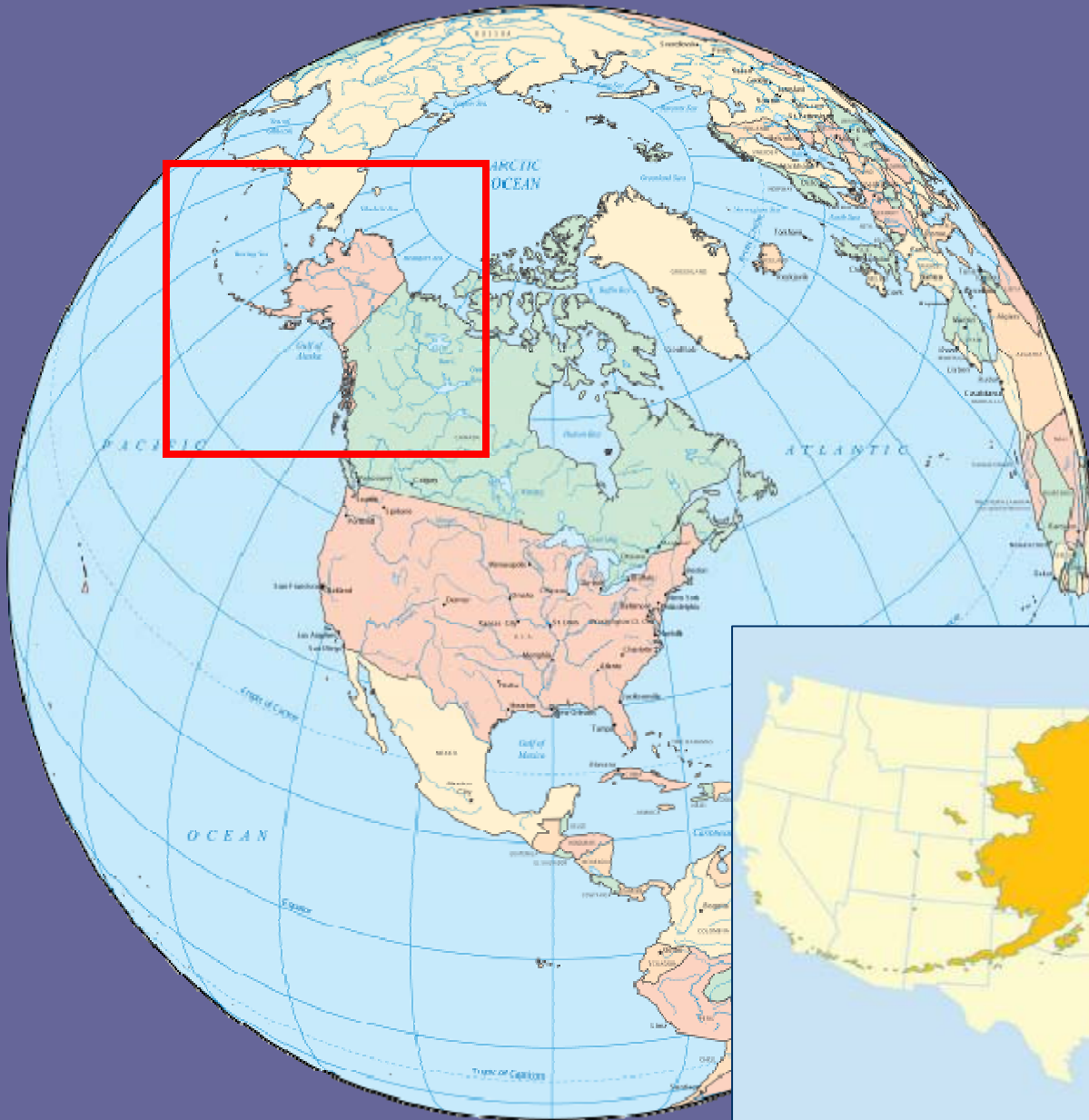


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Kachemak Bay Research Reserve



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16th International Conference on Aquatic Invasive Species







Challenges to Monitoring in Alaska

- Human resources
- Vectors
- Planktonic Life History
- Climate Change
- Complacency



Monitoring in Coastal Alaska

- European Green Crab
 - PWSRCAC led, USF&WS
 - Other partners
- Tunicates/fouling organisms
 - Smithsonian led, other partners
- Alaska Invasive Species Working Group



<http://convoluta.ucdavis.edu>

European Green Crab

“Where you find large populations of green crabs, you won't find native crabs at all.”

*(Dr. Ron Thresher,
CRIMP, Australia)*



Green Crab Monitoring



- Intertidal monitoring at low tide
- Modified minnow/fish traps
- Traps left out for two tide cycles
- Four field days per summer

Regional “Uniqueness”



Sitka

Heather Woody, Sitka Tribe



Security Cove

Gary Freitag, NOAA Sea Grant

No Green Crab Found Yet!



LOOK OUT FOR INVASIVE EUROPEAN GREEN CRAB

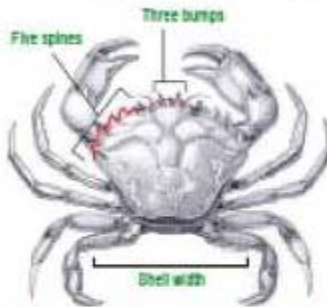
What is an invasive animal?

The European green crab is an invasive animal that may come to Alaska. Invasive animals come from other parts of the world and can be harmful to the environment, natural resources, humans, and the economy. Green crabs eat clams, oysters, mussels, native worms and shell crustaceans that are important to fish for native aquatic species. Once established in Alaska, green crabs could pose a serious threat to native crabs, including the young of commercial crabs, as well as to clam and oyster fisheries.

How do they get here?

European green crabs probably came to the U.S. in ship ballast water. They may also be transported with shells, equipment, or packing materials in agriculture operations. Green crabs can also spread from one location to another if they crawl outwards.

Scientists and resource managers generally agree that with climate change warming Alaska waters, it is no longer a matter of "if" but "when and where" green crabs will arrive in Alaska.



Green crabs can be identified by five unique shell shape. Adults can have shells up to four inches across in width.



Green crab shell color



Female (left) and male (right) green crab shell coloration

How do I identify a green crab?

European green crabs are not always green! The top of the shell may be mottled dark brown to dark green, with small yellow patches. The bottom may be orange or red during molting. The best way to identify them is to count the spines. There are 5 spines on each side of the front of the shell, and 3 bumps between the eyes. Adult shells can be up to 4 inches across.

Where should I look?

Green crabs live on rocky shores, cobble beaches, sandbars and tidal marshes. They can often be found near seagrass beds or other shoreline vegetation. Green crabs tolerate a wide range of water salinity and temperature. They can also survive a year or more of river runoff in some estuarine environments.

Common Alaskan Crabs	
	• Five to eight spines on each side of the shell
	• Large, jagged teeth on each side of top shell
	• Large, jagged teeth on each side of top shell
	• Broadly oval, convex top shell with ten teeth, widest at the 10th and four teeth

What if I find one?

If you find a green crab, do not throw it back alive! Keep it in a container with the date and location you found it, freeze it or preserve it with rubbing alcohol and call 1-877-INVASIV. The collected crab will be needed to confirm its identification. If you are interested in learning more about citizen-based invasive species monitoring, call 1-877-INVASIV or one of the other agencies listed here.

Alaska Department of Fish & Game
1-877-INVASIV
(1-877-466-2748)
Toll-free statewide

U.S. Fish & Wildlife Service
907-766-3613
Anchorage

NOAA National Marine Fisheries Service
907-566-7010
Anchorage

Kachemak Bay National Estuarine Research Reserve
907-226-8377
 Homer

1-877-INVASIV



STOP AQUATIC INVASIVE SPECIES EUROPEAN GREEN CRABS

WHY LOOK FOR EUROPEAN GREEN CRABS?

European green crabs compete with native crab species and are voracious predators of clams, oysters, mussels, marine worms, and small crustaceans. In Alaska, green crabs could pose a serious economic and environmental threat to native crabs, including the young of commercially caught crabs, as well as to clam and oyster fisheries.

DISTINGUISHING FEATURES:

- Five distinct spines (teeth) on each side of shell, between widest part of shell and eyes
- Top shell (carapace) usually dark brown to green, mottled with yellowish spotting
- Top shell up to 4 inches wide
- Three bumps between the eyes
- Both front claws the same size

Art by: Terrijo Williams

COMMON ALASKA CRABS THAT CAN BE CONFUSED WITH EUROPEAN GREEN CRAB

HELMET OR HORNS CRAB

- Large, jagged teeth on each side of top shell
- Entire body covered with stiff, bristly hairs
- Frontal area protrudes past eyes

PYGMY ROCK CRAB

- Large claws, legs black
- Top shell pearly circular in outline, widest at 7th or 8th tooth
- Legs very hairy

DUNGENESS CRAB

- Broadly oval, convex top shell with ten teeth, widest at the 10th and four teeth
- Narrow frontal area, with the unequal teeth between the eyes
- Light-colored leg tips

REPORTING:

You can play an important role in the early detection of non-native species. Community monitors have been widely successful against the spread of the European green crab in North America. Green crabs have successfully invaded the West coast of North America as far north as British Columbia, but have not been found in Alaska. Scientists and resource managers generally agree that green crab arrival in Alaska is no longer a matter of "if" but "when."

- When looking at a suspicious crab, compare the appearance with the description on this card. If you think you have a green crab, do not release it! Take a picture of the crab, if you can.
- Put the crab in a container, labeled with the date and location where it was found. Describe the environment you found it in, such as rocky beach or boat hull.
- Freeze it and call 1-877-INVASIV. Email your pictures to invasives@alaska.gov. Researchers will need the crab to confirm its identification.

If you are interested in learning more about citizen-based invasive species monitoring, call 907.226.4663 or 1.877.INVASIV. Learn more about the European Green Crab and other invasive species at www.alaskainvasives.org

Kachemak Bay Research Reserve
Alaska Islands & Coast Vision Center
55 Sealing Station, Box 2, Homer, AK 99603
907.226.4789 / fax 907.226.4784
WWW.KBTRC.ORG

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Tunicates/Fouling Organisms

- SERC-led since 2000
- Many participants



Settling plates: Locations Statewide









***Caprella mutica* (2000, 2007)**

G. Ashton



***Botrylloides violaceus* (2000)**

E. Gray



*2000 census also found in Sitka
and Ketchikan*

CSRIO

***Schizoporella japonica* (2000)**



In Sitka, Botryllus

Tunicate/Fouling Organism Monitoring Future Direction

- Outreach
- Continued Collaboration
 - Platewatch



Prevent (plan, educate, assist)
Detect (AK is immense, partner up!)
Respond (Do Not Dither!)





Sitka Tribe



Questions?

