

LiMPETS

Long-term Monitoring Program and
Experiential Training for Students

LiMPETS is a citizen science program that helps youth develop a scientific understanding of the ocean by monitoring rocky intertidal and sandy beach ecosystems throughout coastal California. These publicly accessible, scientifically sound, long-term data are used to inform marine resource management organizations, the scientific community, and future students.

School Year 2018-2019 Education Highlights



**6,835
Students
served**

1,241 Students
took part in field
work thanks to
bus scholarships



**9 Professional
development
workshops provided**

Students contributed data from
198 field monitoring events
into the LiMPETS database



**2,487
Underserved students
participated**



Student Testimonials

"This was my most favorite field trip of the year! Because I want to study marine bio this was a great look into data collection methods!"

-Abby

"It was an amazing opportunity to see how data can actually cause change and the beach was amazing!"

-Anne

"I had an amazing time with LiMPETS and enjoyed contributing to give back to our environment and get involved in citizen science!"

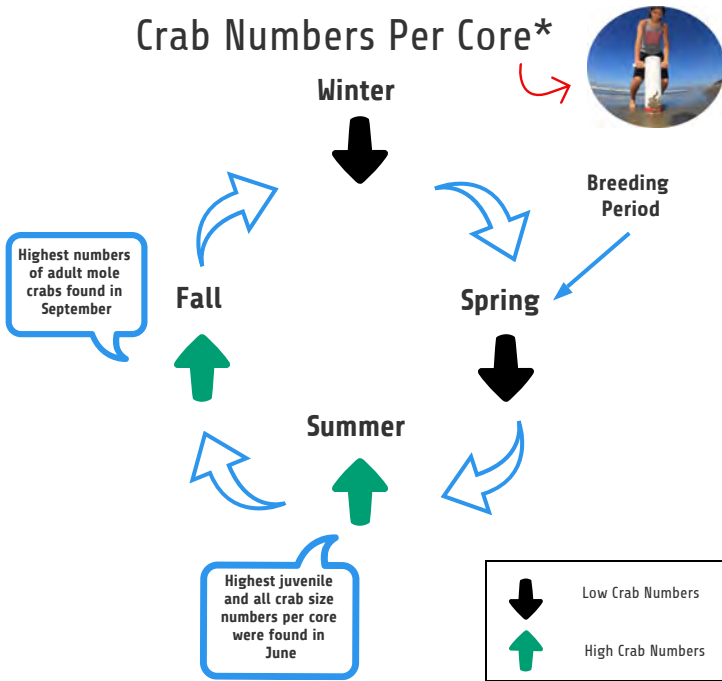
-Kate

LiMPETS Science Highlights



Student-collected data from Ocean Beach, San Francisco, CA in **2018** supports previous Pacific mole crab (*Emerita analoga*) research by scientists.

Crab Numbers Per Core*



Since the sea star wasting disease (SSWD) outbreak and resulting collapse of the Ochre Sea Star populations in 2014, LiMPETS has observed an ongoing recovery of these sea stars at our sites.

Average number of Ochre Sea Stars found per survey area** at Davenport Landing, Santa Cruz Area

★ = 1 Sea Star



Owl Limpet Sizes Inside vs. Outside California State Marine Protected Area (MPA) Sites

Why Monitor Owl Limpets?

People collect owl limpets to eat, taking mainly the largest. Because of their unique life cycle, the largest are usually female. People can easily collect all the large females, leaving only small males behind and destroying the population. Monitoring owl limpets inside and outside of CA MPA's helps evaluate how well our CA MPA's work to protect owl limpets and other harvested animals. LiMPETS wanted to know if we could detect a difference between owl limpet size for limpets measured inside vs. outside of CA MPA's at some of our monitoring sites.

Owl Limpet median size was twice as large inside CA MPA site (Fitzgerald Marine Reserve) vs outside CA MPA site (Pigeon Pt.)

Outside CA MPA Inside CA MPA



Owl Limpet size classes were larger inside CA MPA (Natural Bridges State Park) vs. outside CA MPA (Almar Ave, Santa Cruz) ***

Owl Limpet Sizes



No-take CA Marine Protected Areas (MPA's) are designed to protect and conserve marine species and habitats. LiMPETS data can help track the effectiveness of these areas over time.

2010 —

2016 & 2018 —

Want to know more? Please contact:
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 -Rosemary Romero, Greater Farallones Association, rromero@farallones.org

*10cm diameter core, 10cm depth
 **Per 10m² Sample Area
 ***Two sample K-S test p<0.05



GREATER FARALLONES ASSOCIATION

