

Nesting Snowy Plover Response to New Trail Use



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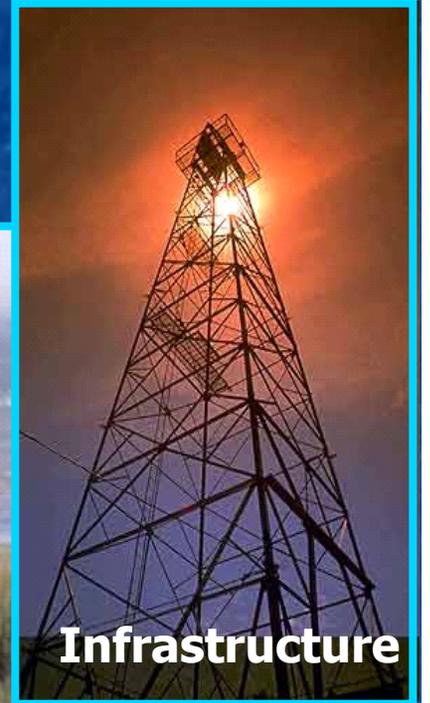
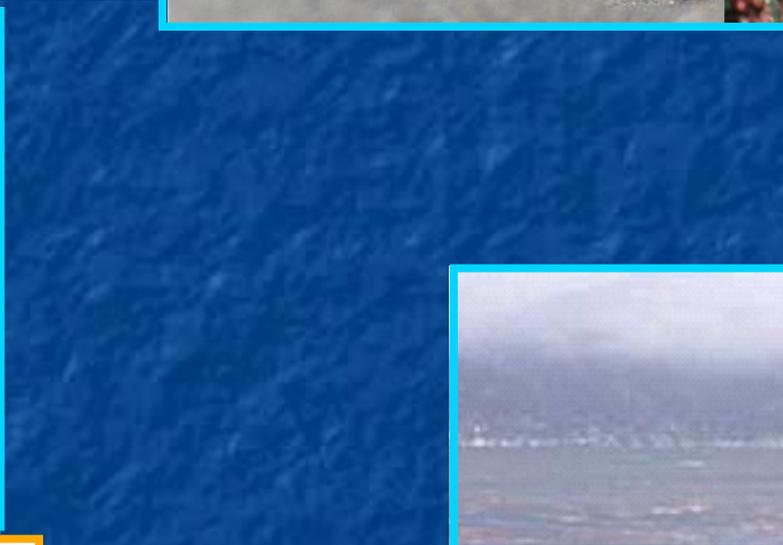
Six Project Objectives



Ecological Objectives



Water and Sediment Quality



Infrastructure



Public Access



Flood Protection



Invasive and Nuisance Species

Potentially-Competing Goals

Public access vs. wildlife protection



Balancing Public Access and Wildlife Needs

- Project is planning and implementing new public access = trails, overlooks, kayak launches
- Will public access reduce species protection?





Trails and Snowy Plovers

Trulio, Sokale, Nilsen, & Lafferty



Trails and Shorebirds

Trulio, Sokale, & Chromczak



Trails and Waterfowl

White (MS Thesis, SJSU)
Trulio, White, Sokale & Lafferty



Boats and Harbor Seals

Fox (MS Thesis, SJSU)
Gunvalson (MS Thesis, SJSU)

Nesting Snowy Plover Research Questions

- Do plovers respond differently to people who have disturbed them versus people they have not seen before?
- What is the flush rate and flush distance of nesting snowy plovers in response to new trail use?



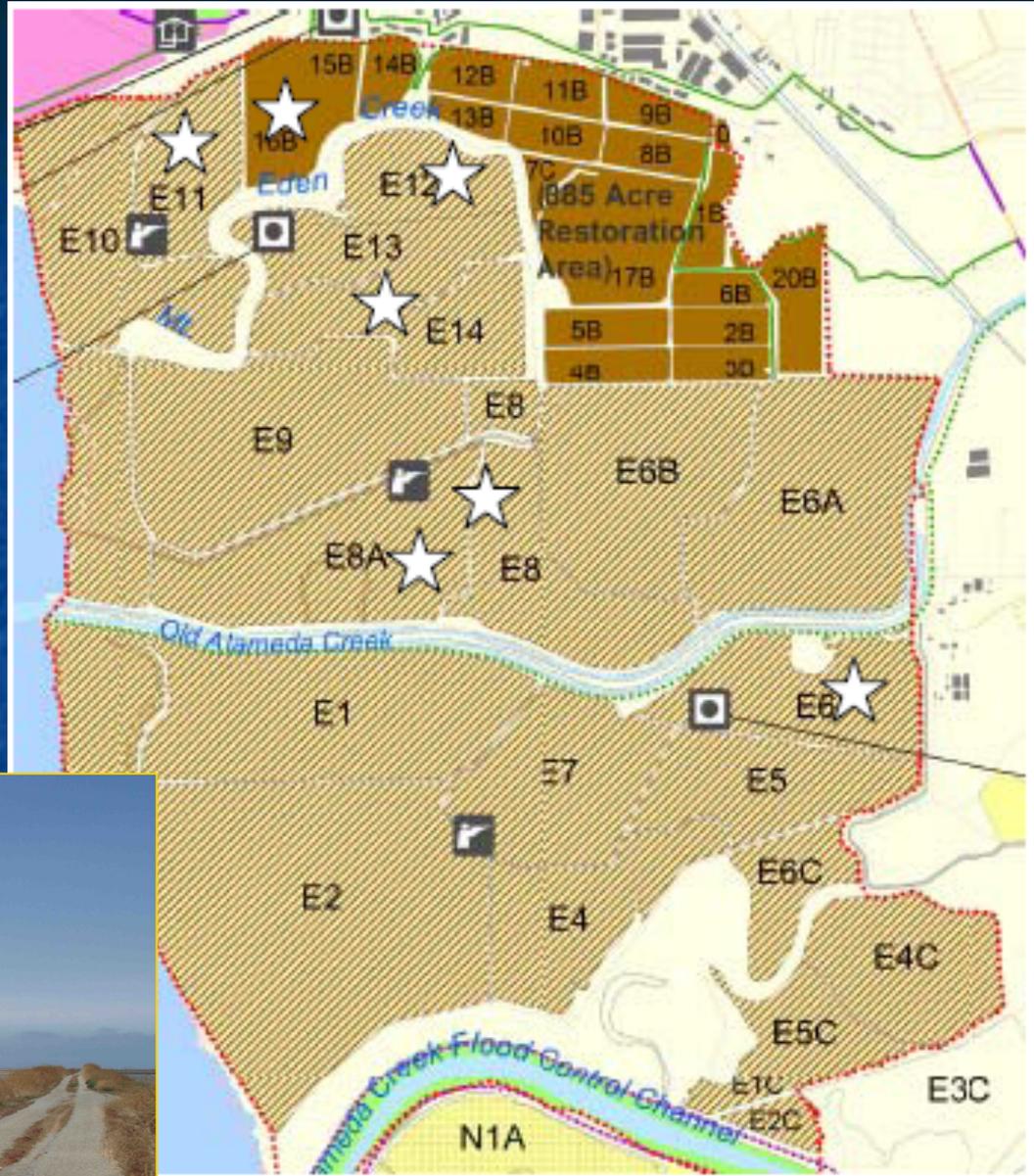
Study Methods

- March-August, 2010
- Seasonally-dry ponds in SBSP Project
- All nests located/GPS by SFBBO
- 1 trail walker along non-public levee
- Nests within 125m of levee
- Recorded nesting bird flush distance (stand up, move away, fly)
- Compared trail walkers, researcher walkers, and control trials

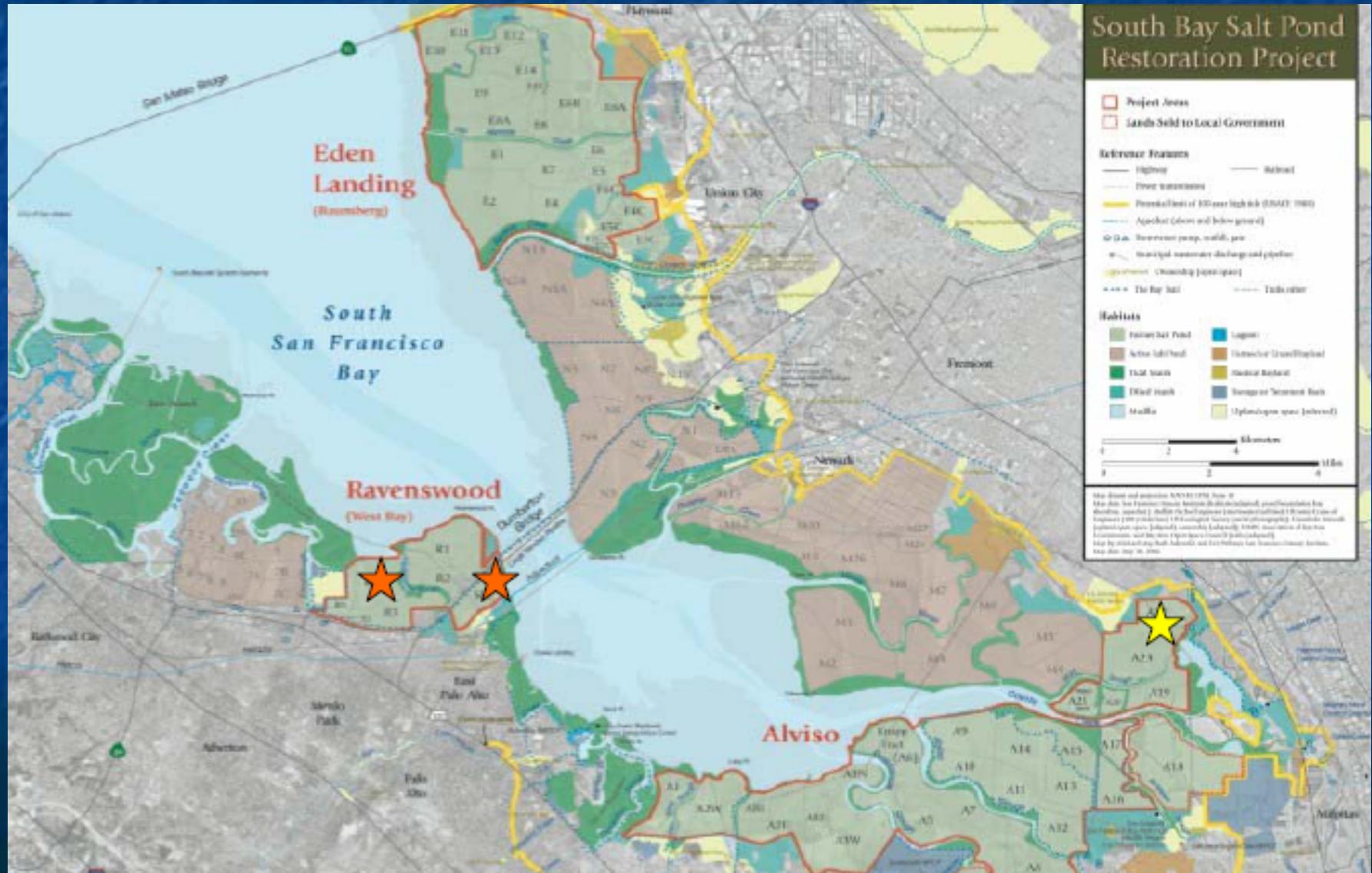


Photo by Mike Kern, SFBBO

Study
Sites:
Eden
Landing
Ponds

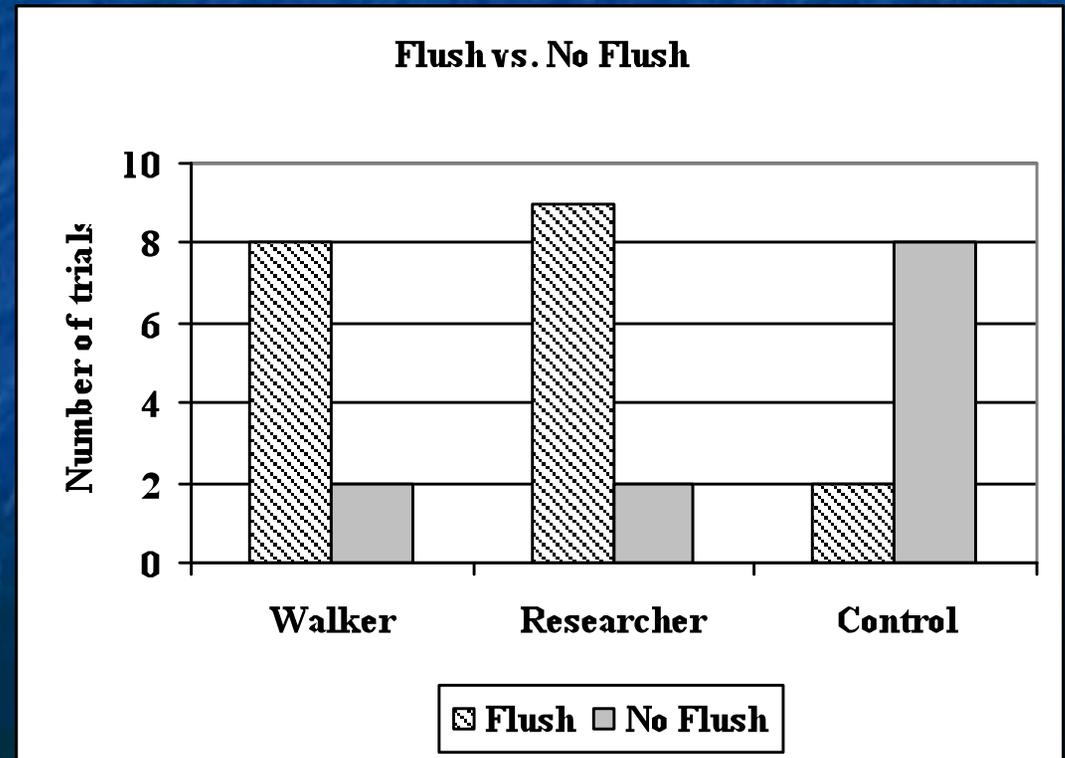


Study Sites: Ravenswood and Alviso Nest Location Ponds



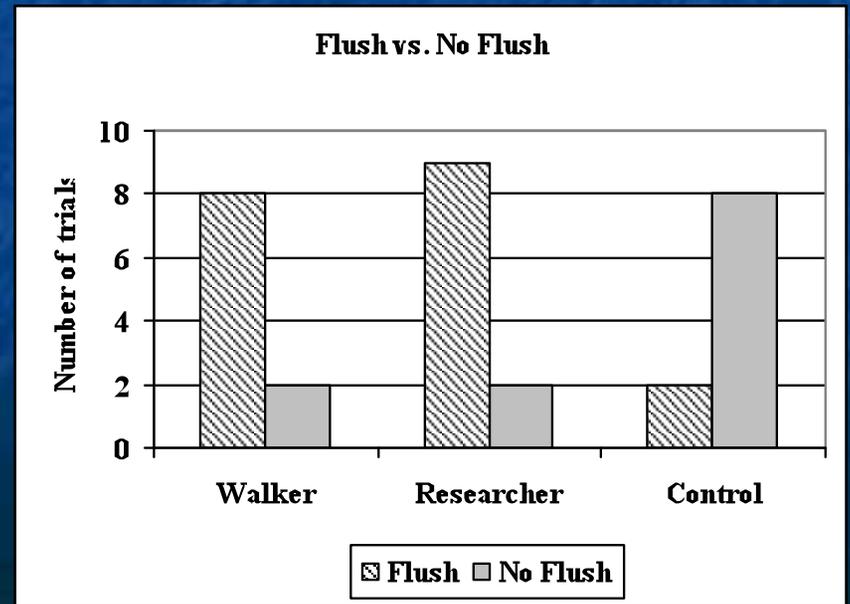
Preliminary Results: Researchers vs. Trail Walkers?

- 31 Trials Conducted:
11 researcher, 10 trail walker, 10 control
- No difference in flush distance to trail walkers vs. researchers
(Chi-Square = 0.01, df = 1, P=0.916)



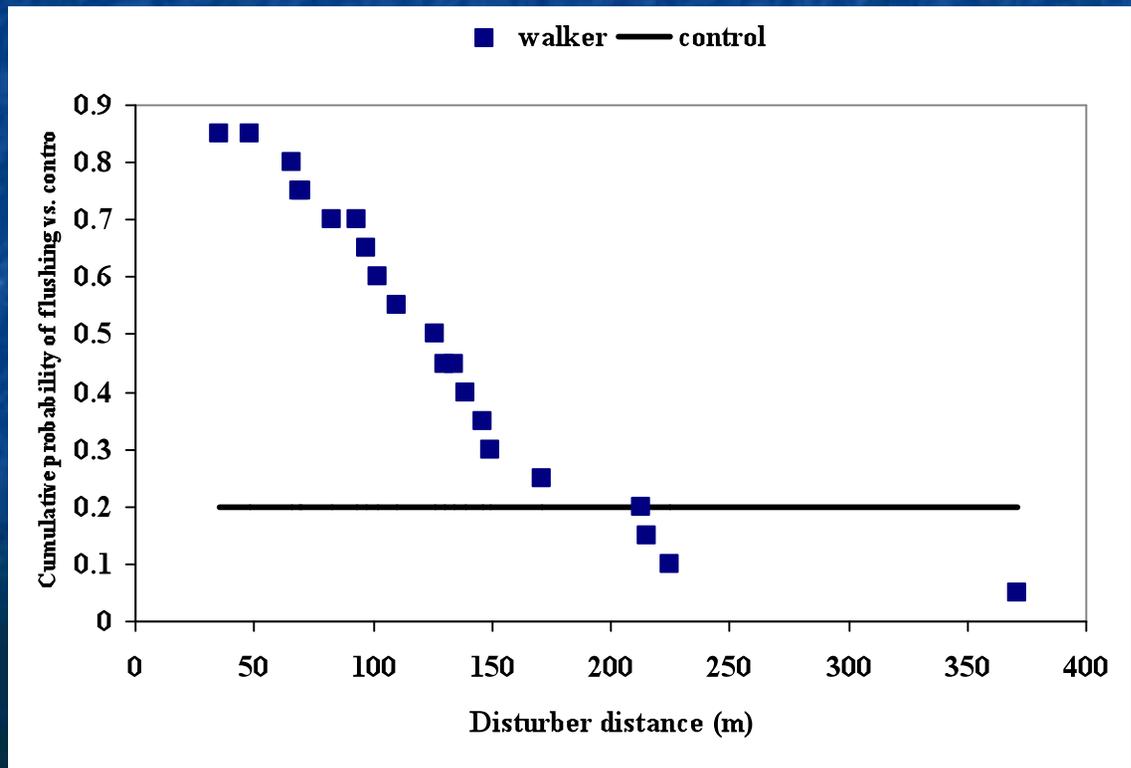
Flush Rates

- 4/21 birds during walker trials did not flush off nest as walker passed by
- Number of Trials resulting in flushes:
 - Birds flushed in ~80% of walker trials
 - Birds flushed in ~20% of control trials



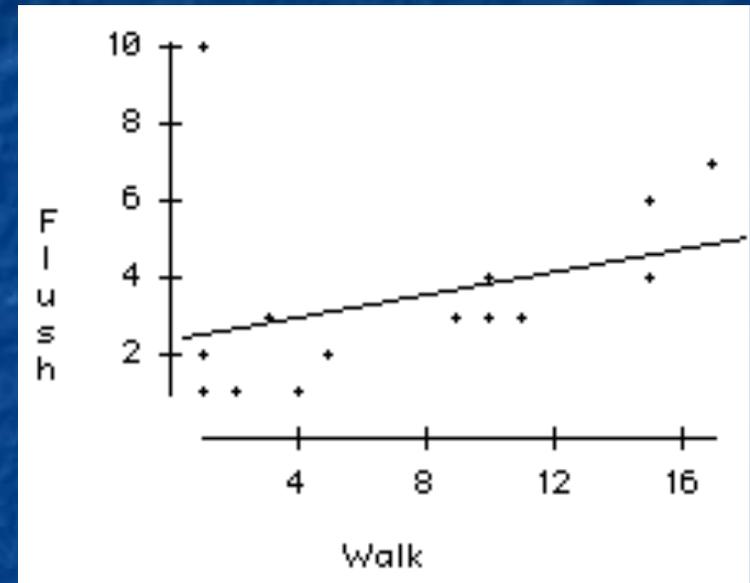
Flush Distance

- Average flush distance = 146m (SE 19m) (n=17)
- Cumulative Percent of Birds Flushing vs. Walker Distance - rate of flushing goes up quickly as walkers reach ~150m from nest



Other Findings

- Length of time off nest seems correlated with duration of walker trial ($r^2=0.405$, $p=0.136$, $n=15$)
- Flush distance not correlated with:
 - Scope-nest distance
 - Nest distance from levee
 - Age of nest



Western Snowy Plover and chick

© Jenny Erbes, PRBO

Management Considerations

- New trail use resulted in birds flushing at rates much greater than background levels.
- To avoid disturbance, site new trails at least 150m from nesting snowy plovers.
- Existing trails within ~150m of nesting birds may disturb nesting birds.
- Bird response to existing trails may differ from response to new trails.



Study Suggestions

- Quantify nesting plover response to existing trails (habituation)
- Determine source of background disturbances
- Estimate impacts of human disturbance on nest success
- Study factors contributing to birds staying on nests versus flushing



Public Access Research helps managers...

- Understand different species' sensitivities
- Design/locate features
- Determine the balance



Thanks to:

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