BEACH WATCH: SIMoN MARINE PROTECTED AREAS MAPPING TOOL

Adelaide Oneal
Stanford University
Farallones Marine Sanctuary Association
Kirsten Lindquist
Gulf of the Farallones National Marine Sanctuary
Jan Roletto
Monterey Bay National Marine Sanctuary
Steve Lonhart

Outline

- Background
- Objectives
- Methodology
- Results
- Next Steps
- Summary
- Acknowledgements

Background

- 1981 — GFNMS designated
- 1993 — Beach Watch program begins
- 1995 — FMSA created

NATIONAL MARINE SANCTUARIES ™
GULF OF THE FARALLONES

FMSA

Background

- Networking
- Communication
- Directory of resources

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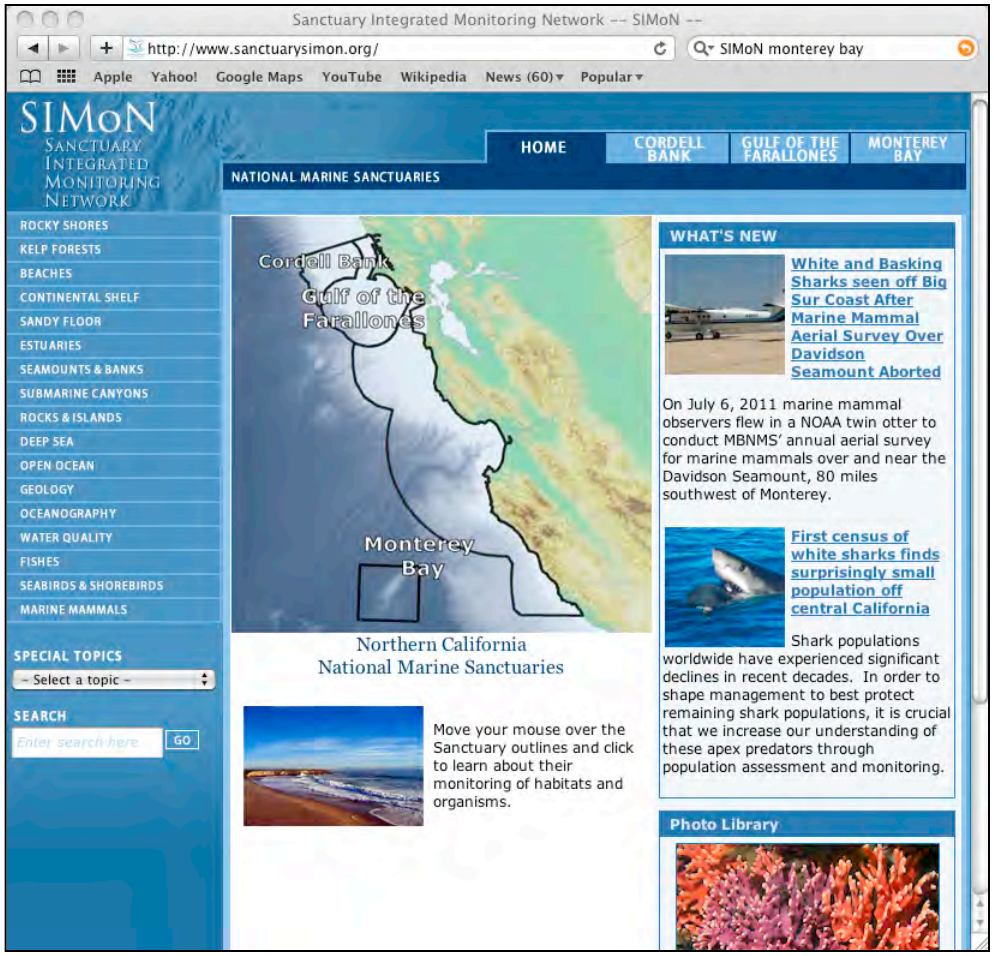
FMSA



Objectives

- Contribute to the characterization of sanctuary bird and mammal resources
- Contribute to the body of information to help determine resources at risk
- Increase awareness of availability and application of Beach Watch data to researchers, natural resource managers, and the public

Methodology

- Run queries
- Select photos
- Compile tables
- Create graphs
- Upload photos and data to SIMoN

Results

Doran Beach (1-06)
Pinnacle Gulch (1-07)
Dillon Beach (1-10)
Brazil Beach (7-01)
Pt. Reyes Beach A (1-14)
Pt. Reyes Beach C (1-16)
Limantour West (2-05)
Drakes East (2-04)
Drakes West (2-03)
Limantour East (2-06)
Bolinas Lagoon, Dipsea Road (6-01)
Seadrift (2-14)
Bolinas Beach (2-13)
Muir Beach (2-19)
Rodeo Beach (2-23)
Kirby Cove (2-30)
Baker Beach (3-02)
Lands End (3-06)
China Beach (3-04)
Ocean Beach N. (3-08)
Ocean Beach C. (3-09)
Ocean Beach S. (3-10)
Thornton Beach N. (3-11)
Thornton Beach S. (3-12)
Sharp Park (3-15)
Montara Beach (3-27)
Fitzgerald Marine Reserve, Weinke Way (3-31)
Fitzgerald Marine Reserve, Entrance (3-32)
Fitzgerald Marine Reserve, Distillery (3-33)
Fitzgerald Marine Reserve, Frenchman's Reef (3-34)
Pillar Point/Mavericks (3-35)
Half Moon Bay, Naples (4-03)
Half Moon Bay, Frances (4-05)
Pomponio Headlands (4-14)
Pescadero (4-17)
Pebble Beach (4-20)
Gazos Creek (5-03)
North Point (5-06)
Cove Beach (5-09)
Bradley Beach (5-10)
Bodega Head
Point Reyes
Cordell Bank
National Marine
Sanctuary
Gulf of the Farallones
National Marine
Sanctuary
Farallon
Islands
San Francisco
San
Francisco
Bay
Half Moon
Bay
Monterey Bay
National Marine
Sanctuary
Point Año
Nuevo
N
0
10
20
Nautical Miles

Results

Point Reyes Beach A, 1-14, Marin County

Beach profiles showing seasonal change Mar 2007 (left), Oct 2007 (right).

Photo credit: GFNMS/FMSA

Results

Cumulative encounter rates (#/km) for the three most common dead marine mammal and bird species at Point Reyes Beach A (1-14), 1993-2011 (number of surveys= 397)			
California Sea Lion	0.063	Common Murre	0.662
Harbor Seal	0.021	Northern Fulmar	0.588
Northern Elephant Seal	0.011	Western Gull	0.113

Cumulative encounter rates (#/km) for the three most common live marine mammal and bird species at Point Reyes Beach A (1-14), 1993-2011 (number of surveys= 397)			
California Sea Lion	0.110	Sanderling	34.520
Cetacean (unidentified)	0.068	Brown Pelican	5.817
Harbor Seal	0.261	California Gull	12.157

Results

Highest rates of dead bird deposition on Point Reyes Beach A:

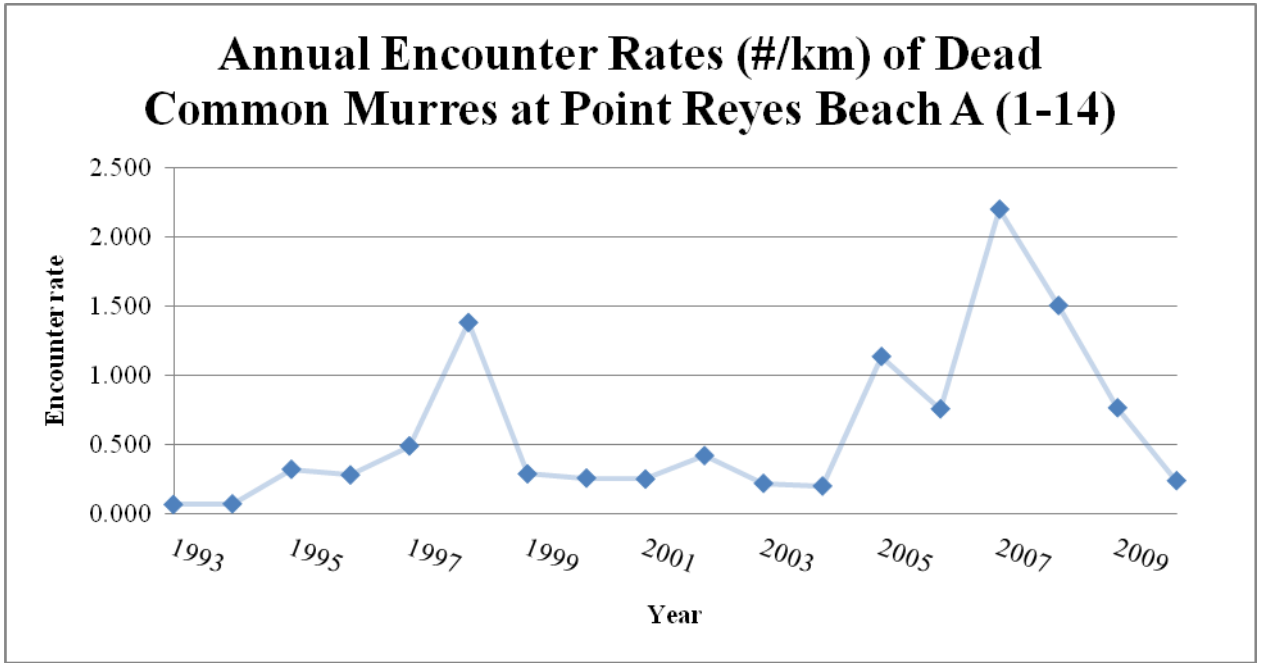
A. Common Murre, *Uria aalge*
0.219 individuals/km

B. Western Gull, *Larus occidentalis*
0.071 individuals/km

C. Northern Fulmar, *Fulmarus glacialis*
0.068 individuals/km

Photo credit: GFNMS/FMSA

Results


Annual Encounter Rates (#/km) of Dead Common Murres at Point Reyes Beach A (1-14)
Encounter rate
2.500
2.000
1.500
1.000
0.500
0.000
1993
1995
1997
1999
2001
2003
2005
2007
2009
Year

Results

Doran Beach (1-06)
Pinnacle Gulch (1-07)
Dillon Beach (1-10)
Tomasini Creek Beach (7-06)
Pt. Reyes Beach A (1-14)
Pt. Reyes Beach B (1-15)
Pt. Reyes Beach C (1-16)
Limantour West (2-05)
Drakes East (2-04)
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Bolinas Lagoon, Dipsea Road (6-01)
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Francisco
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Monterey Bay
National Marine
Sanctuary
Point Año
Nuevo
N
0
10
20
Nautical Miles

Results

Tomasini Creek Beach, 7-06, San Mateo County

Beach profiles showing seasonal change Aug 2010 (left), Dec 2010 (right).

Photo credit: GFNMS/FMSA

Results

Cumulative encounter rates (#/km) for the three most common dead marine mammal and bird species at Tomasini Creek Beach Beach (7-06), 1994-2011 (number of surveys= 307)			
California Sea Lion	0.002	Surf Scoter	0.049
Harbor Seal	0.001	Common Murre	0.025
		Western Grebe	0.025
		Glaucous-winged Gull	0.013

Cumulative encounter rates (#/km) for the three most common live marine mammal and bird species at Tomasini Creek Beach Beach (7-06), 1994-2011 (number of surveys= 307)			
Harbor Seal	0.044	Greater Scaup	10.620
		Double-crested Cormorant	9.465
		Bufflehead	7.234

Results

Highest rates of dead bird deposition on Tomasini Creek Beach:

A. Surf Scoter, *Melanitta perspicillata*
0.049 individuals/km

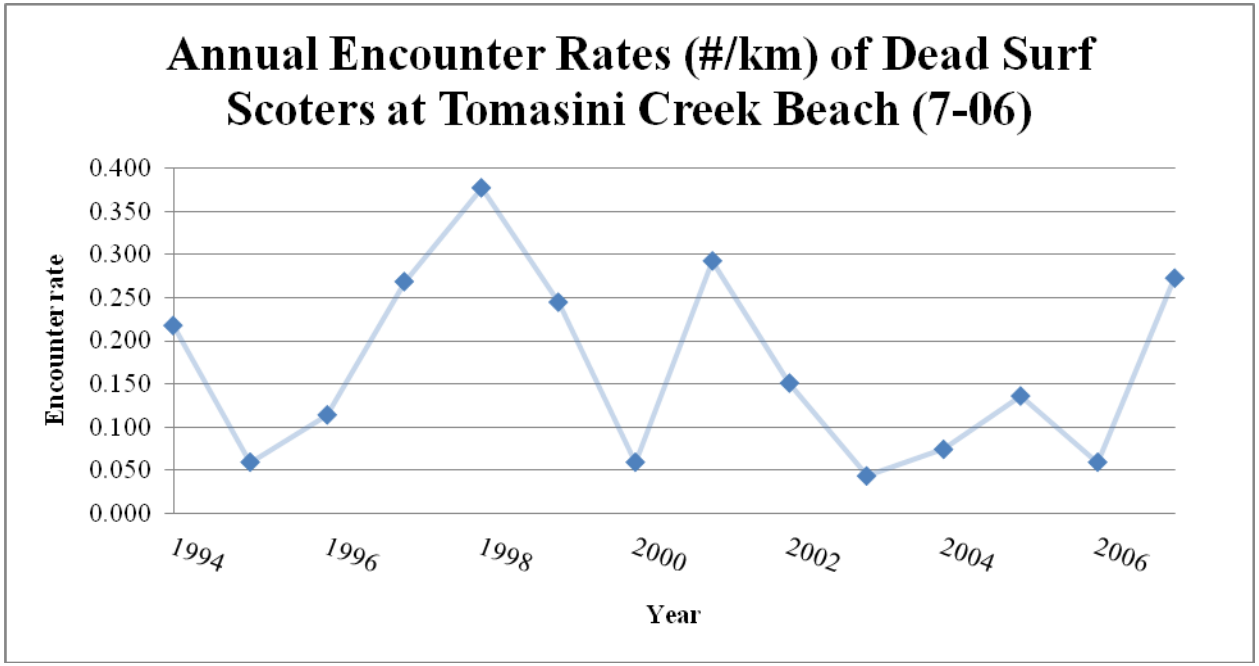
B. Western Grebe, *Aechmophorus occidentalis*
0.025 individuals/km

C. Common Murre, *Uria aalge*
0.025 individuals/km

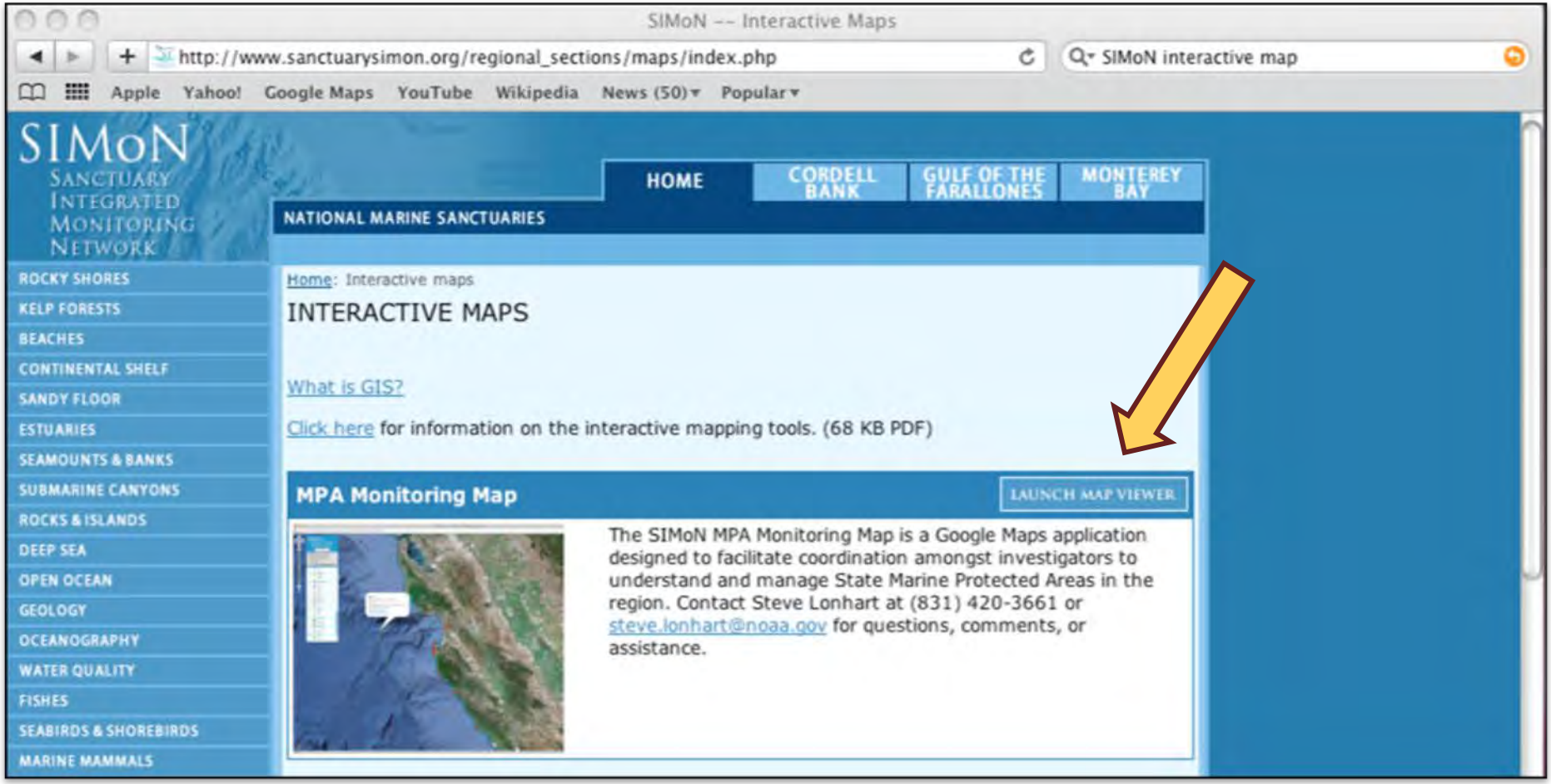
D. Glaucous-winged Gull, *Larus glaucescens*
0.013 individuals/km

Photo credit: GFNMS/FMSA

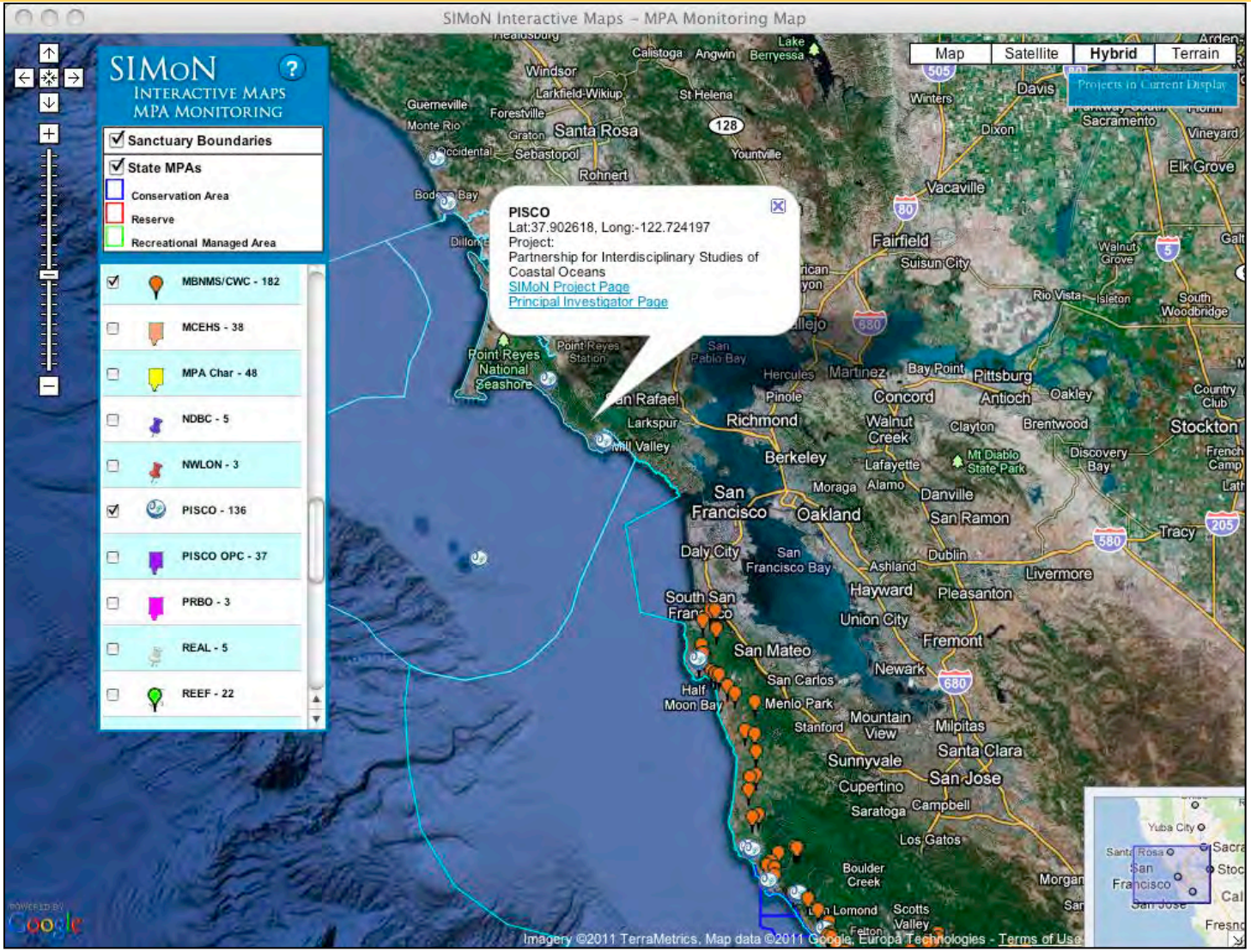
Results


Annual Encounter Rates (#/km) of Dead Surf Scoters at Tomasini Creek Beach (7-06)
Encounter rate
0.400
0.350
0.300
0.250
0.200
0.150
0.100
0.050
0.000
1994
1996
1998
2000
2002
2004
2006
Year

Next Steps


SIMoN -- Interactive Maps
http://www.sanctuarysimon.org/regional_sections/maps/index.php
SIMoN interactive map
Apple
Yahoo!
Google Maps
YouTube
Wikipedia
News (50)
Popular
SIMoN
Sanctuary Integrated Monitoring Network
HOME
CORDELL BANK
GULF OF THE FARALLONES
MONTEREY BAY
NATIONAL MARINE SANCTUARIES
ROCKY SHORES
KELP FORESTS
BEACHES
CONTINENTAL SHELF
SANDY FLOOR
ESTUARIES
SEAMOUNTS & BANKS
SUBMARINE CANYONS
ROCKS & ISLANDS
DEEP SEA
OPEN OCEAN
GEOLOGY
OCEANOGRAPHY
WATER QUALITY
FISHES
SEABIRDS & SHOREBIRDS
MARINE MAMMALS
Home: Interactive maps
INTERACTIVE MAPS
What is GIS?
Click here for information on the interactive mapping tools. (68 KB PDF)
MPA Monitoring Map
LAUNCH MAP VIEWER
The SIMoN MPA Monitoring Map is a Google Maps application designed to facilitate coordination amongst investigators to understand and manage State Marine Protected Areas in the region. Contact Steve Lonhart at (831) 420-3661 or steve.lonhart@noaa.gov for questions, comments, or assistance.

Next Steps


SIMoN Interactive Maps – MPA Monitoring Map
SIMoN
Interactive Maps
MPA Monitoring
Sanctuary Boundaries
State MPAs
Conservation Area
Reserve
Recreational Managed Area
MBNMS/CWC - 182
MCEHS - 38
MPA Char - 48
NDBC - 5
NWLON - 3
PISCO - 136
PISCO OPC - 37
PRBO - 3
REAL - 5
REEF - 22
PISCO
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Project:
Partnership for Interdisciplinary Studies of Coastal Oceans
SIMoN Project Page
Principal Investigator Page
Map
Satellite
Hybrid
Terrain
Projects in Current Display
Imagery ©2011 TerraMetrics, Map data ©2011 Google, Europa Technologies - Terms of Use

Next Steps

- **For resource managers:**
  - Photo access
  - Species at risk
- **For researchers:**
  - Examples of available data
  - Complimentary data set
- **For the public:**
  - Awareness of GFNMS, FMSA
  - Species recognition

Summary

Connecting Beach Watch to these SIMoN outreach tools will further improve planning and response strategies to vessel spills and boat groundings in GFNMS and MBNMS, enhance public awareness of the National Marine Sanctuaries, and increase the distribution and availability of the Beach Watch data to the public.

Acknowledgements

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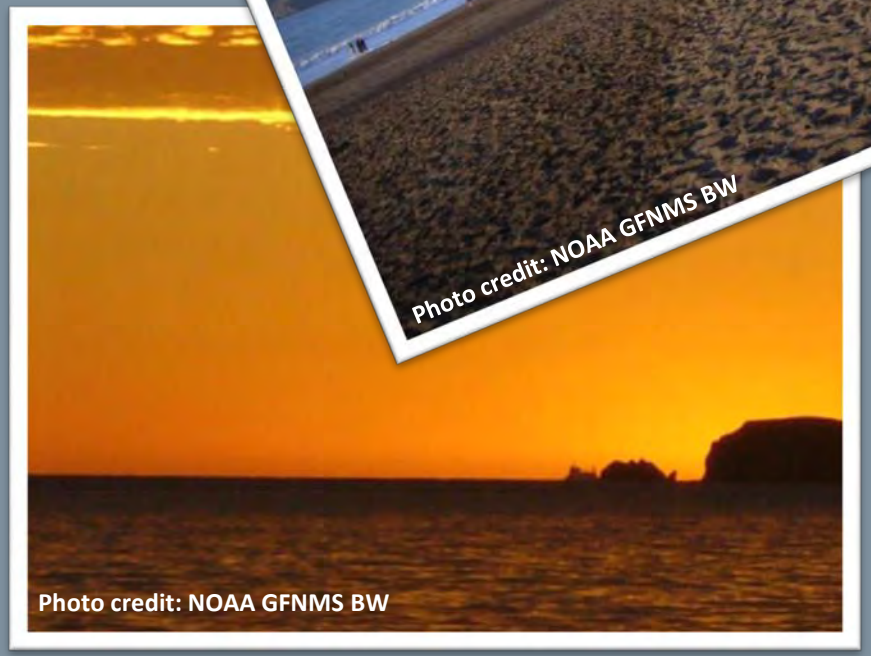
Beach Watch volunteers

NOAA Student Scholarships team

Regis and Associates