





















Central California

• 600,000 breeding seabirds

 8 million people (SF Bay Area)

Potential for disturbance is high!



Overview

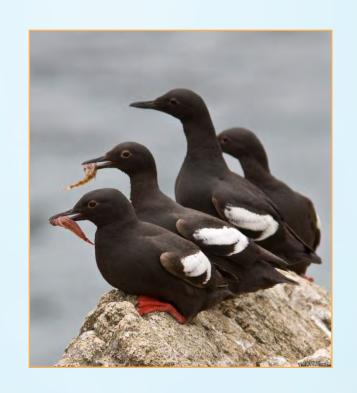
- Seabird Protection Network
 - 2010 Accomplishments
- Expanding the Network
 - Additional Chapters
- Future endeavors





Program Goal

 Improve the survival of central California's seabirds by reducing human disturbances at their breeding and roosting colonies on the central California coast.



Focal Species

- Surface-nesting specie
 - Common Murre
 - Western Gull
 - Pelagic Cormorant
 - Brandt's Cormorant
 - Brown Pelican
 - Double-crestedCormorant



Project Scope

- Bodega Bay—Point Sur
- Multi-faceted approach
 - Monitoring
 - Education & Outreach
 - Enforcement &CoordinatedManagement



Monitoring

- U.S. Fish & Wildlife Service
- Driving force
- Baseline > 9 years



Target Audiences

3 Main Sources

Low-flying aircraft

Fixed-wing; ultra-light; helicopters; blimps

Close approaching motorized/non-motorized boats



Kayaks; motor boats (rec & commercial)

General ocean users



Hikers; beach goers

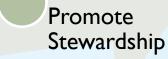
Target Audiences











Build Knowledge

Raise Awareness

- Accomplishments
 - Outreach efforts
 - April 2009 2025
 - Pilots posters, pilot guides, mailing, displays
 - Boaters posters, tide books (<u>3362</u>), signage,
 displays (REI/West Marine stores & harbors)











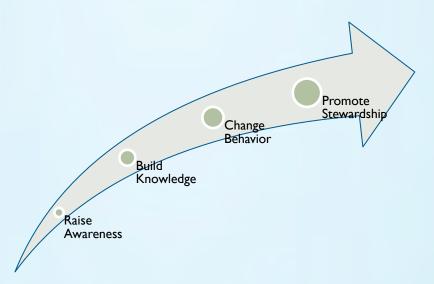
- Accomplishments
 - Established online network & engagement tool
 - Google Oceans, E-Newsletter (3), Website Refresh, FaceBook





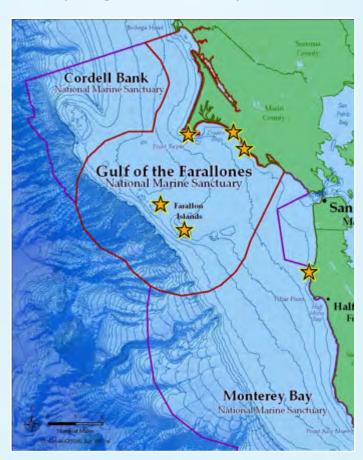
- Accomplishments
 - Strengthened partnerships
 - California Dept. Fish & Game
 - Boater's Guide to MPA's
 - Boater mailing
 - Drake's Bay, PRNS Interpretive Sign
 - Collaborating with GFNMS Education Team
 - Evaluate effectiveness

- Effectiveness
 - Largest challenge
 - Web-based info
 - Disturbance, yes but....

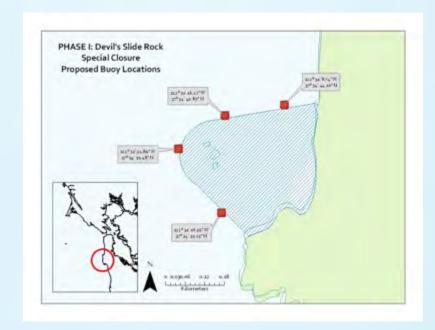


- Accomplishments
 - Adoption of 6 Special Closure areas (May 1, 2010)
 - Network staff were instrumental in establishing Special Closures areas, adopted by California Fish and Game Commission through the Marine Life Protection Act
 - Protection for breeding and roosting seabirds; rookeries and haul-out areas for marine mammals
 - Installing and maintaining year-round & seasonal buoys

- Demarcation Buoys
 - Devil's Slide Rock (4)
 - Pt Resistance Rock (2)
 - Dbl Pt/Stormy Stack (3)
 - Southeast Farallon Is. (8)
 - Pt. Reyes (4)
 - North Farallon Is. (3)
- 24 demarcation buoys

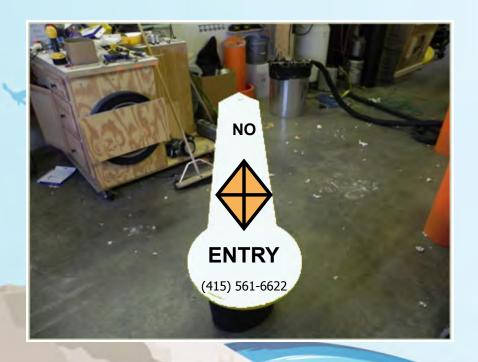


- Phase I
 - Devil's Slide Rock
 - 4 buoys
 - · Year-round
- Phase II
 - Pt Resistance Rock
 - Double Pt/Stormy Stack
 - Southeast Farallon Is.
 - North Farallon Is.
- Phase III
 - Pt. Reyes (if needed)



All Buoys **Year-round**







Enforcement & Coordinated Management

- Accomplishments
 - Recognized as a resource for managers
 - Brown Pelican roosting
 - Strengthened partnerships
 - Bureau of Land Management



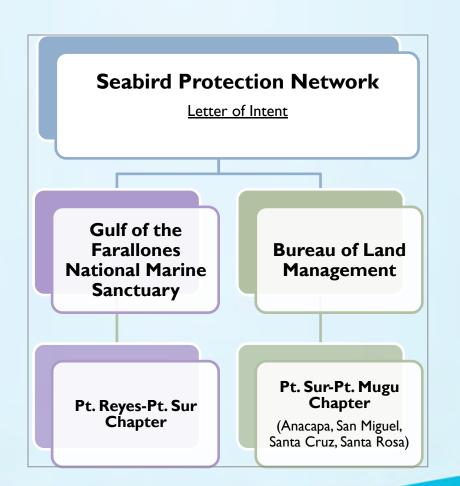


Expanding the Network

- Seabird Protection Network
 - 5 years funding Command Trustee Council
 - 20 years funding Luckenbach Trustee Council
- BLM awarded similar seabird restoration project
 - 5 years funding from Torch/Platform Irene Trustee Council
- Meeting of the Trustee Councils (June 2009)
 - Agreed on Chapter development (Audubon)
 - Coordination meeting (Dec. 2010)
- Montrose
 - Channel Islands

Expansion

- Seabird Protection
 Network
 - Bodega Bay to PointSur Chapter
 - Point Sur to PointMugu Chapter
 - Channel IslandsChapter



Future endeavors

- Boater's Guide to MPA's
- Strategic Planning
 - Achievements; Goals for seabird conservation (linked)
- Wildlife Disturbance Symposium
- Presenting at IMCC in May
 - From Chasing our Tail Feathers to Discovering Nesting Grounds:
 Understanding Human-use Patterns to Conduct Targeted
 Outreach for Seabird Protection
- Monterey presence







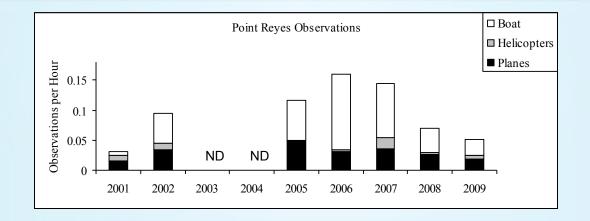


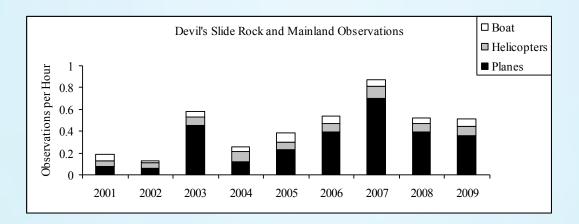
Observation rates

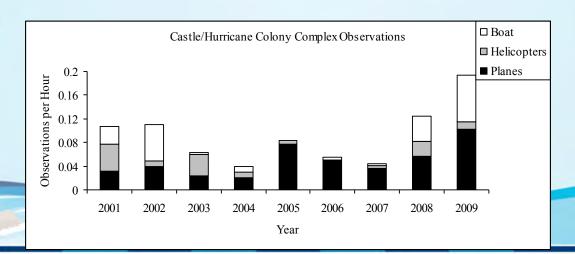
numbers observed per hour

2001 - 2009

- Aircraft that flew ≤ 1000 ft
- Vessels that approached within 1500 ft







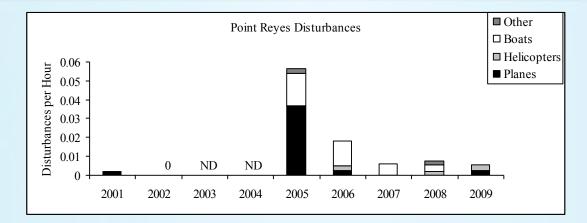
Disturbance rates

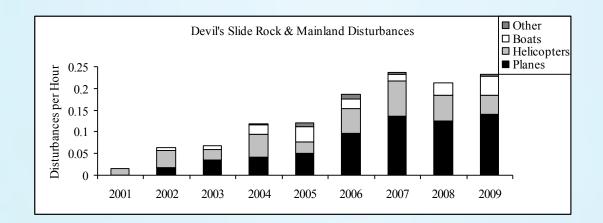
number of disturbance events per hour

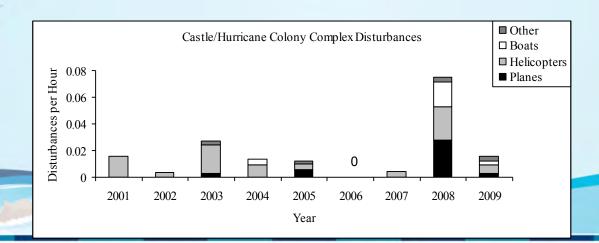
2001 - 2009

Events where adult birds were:

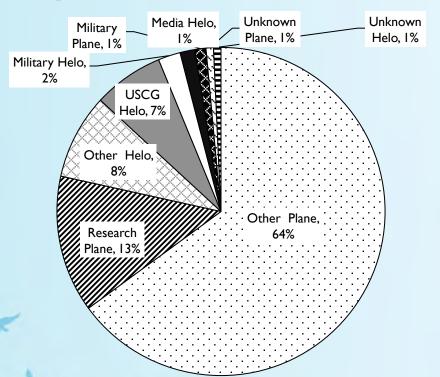
- Alarmed or agitated
- Flushed
- Displaced



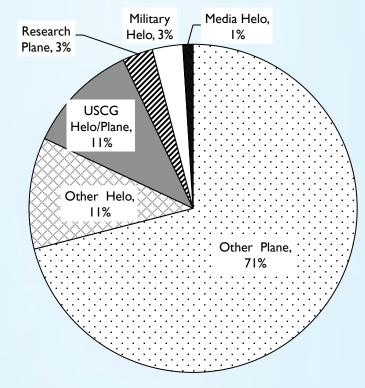




Observations by Aircraft Type

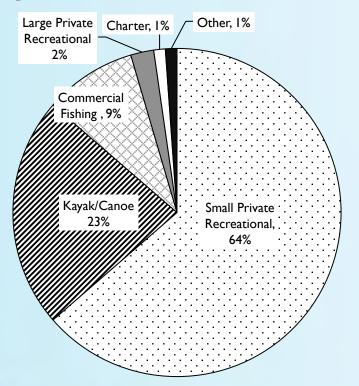


Disturbances by Aircraft Type

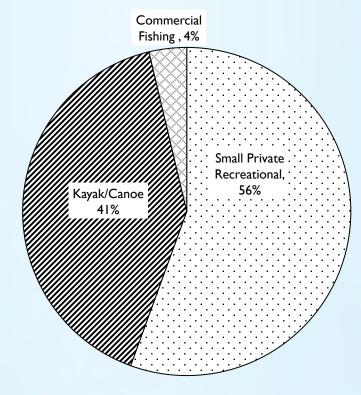


- 36% of aircraft overflights caused some form of disturbance
- "Other" (unmarked private or charter) planes and helicopters caused the most disturbance events

Observations by Vessel Type



Disturbances by Vessel Type



- 31% of watercraft caused some form of disturbance
- Recreational small private boats and kayaks were responsible for nearly all disturbances

Measuring effectiveness -

Percent change in disturbance rates at 3 colonies.

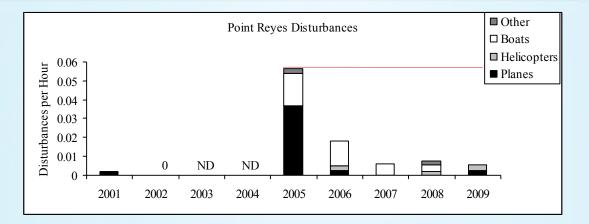
Percent change from baseline - 2005

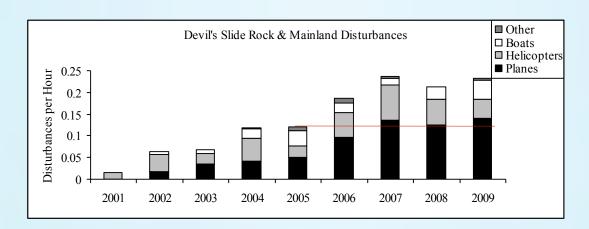
Timeframe	Year	Target	All 3 Colonies	Point Reyes	Devil's Slide	Castle
baseline	2005	baseline				
year 1/baseline	2006	baseline				
year 2	2007	-20%	30%	-89%	95%	-66%
year 3	2008	-40%	56%	-87%	76%	529%
year 4	2009	-60%	35%	-86%	91%	31%

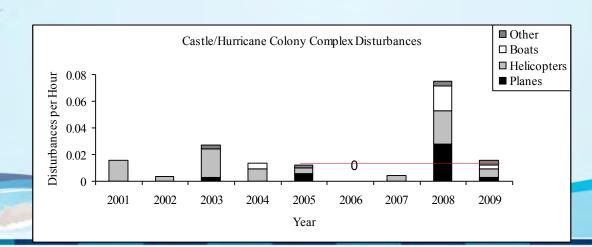
Measuring effectiveness

number of disturbance events per hour

Compared to 2005 baseline







Special Closures: Vessel Activity

U.S. Fish and Wildlife Service observations

	Obs	ervations	Disturbance		
	Sum	Average	Sum	Average	
Devil's Slide Rock (1991-2009)	327	25	98	11	
Pt. Reyes (1991-2009; no observations 2003 or 2004)	194	18	17	3.4	
Drakes Bay Complex (2005-2009)	76	15.2	13	3	

- Pt. Reyes Headlands
 - Mostly recreational fishing boats, approaching ~1500 ft. from headlands outside
 Special Closure Area
 - I 2 kayaks observed

Technical Advisory Committee

 Annual meetings (August 2011)

- Bureau of Land Management
- US Fish and Wildlife Service
- National Park Service
- CA Dept. of Fish and Game
- CA Coastal Commission
- CA Boating and Waterways
- CA State Lands Commission
- CA State Parks
- US Coast Guard
- NOAA

Timeline: Activities to Date

- August, 2009
 - Contract submitted to WASC for Devil's Slide
 - I bidder over budget
 - ______
 - MPA's were yet to be adopted

Evaluation: Overall Project

- Installing and maintaining 24demarcation buoys at once holds several challenges
 - Personnel, Vehicles, Vessels, Storage Facilities
- Installing equipment that can handle extreme oceanic conditions (100year storms) is costly and requires diligent maintenance
 - Need to balance the need to prevent marine debris with the need to prevent disturbance. Without tracking devices, there is no guarantee the buoys will be retrieved. If the buoys are not retrieved, it can be assumed they become marine debris!
- Break up the project in workable phases





Of 334 low overflights, flights below 1000', 96% resulted in wildlife disturbance





There is also an increased chance of bird strikes!

T/V Command

- Sept. 26, 1998 Vessel left SF Bay
- Southbound ~15 miles off the San Mateo County coast – released 3,000 gallons of IBF
- Sept. 30, 1998 Oil

Oil Spills » Restoration

- Military aircraft followed oil trail to Guatemala - intercepted by USCG
- Oil samples from Command matched mystery spill off San Mateo County coast

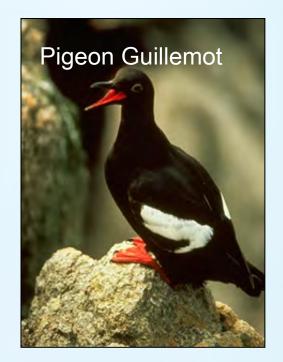


T/V Command

- \$4,000,000 in Natural Resource Damages
- Estimated > 1,500 birds killed (Common Murre & other seabirds)
- Miles of beaches lightly oiled
- Estimated\$113,386 in lost beach use
- Trustee agencies responsible for developing a restoration plan
 - Seabird Protection Network was a preferred project











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