

Stewardship Success Story:

Monitoring for the European Green Crab

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The Challenge

- Monitor 3 sites in Padilla Bay for the arrival of the invasive European Green Crab (*Carcinus maenas*).
- Monitor sites once a month from April - September.
- Gather baseline data on native crabs.

Background

The European green crab has the potential to change existing food chains and food webs by displacing native species. It may compete for food resources and habitat. It may also prey on native juvenile Dungeness (*Cancer magister*) and native shore crabs (*Hemigrapsus* spp.).



Photo courtesy of Dr. Sylvia Yamada²



Photo courtesy of Dr. Sylvia Yamada²

This omnivore is relatively unspecialized and can feed on a wide variety of prey that include over 150 genera of plants and animals (Armstrong and Jensen, 1998¹).

The green crab utilizes rocks, shells and other shelter in its juvenile stage, thus is in direct competition with the native crab, *H. oregonensis* for habitat.

¹Armstrong, D. and G. Jensen. 1998. *The biology and ecology of green crab. Abstracts of "The Exotic Green Crab: Potential Impacts in the Pacific Northwest", a Sea Grant Workshop, Feb 9-10, 1998, Vancouver, Washington.*

²Yamada, Sylvia Behrens, Alex Kalin and Christopher Hunt. "The aliens are here (& more are coming) - A look at aquatic nuisance species." *Sea Grant News* February 13, 2001. <http://www.seagrants.org/news/aliens_010213/20010213_aliases_yamada.html>.



The Approach

We monitored two sites in 2001:
Sullivan Minor and South Padilla.
We added a third site in 2002:
Bay View State Park.

Minnow traps were placed on the mud flat adjacent to a salt marsh located on the eastern shore about mid-bay (Sullivan Minor). We placed traps in a recreational shellfish bed (oyster) at Bay View State Park, and on a mud flat in south Padilla Bay near the mouth of Indian Slough.

Each site was monitored once a month from April



through September. Three minnow traps were baited with Friskies™ Salmon Dinner cat food, placed 30 feet apart in a triangular pattern in the intertidal zone during low tide, left for a 24-hour soak period, then were retrieved. For all crabs trapped, carapace width and sex were recorded.

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National Estuarine
Research Reserve

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Our Success

We have not caught any green crab (*Carcinus maenas*) in the four years we have monitored. We have caught native crabs; the data is summarized below.

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	2001	2001	2002	2002	2003	2003	2004	2004
<i>Hemigrapsus oregonensis</i>	Male	Female	Male	Female	Male	Female	Male	Female
Sullivan Minor Marsh	63	6	63	10	145	17	233	56
Bay View State Park	n/a	n/a	16	6	38	3	78	9
South Padilla	75	26	54	14	55	6	80	19
Total <i>H. oregonensis</i>	138	32	133	30	238	26	391	84
<i>Hemigrapsus nudus</i>	Male	Female	Male	Female	Male	Female	Male	Female
Sullivan Minor Marsh	0	0	0	0	0	0	0	0
Bay View State Park	n/a	n/a	0	0	0	0	0	0
South Padilla	1	1	2	0	0	0	0	0
Total <i>H. nudus</i>	1	1	2	0	0	0	0	0
<i>Cancer magister</i>	Male	Female	Male	Female	Male	Female	Male	Female
Sullivan Minor Marsh	0	0	15	0	0	0	0	0
Bay View State Park	n/a	n/a	20	0	8	0	14	0
South Padilla	2	0	2	0	1	0	0	0
Total <i>C. magister</i>	2	0	37	0	9	0	14	0
Total grapsids	174		202		274		489	
Total Pagurids	0		42		25		21	
Grand Total	174		244		299		510	



