Balancing Waterbird Protection and Public Access

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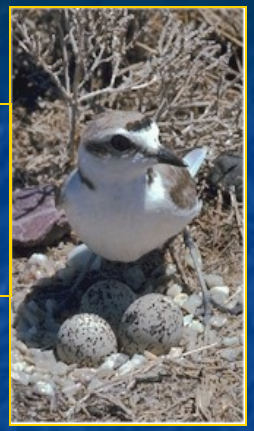
SBSP Management Questions:

Trails and Nesting Snowy Plovers
Trulio, Nilsen, Sokale & Lafferty



Trails and Waterfowl
Trulio, White, Sokale & Tokatlian

Trails and Shorebirds
Trulio, Sokale & Chromczak

Trail User Satisfaction
Trulio, Sokale & Chromczak

Basic Methods Applied to Each Waterbird Study

- Experimental approaches by 1 or 2 walkers
- Elevated, tangential approach
- Before, during and after walks
- Data collected on:
  - number of birds
  - species richness
  - bird behavior
  - flush distance and/or distance from trail walkers

Photo by Sam High

Nesting Snowy Plover Response to New Trail Use

- March-August, 2010 and 2011
- Experimental approach by one walker on non-public levees, mostly in Eden Landing
- Nests ≤125m from levee
- Observers 200m to 300m away from nest

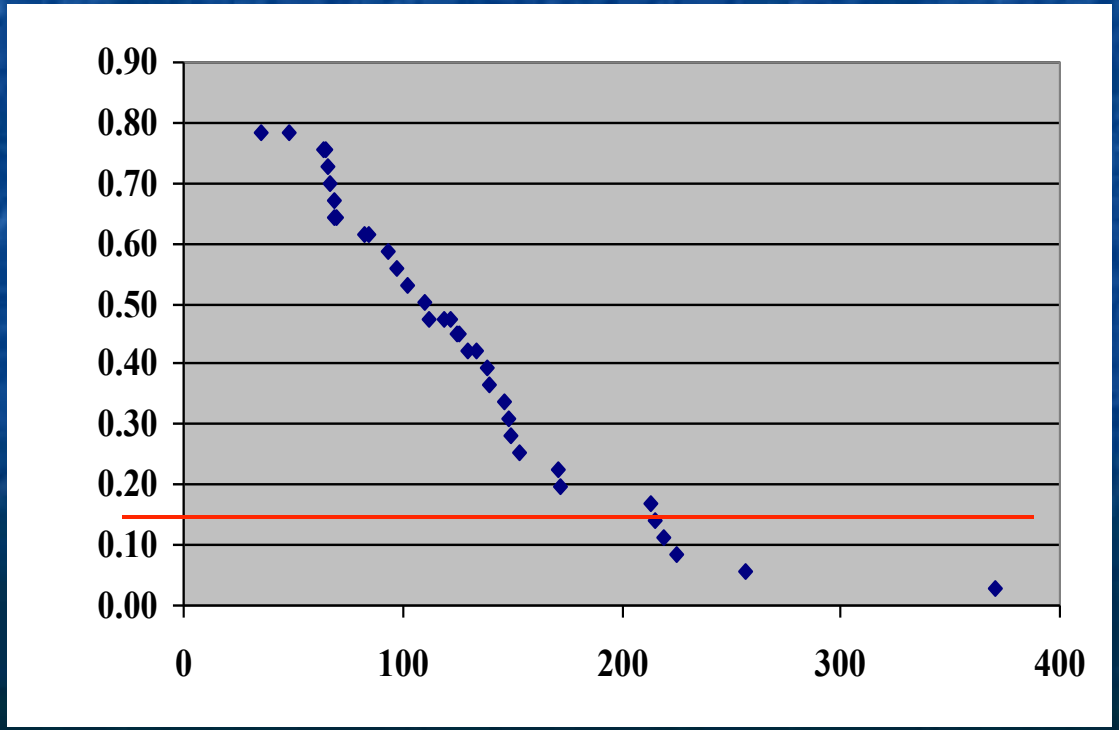
Results Flush Rate and Distance

Flush Rate:

72% of walker trials
11% of control trials

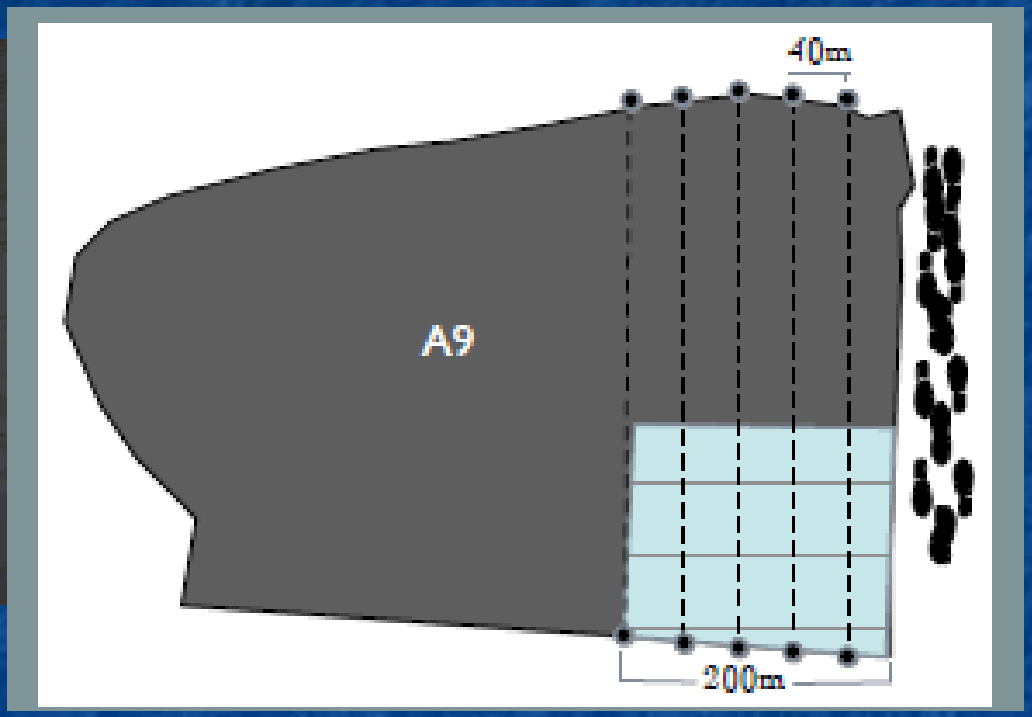
Flush Distance:

- Average flush distance = 145m (SE±14m; n=26)
- Cumulative Percent of Birds Flushing vs. Walker Distance – rate of flushing goes up quickly as walkers approach ~150m from nest



What about Wintering Waterfowl?

Photo by Sam High



- December 2006-March 2007, October-December 2007 & October 2010 to March 2011
- Approach by two walkers
- Public access trails - 5 sites; No public trails - 4 sites
- Deeper water, managed saltwater ponds

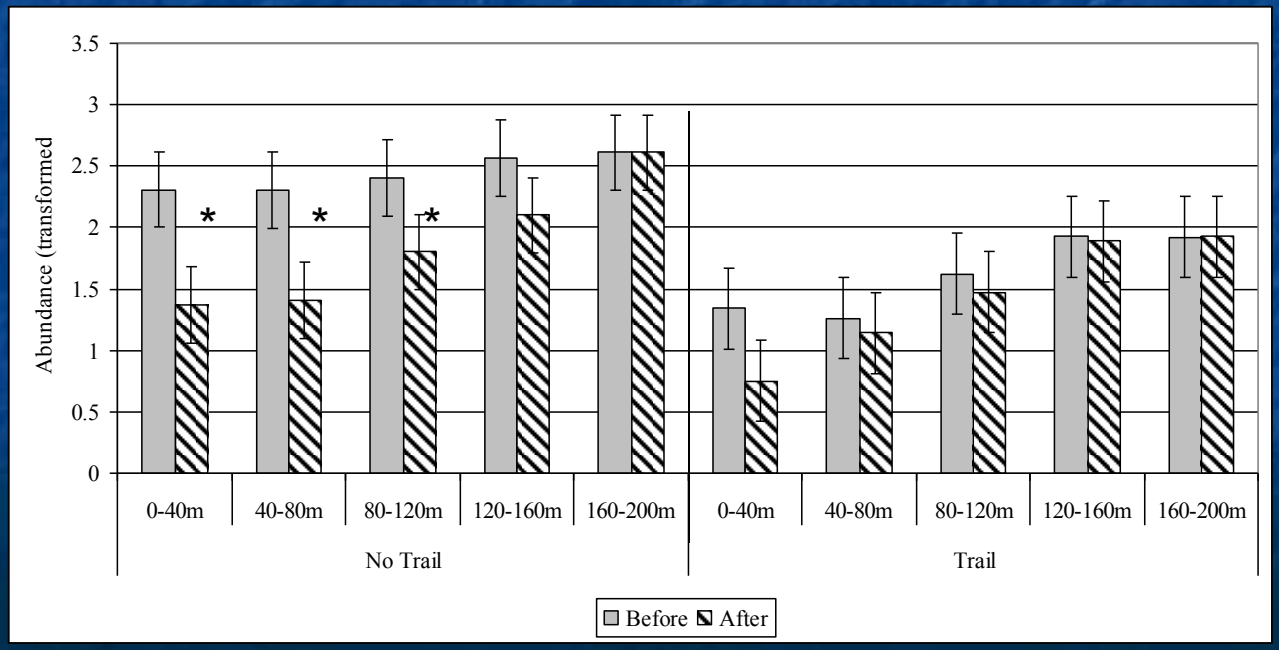
Typical Waterfowl Behaviors

Ducks Care A LOT!

Abundance Before vs. After Disturbance

- At no trail sites, fewer birds after walk
- And, fewer birds near the trail after than before the walk

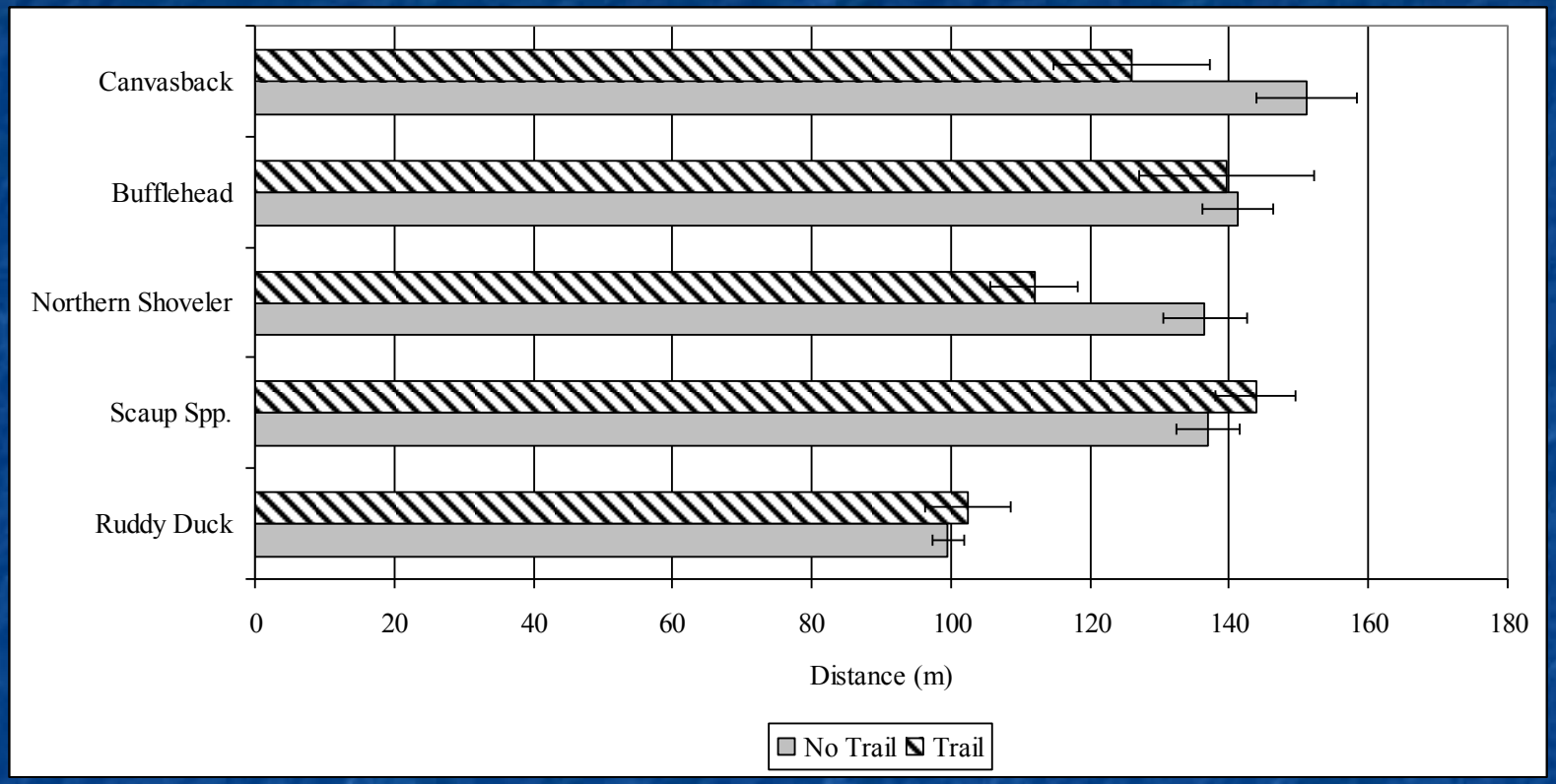
- At existing trails, no effect of trail walk
- And, numbers before and after walk = numbers at no trail sites after walk



Shoveler Flock Disturbance to Trail Users

Canvasback Disturbance to Trail Users

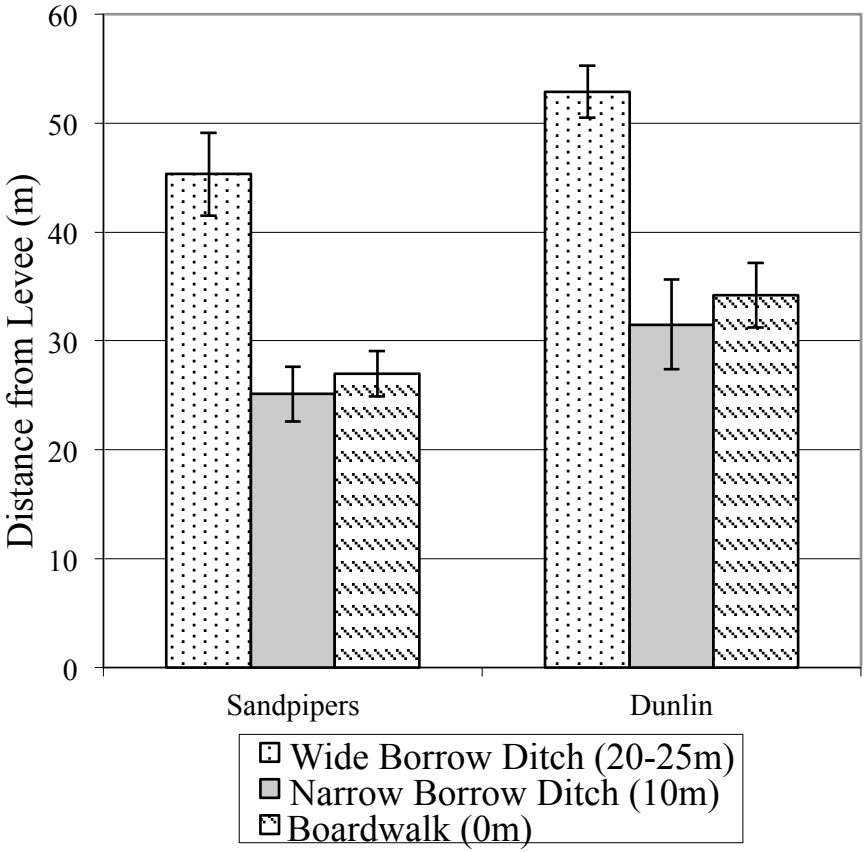
Results - During Walks



Distances of ducks from the trail ranged from approximately 100m to 150m, depending on the species

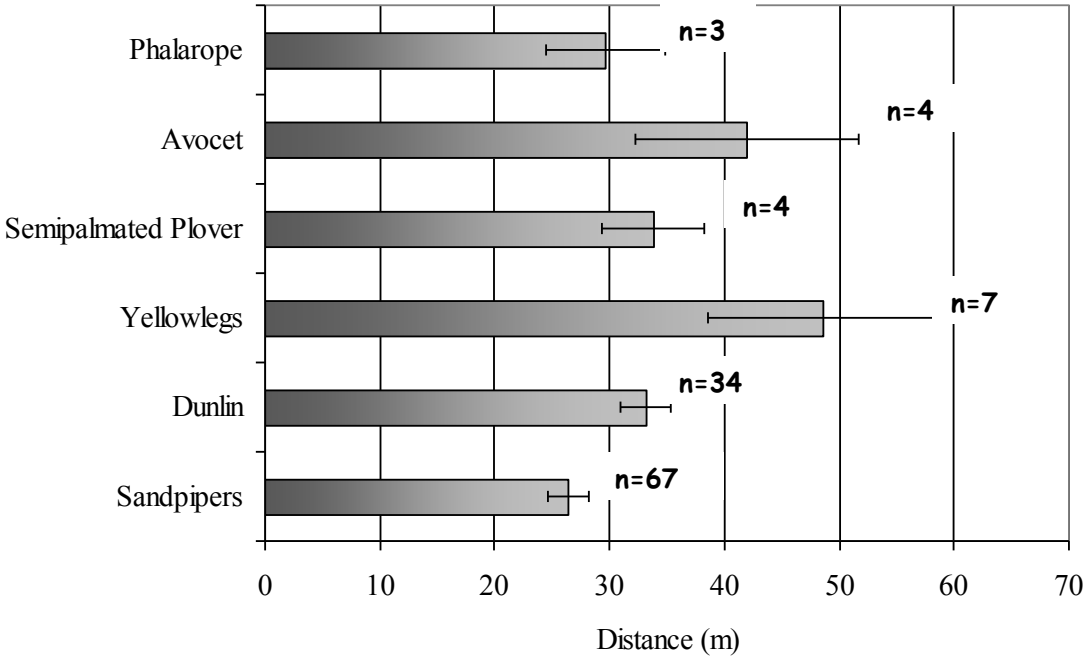
New Trails and Shorebirds

- Nov 2010 to May 2011
- Levees and boardwalks
- Shallow saltwater, managed, non-tidal ponds
- Varying borrow ditch widths



Distances of birds from levees during walks – 3 borrow ditch widths

Distances of birds from levees during walks – narrow & no ditch



Shorebird Results

Levee + Boardwalk: p=0.007, n=76

~6.5% fewer birds after vs. before

Trail User Satisfaction Study

Trails Surveyed

New Trails:

NASA's Moffett Field (A3W)

Alviso County Park

Existing Trails:

Bedwell Bayfront Park

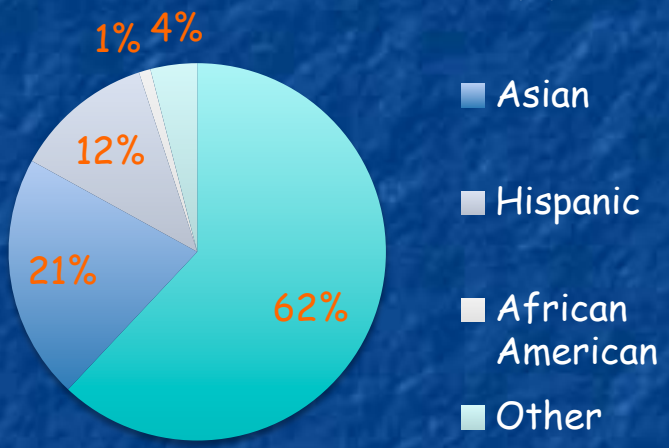
Charleston Slough

Eden Landing/Alameda Creek Trail

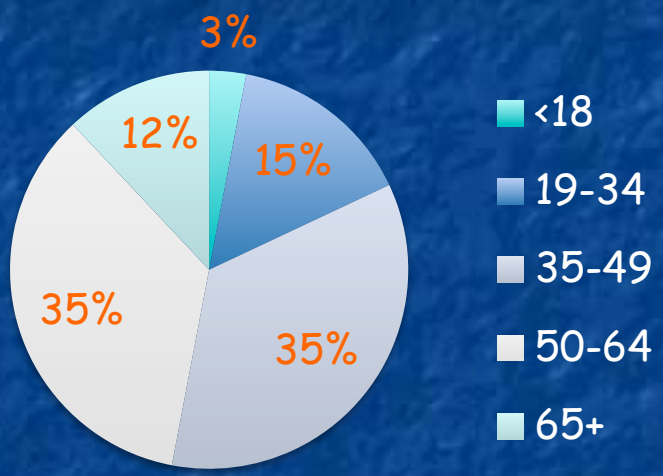
Trail User Demographics

568 Surveys Completed

Ethnicities



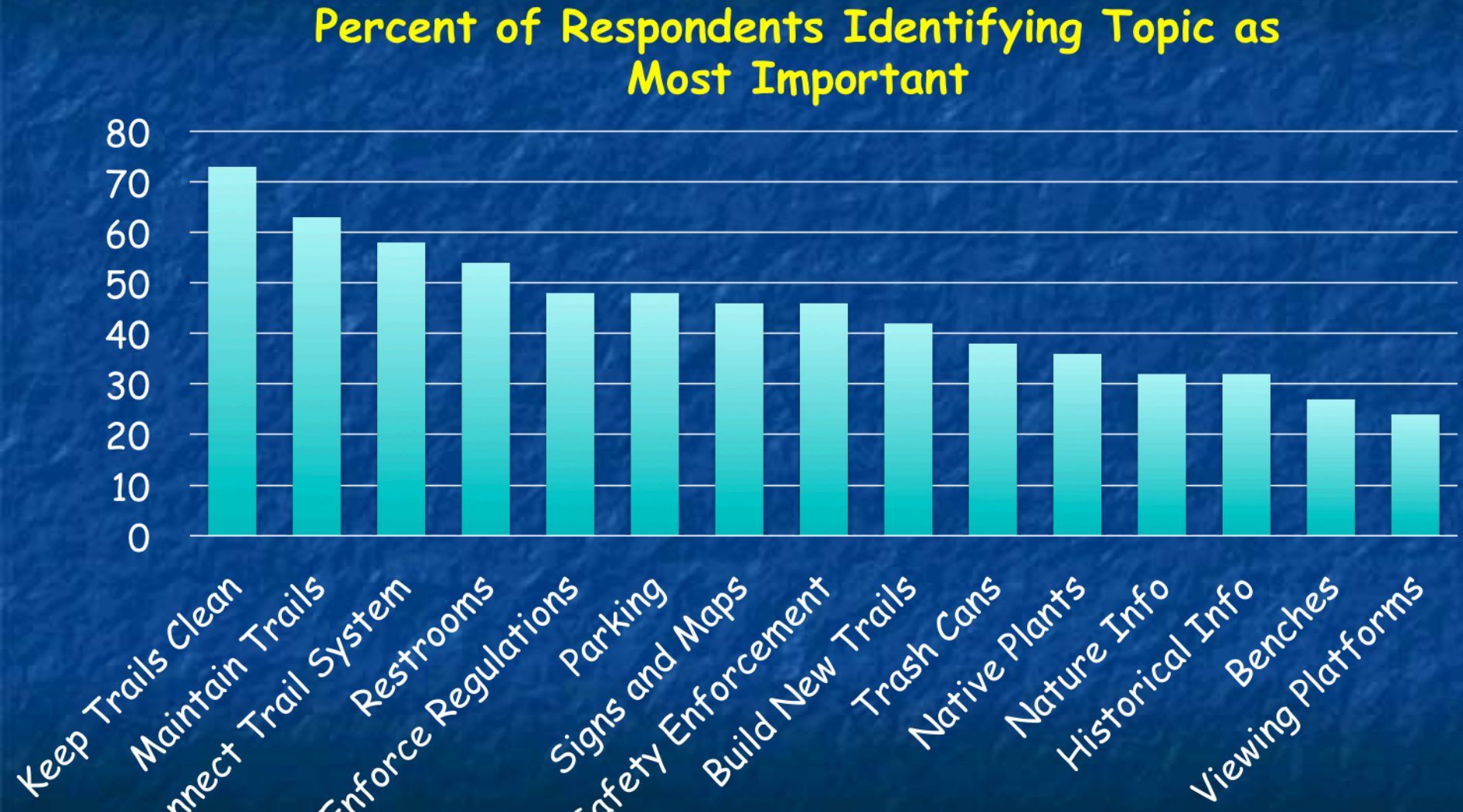
Age



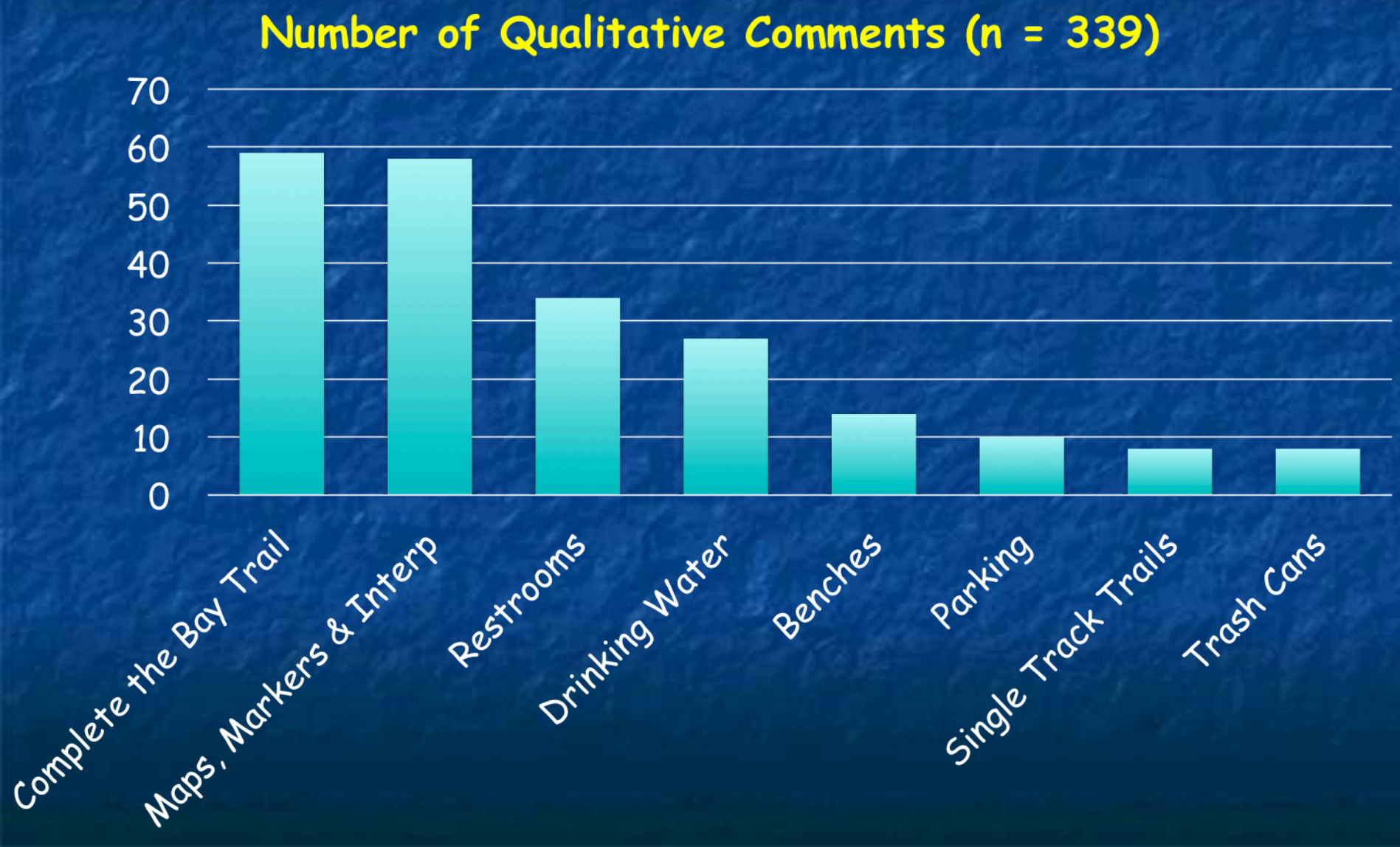
Trail User Sentiments

- 97% Visitors satisfied with trails
- Natural setting, views and wildlife were noted as attractive trail features
- Accessible, safe, quiet, uncrowded open space drew visitors
- 46% Heard of SBSP Restoration Project

Trail Funding Priorities



Trail User Requests



Some Recommendations

- Keep trails at least 145m from plover nesting habitat or wintering waterfowl habitat.
- Locate new trails next to shallow water ponds with wide borrow ditches, to minimize disturbance to shorebirds.
- Concentrate trails in high-demand areas – sites most accessible to existing business parks and neighborhoods.
- Consider closing trails during the snowy plover nesting season.
- Provide abundant habitat with no trails in high quality foraging areas.
- Develop a decision model that incorporates habitat quality, human carry capacity, trail users preferences to locate future trails.

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