

MARINe Rocky Intertidal Biological Monitoring



www.MARINe.gov

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MARINe

is a Partnership of Agencies, Universities
and Private Organizations





Our Mission is to monitor
the rocky intertidal community on a
long-term basis and provide this
information to the public.

MARINe Status Highlights

- Core Monitoring
- Database
- Biodiversity Surveys
- Websites
- Cooperative Endeavors
- Education/Outreach/Policy



Types of MARINE Monitoring

- Core Surveys
- Biodiversity Surveys
- Other Surveys
 - Photo
 - Temperature
 - Motile invertebrates
 - Recruitment
 - Research studies

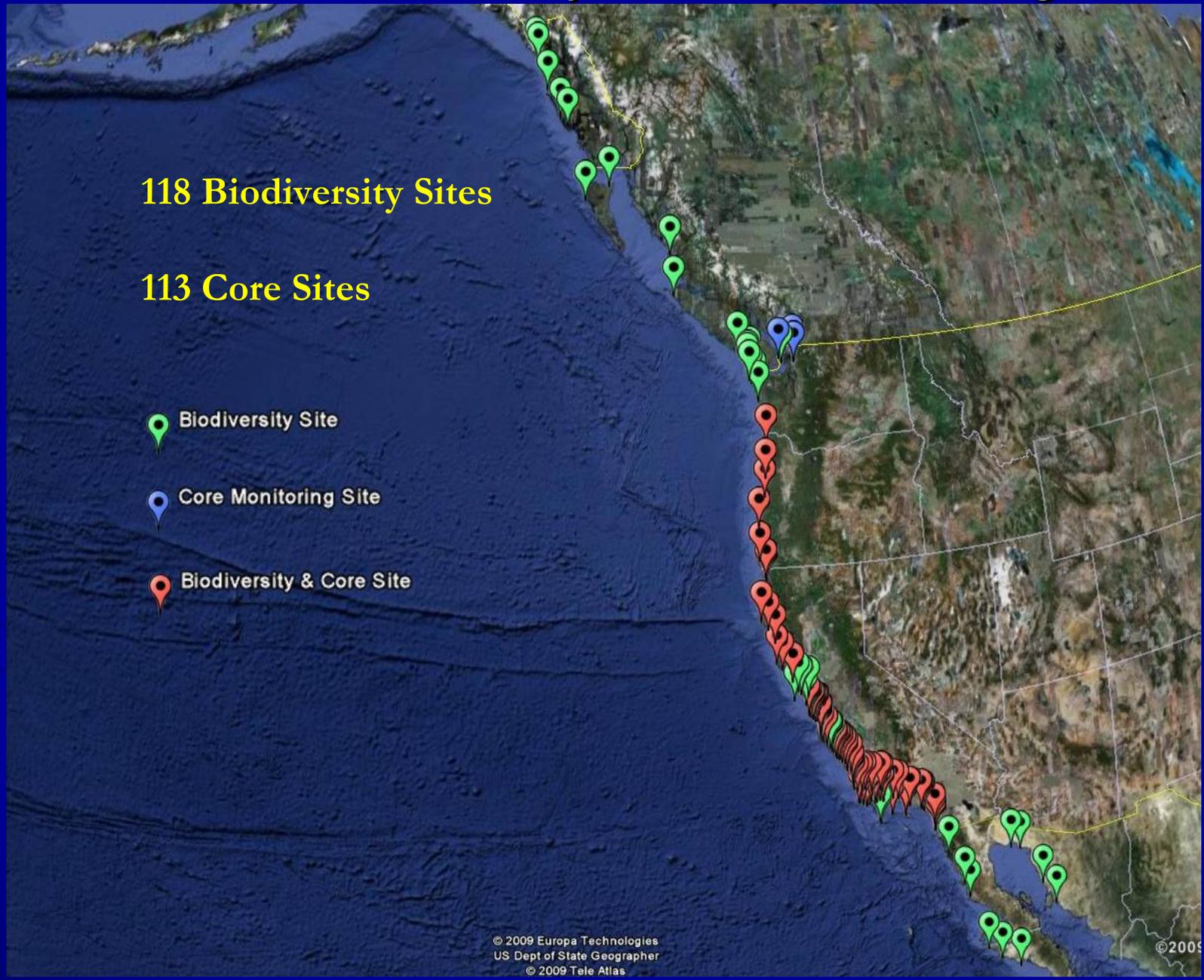


West Coast Biodiversity & Core Monitoring Sites

118 Biodiversity Sites

113 Core Sites

-  Biodiversity Site
-  Core Monitoring Site
-  Biodiversity & Core Site



Northern California Monitoring Sites

● Biodiversity

● Core

● Core and Biodiversity



Central California Monitoring Sites

● Biodiversity

● Core

● Core and Biodiversity

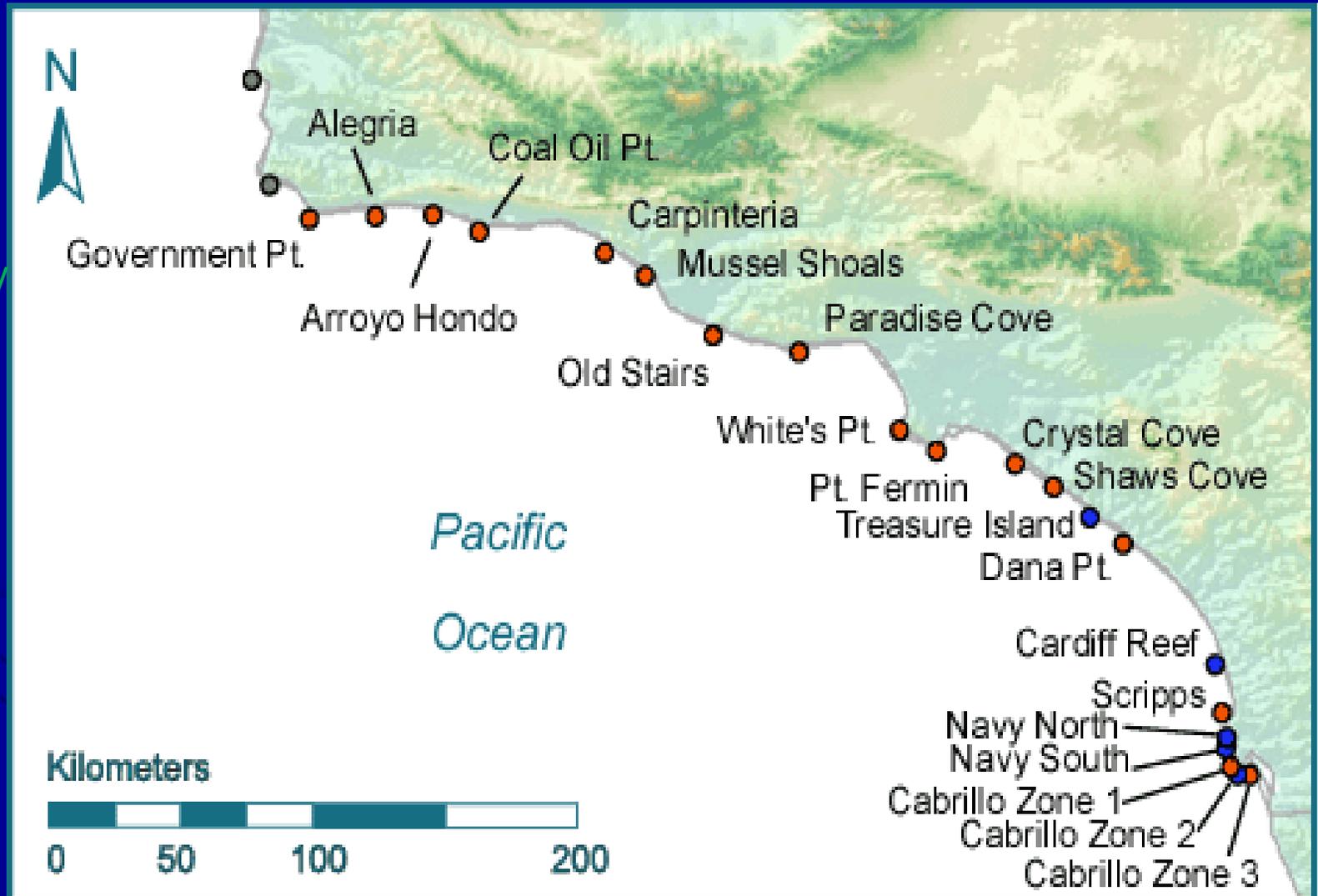


Southern California Monitoring Sites

● Biodiversity

● Core

● Core and Biodiversity

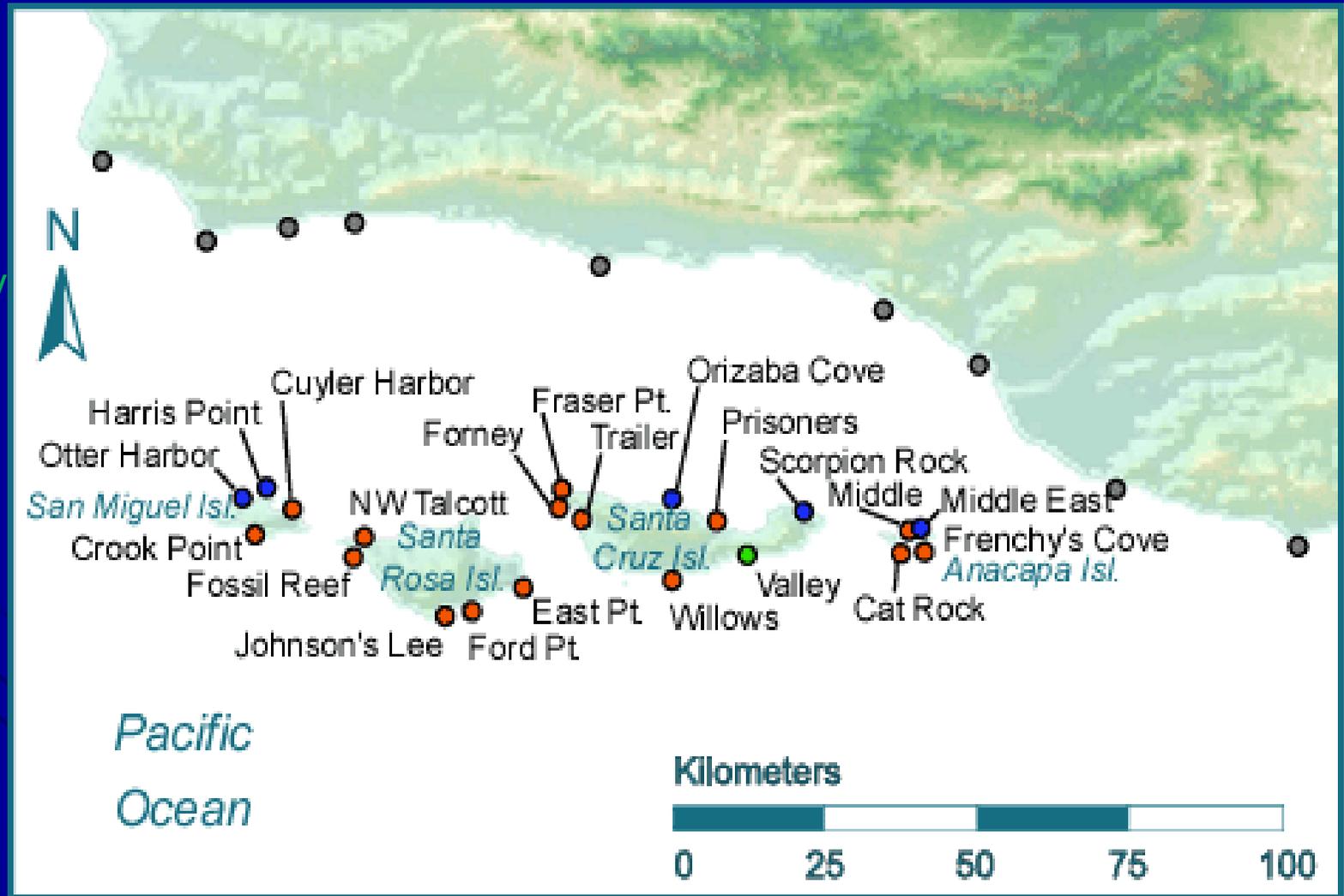


Northern Channel Islands Monitoring Sites

● Biodiversity

● Core

● Core and Biodiversity



Southern Channel Islands Monitoring Sites

● Biodiversity

● Core

● Core and Biodiversity



2008/2009 Core Monitoring

- 113 sites in California, Oregon, Washington; 9 Sites on East Coast (Maine, Massachusetts)
- 100 sites currently in MARINe Database
- 66 sites ≥ 10 yr; 19 sites ≥ 20 yr; 5 sites = 28yr



Core Surveys

- Targeted Assemblages of invertebrates and algae are photographed, counted and/or measured. Examples include: black abalone, seastars, surfgrass, mussels, acorn barnacles, owl limpets, *Endocladia muricata*, and several other types of algae.
- Surveys are conducted at least once a year and are conducted fall and spring at most sites.
- Most Southern California sites have been sampled since the 1980's or 1990's.

2008/2009 Biodiversity Surveys

- 118 sites from Alaska to Mexico
- 76 of 113 Core sites w/ Biodiversity surveys
- Overall: 54 sites sampled twice
18 sites sampled three times
- Biodiversity website: <http://cbsurveys.ucsc.edu>



Biodiversity Surveys

- Intended to allow extrapolation from core surveys to larger site.
- Provides documentation of rare species.
- Allows mapping of site to show how assemblages move across an area.
- Core team of highly trained biologists monitor all the sites; each site surveyed once every three or four years.

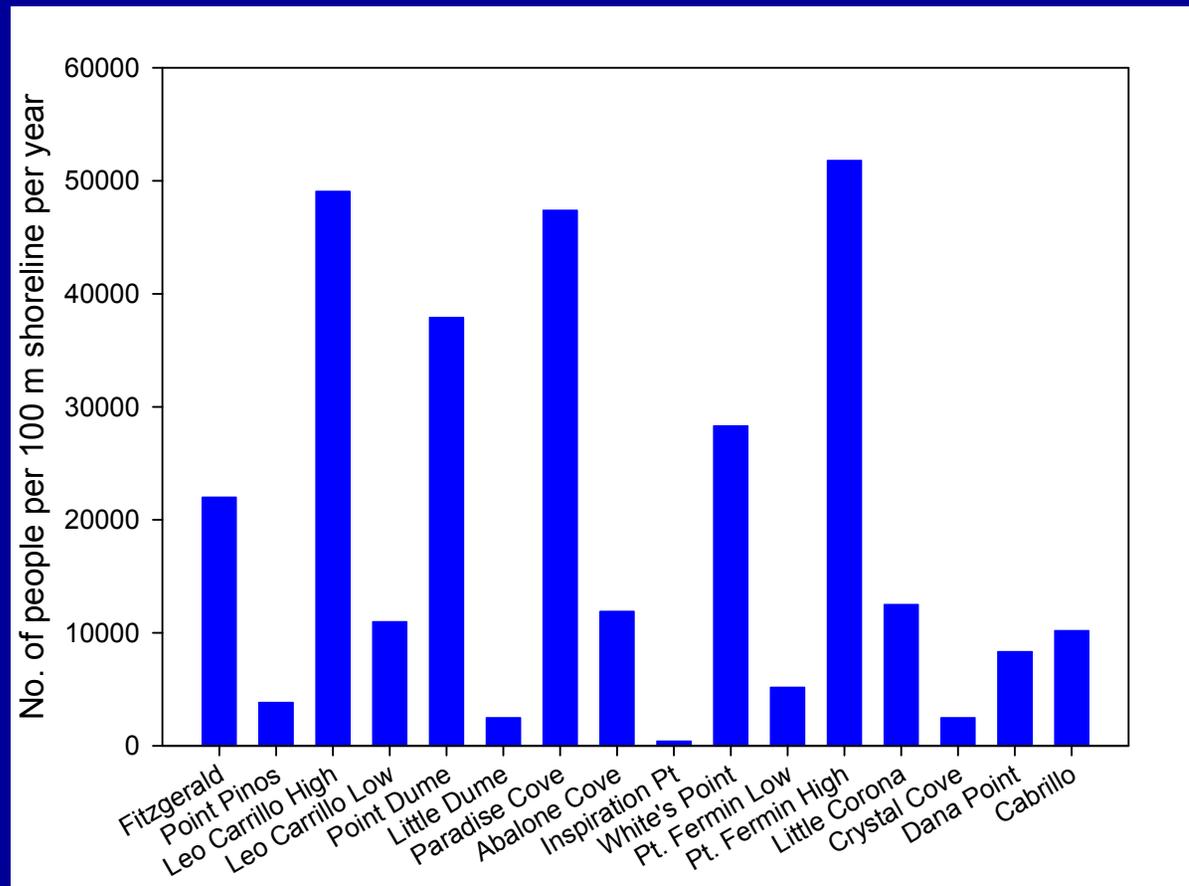
Intertidal Health: Human Impacts in Intertidal Communities

What is a healthy rocky intertidal community?

Natural disturbance vs human impacts?

How uniformly can ecologists classify disturbed/impacted communities based on survey data?

- Pollution
- Collecting
- Trampling



Data from various sources as summarized in Tenera (2003) and Ambrose and Smith (2005)

Southern California NOAA Mussel Watch Sites



Areas of Special Biological Significance



Black Abalone: Endangered Species!

