Drayton Harbor – September 2019

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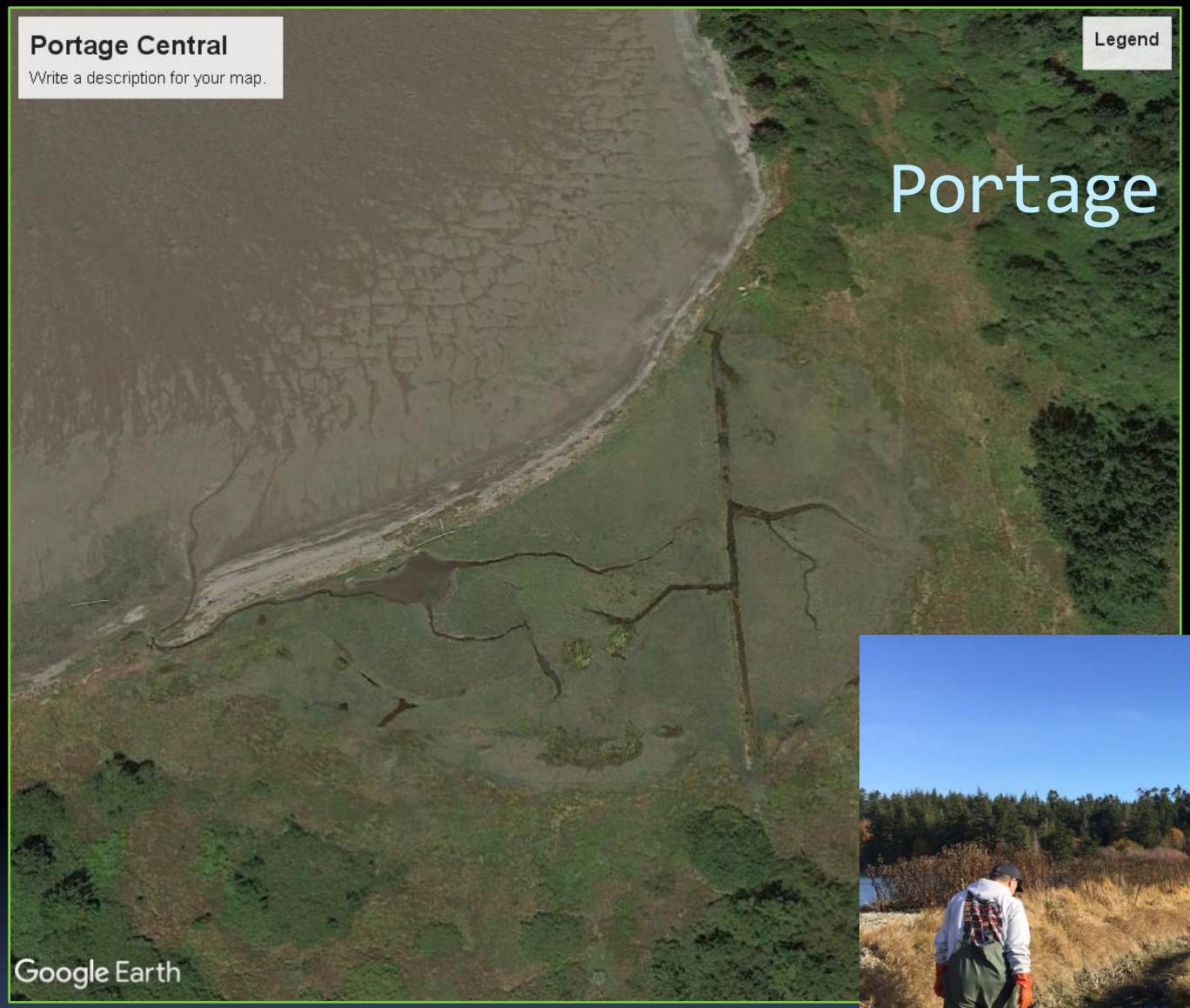
First detection of invasive European green crab on Lummi Reservation tidelands

Karl W. Mueller and Nicholas T. Jefferson
Lummi Natural Resources Department

Lummi Bay and Lummi Sea Pond

Portage Island/Bay

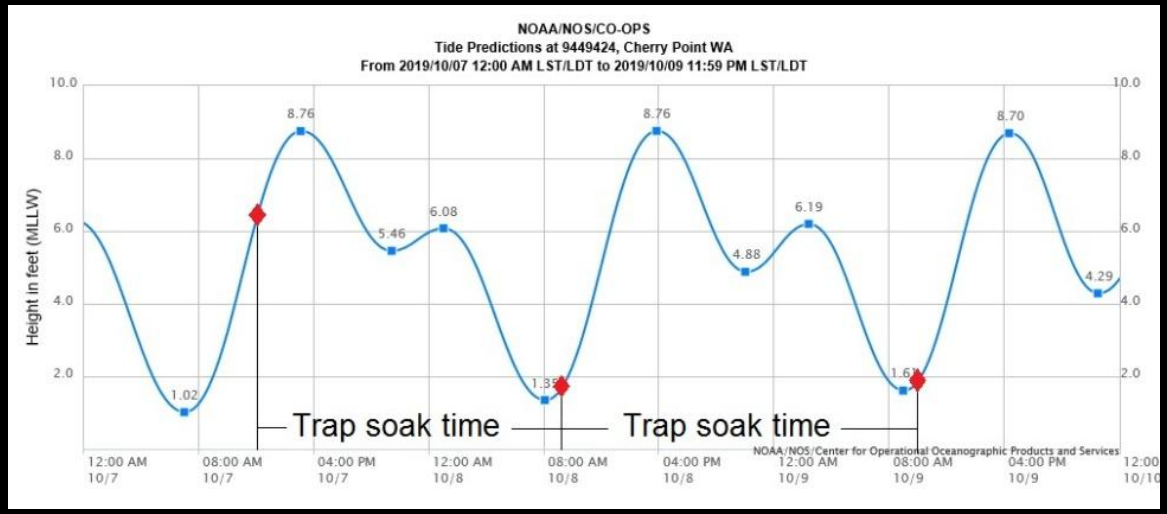


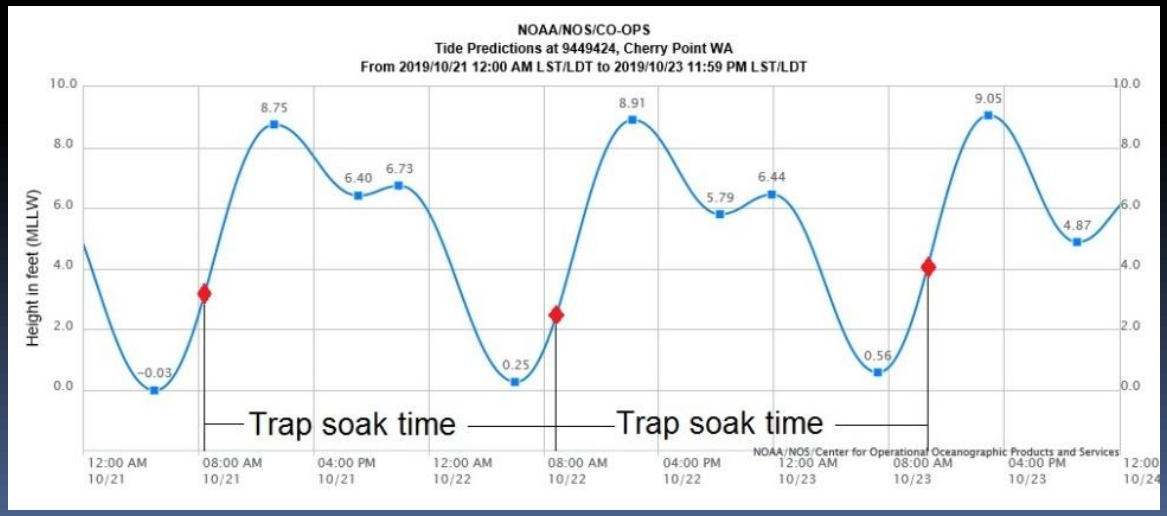
EGC monitored over next 30 Days, from October to November 2019

Standard EGC Protocols

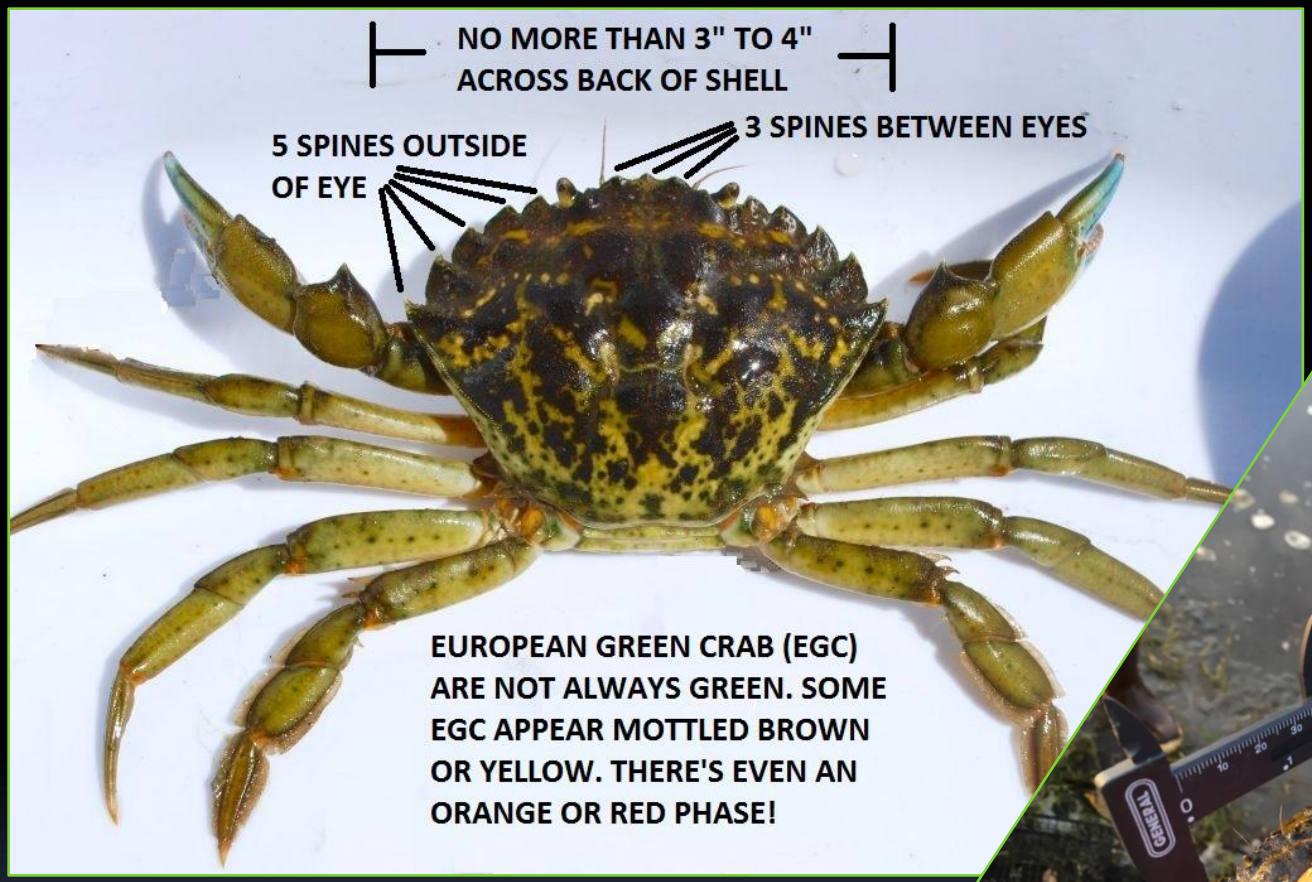
Alternating fukui-style and minnow traps, baited, and set overnight in preferred habitats

Standard EGC Protocols





Processing catch



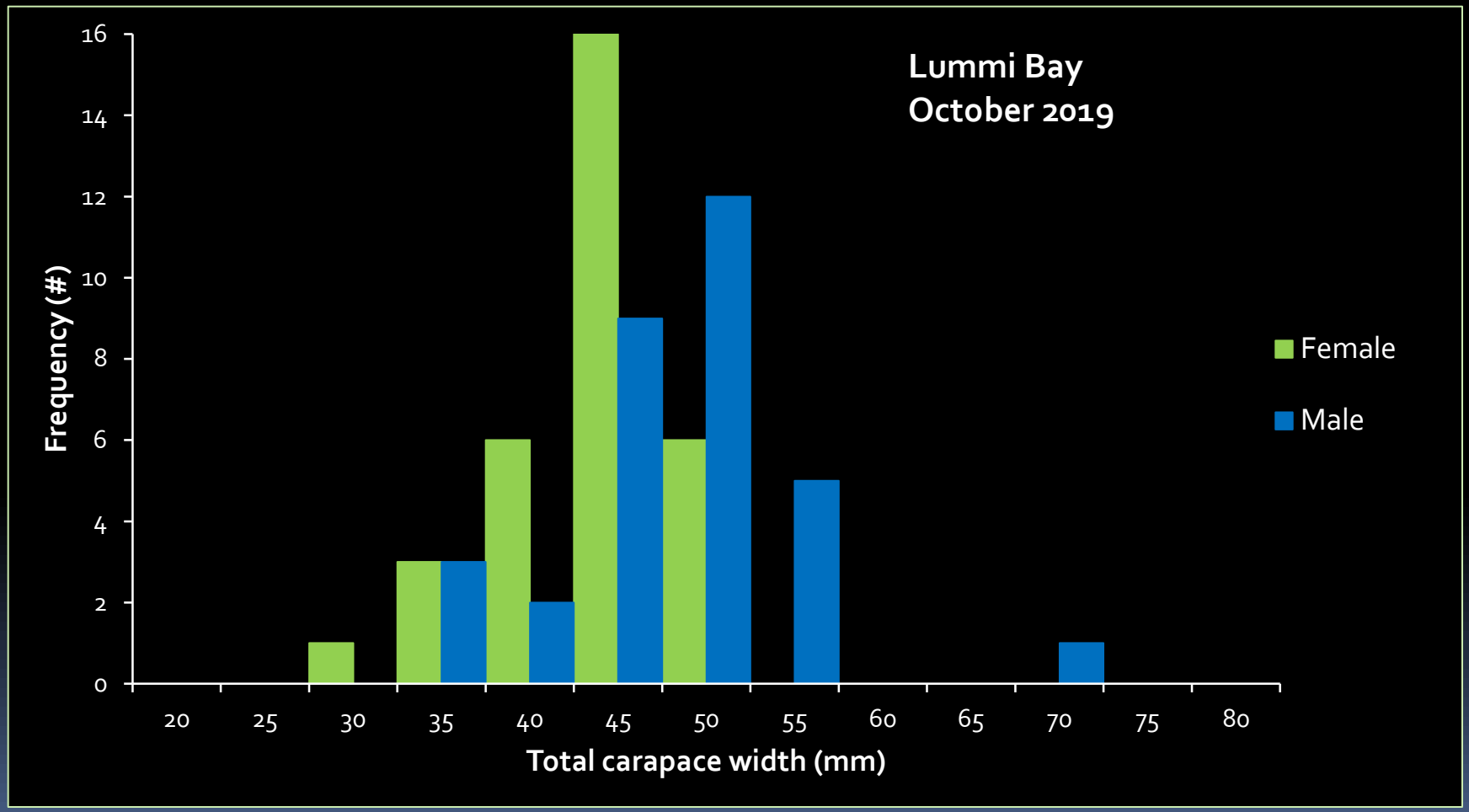
EGC were identified, sexed, measured for CW, and enumerated; By-catch was identified and enumerated

Where they were found

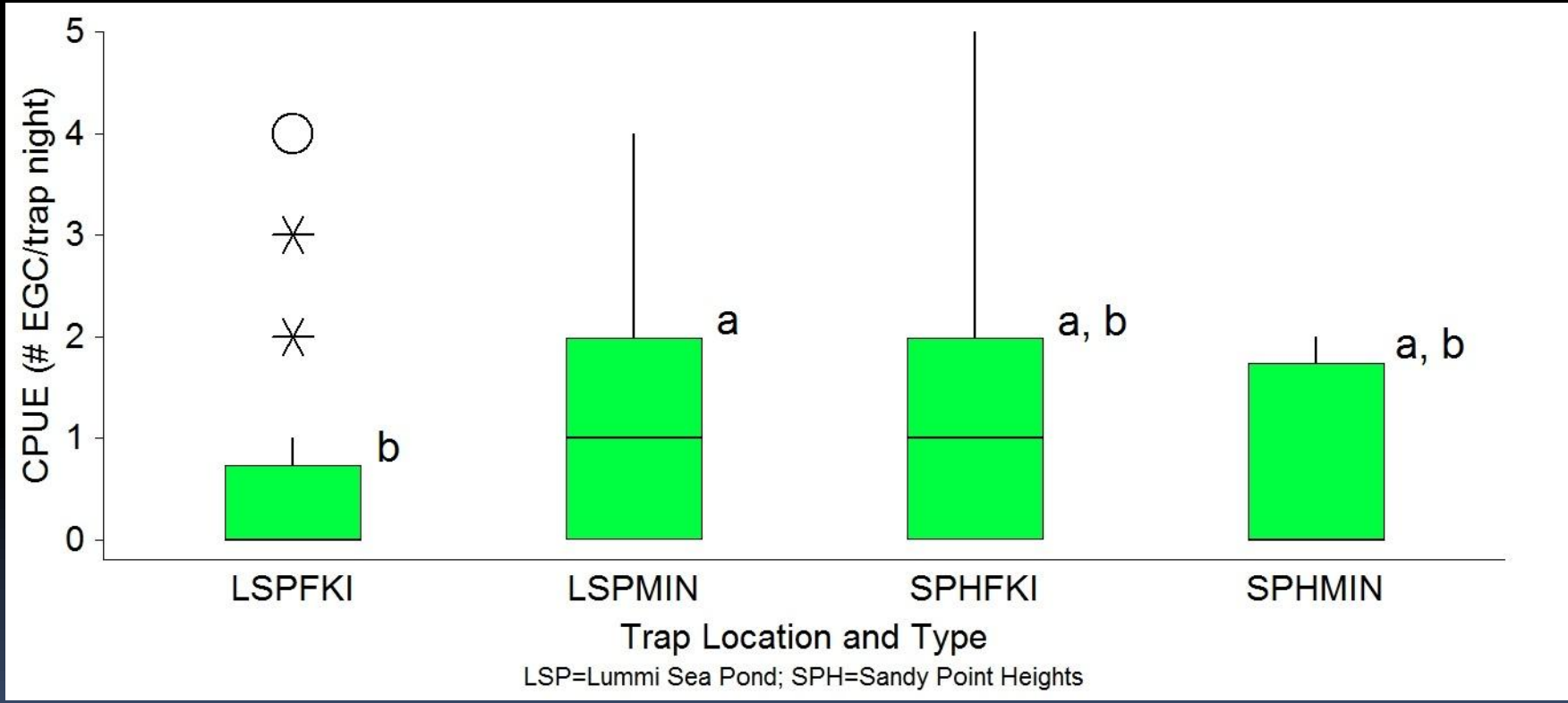
Lummi Sea Pond

Sandy Point Heights

Size frequency of EGC captured



CPUE of EGC captured in fukui-style (FKI) and minnow (MIN) traps



How does Lummi Bay compare?

Table 1. Comparison of catches of invasive European green crab throughout coastal and inland marine waters of Washington State.

Capture location (listed north to south)	County	Trap nights	Number EGC captured	CPUE (# EGC/100 trap nights)
Drayton Harbor	Whatcom	553	38	6.87
Lummi Bay	**Whatcom**	**180**	**64**	**35.6**
Mud Bay, Chuckanut	Whatcom	251	3	1.19
Westcott Bay, San Juan Island	San Juan	895	6	0.67
Samish Bay	Skagit	36	4	0 *
Padilla Bay	Skagit	1,085	6	0.55
Wa'atch River Valley, Makah	**Clallam**	**~2,000**	**968**	**~ 48**
Dungeness Spit	Clallam	8,885	222	2.50
Sequim Bay	Clallam	957	3	0.31
Kala Point and Scow Bay	Jefferson	900	2	0.22
Lagoon Point, Whidbey Island	Island	412	3	0.73

Next steps

- Local outreach and education
- Formalize spring-time response
- Review/assess possible impacts

Confirmed: Lummi Now Home to Invasive European Green Crab

Submitted by: Karl W. Mueller, Lummi Natural Resources Department

The first ones detected in the Salish Sea were found in the Sooke Basin, Vancouver Island in 2012. In less than five years, single sojourners were detected south of the US-Canada boundary along the west side of San Juan Island, the Strait of Juan de Fuca, Whidbey Island, and Padilla Bay. In May 2019, remains of one were picked up in Squalicum Harbor, and by July, the invader was captured in Chuckanut Bay. When several live specimens of variable size were collected in Drayton Harbor last month by the Washington Department of Fish and Wildlife, it was not hard to imagine that the creature might be spied somewhere on Lummi's bountiful tidelands. And when intrepid

Lummi Natural Resources Department (LNR) staff members went on the prowl for it last week, find it they did, leaving no doubt that the invasive European green crab, Carcinus maenas, was well ensconced at Lummi.

While the account above suggests a recent environmental threat, the European green crab, or EGC, has actually resided in Washington State for more than 20 years. The earliest invaders landed along the open coast as planktonic larvae in the late 1990s, likely the result of ocean-roving ships purging their ballast waters near port prior to loading up with local cargo. Native to the Atlantic coasts of Europe and northern Africa, a fair amount of research has been conducted on the population in Willapa Bay, and of course, other West Coast bays and marshes where EGC colonized prior to the Evergreen State. Some of the very real concerns about EGC colonizing here are: 1) habitat destruction (e.g., it is a pernicious burrower) leading to altered shoreline ecosystems, 2) possible competition with or predation on small, native crab species such as juvenile Dungeness crab, and 3) the impact of EGC predation on local shellfish resources such as clams and oysters.

Using protocols adapted from the Washington Sea Grant (WSG) Crab Team, university specialists in the statewide response to the EGC invasion, LNR staff deployed several small minnow traps and fukui-style, collapsible traps at multiple

(Continued on Page 2 & 3)