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## Invaders present threat to bay, inlet

By Carey James

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The Chinese mitten crab, the South African sabellid worm and, worst of all, killer algae all sound like something from a low-budget horror flick. In some ways, that's appropriate because each of the species could have a horrific effect on Alaska's marine environment.

Scientists studying the impacts of, and potential for, invasive species in Alaska told an audience Thursday night at the Islands and Ocean Visitors Center they are concerned. Already, more than a dozen non-native species have been found in the waters of

Kachemak Bay and other Alaska ports. While those species are cause for concern, most appear to be relatively harmless, researchers say, though explosions of other species elsewhere have taken people by surprise.

What really worries researchers are species such as the European green crab and the Chinese mitten crab, which have invaded the west coast of the Lower 48 with devastating results.

Can something as small as a crab really have an impact in an area as vast as Alaska?

Absolutely, the scientists say.

In Bodega Bay, Calif., green crabs are blamed for killing all the shorebirds in the area. Washington state has launched an aggressive knockdown campaign that has probably slowed the crab's move to Alaska, but the crabs have been found as far north as Vancouver Island.

The Chinese mitten crab, so named for the black fuzz on the back of its claws, turned up in San Francisco's waters in 1992 and has caused significant damage to fish species, as well as the banks of the Sacramento River.

"It could be really detrimental to our salmon," said Lisa Ka'aihue, of the Prince William Sound **Regional Citizens' Advisory Council**, which hosted last week's presentation.

Invasive species are nothing new. The common periwinkle is thought to have been brought to North America by the Vikings. Though research shows it took a long time to move south from Newfoundland, Canada, the periwinkle is suspected to have devastated

Atlantic coastlines, destroying much of the lush vegetation described in historical reports of the coast.

"Uncontrolled movement of invasive species is a major threat," Ka'aihue said. "And most invasions are irreversible."

So how does an invader like killer algae make it to Homer's waters? One culprit is the ballast water from ships heading up **Cook Inlet**. Interestingly, some of the advances in ship technology, such as the double-hulled tankers that make it safer to carry oil, have opened the door of opportunity for invasive species to hitch a lift. Ballast water used to be carried in the same tank that the oil was carried. The water was so contaminated by the oil that species couldn't survive from one port to the next.

Now, in many boats, ballast water is held separately and can be discharged directly into Kachemak Bay, along with all its hitchhikers.

An estimated 7,000 species per day enter U.S. waters in ballast water, said Donna Turgeon with the Aquatic Nuisance Species Hawaiian Monitoring Program.

One way to prevent the ballast water invasion is to exchange ballast water in the middle of the ocean before arriving in a new port. Organisms that survive in the deep sea's salty waters typically don't in bays and **inlets** and vice versa. Some studies have shown ballast water exchange eliminates as much as 95 percent of invasive species.

But exchanging ballast water isn't without its difficulties. Ships need the ballast for stability, so dumping out all the ballast is dangerous. Instead, they will often pump deep-sea water into their ballast, overflowing it several times over to purge

the foreign water. Other techniques, such as treating the water with ozone, a practice used on other water-cleaning applications such as bottled water, are being studied by British Petroleum and others, said Gary Sonnevil with the U.S. Fish and Wildlife Service in Soldotna.

Turgeon is working to develop a Web site through which areas around the country could report suspected invaders and find a list of native species. Since invasive species do not respect state or international boundaries, a collaborative effort to share information is essential, Turgeon said.

While Alaska waters are still relatively clean, invasive species are a real threat. Warming water temperatures make the environment more hospitable and once established, presenters said eradication of many of these species is virtually impossible.

Millions of dollars are spent each year to attempt to remove species in the Lower 48.

Populations of invasives can explode quickly or lay dormant for many years. The first two years the Chinese mitten crabs were found in San Francisco less than a hundred were discovered. The third year researchers found more than 100,000, said Marilyn Leland with the **advisory council**.

Jim Hornaday, who represents the city of Homer on the **Cook Inlet Regional Citizens' Advisory Council**, questioned why the exchange of

ballast water is not required by law. He questioned the need for continued studies when the ballast exchange had such favorable results.

"I'd like to throw out the idea that all of this (studying) has just been a big waste of time," Hornaday said.

Leland said that some studies have shown the ballast exchange is only 64 percent effective, but agreed that legally requiring ships to exchange ballast was important and something the Prince William Sound [council](#) is working on with state legislators.

"It's not a waste of time if we can get them to do it," she said.

According to the [council's](#) Web site, another way invasive species can be introduced in Alaska is through the mariculture industry.

Species such as the boring sponge are likely to have been introduced through the oyster industry's young oyster spat. Atlantic salmon have recently been found in Alaska waters, likely coming from fish farms in British Columbia. Northern Pike, found in some Alaska lakes, are thought to have been intentionally introduced for sportfishing. All have detrimental impacts on indigenous species.

For more information on invasive species that are already here as well as threats to the area, contact the [council](#) or go online to [www.pwsrcac.org](http://www.pwsrcac.org) and click on the NIS (Nonindigenous Invasive Species) button.

"The key is to be as proactive as possible," Ka'aihue said.

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