

Effect of the Westhampton Interim Storm Damage Protection Project on Piping Plover Habitat and Ecology



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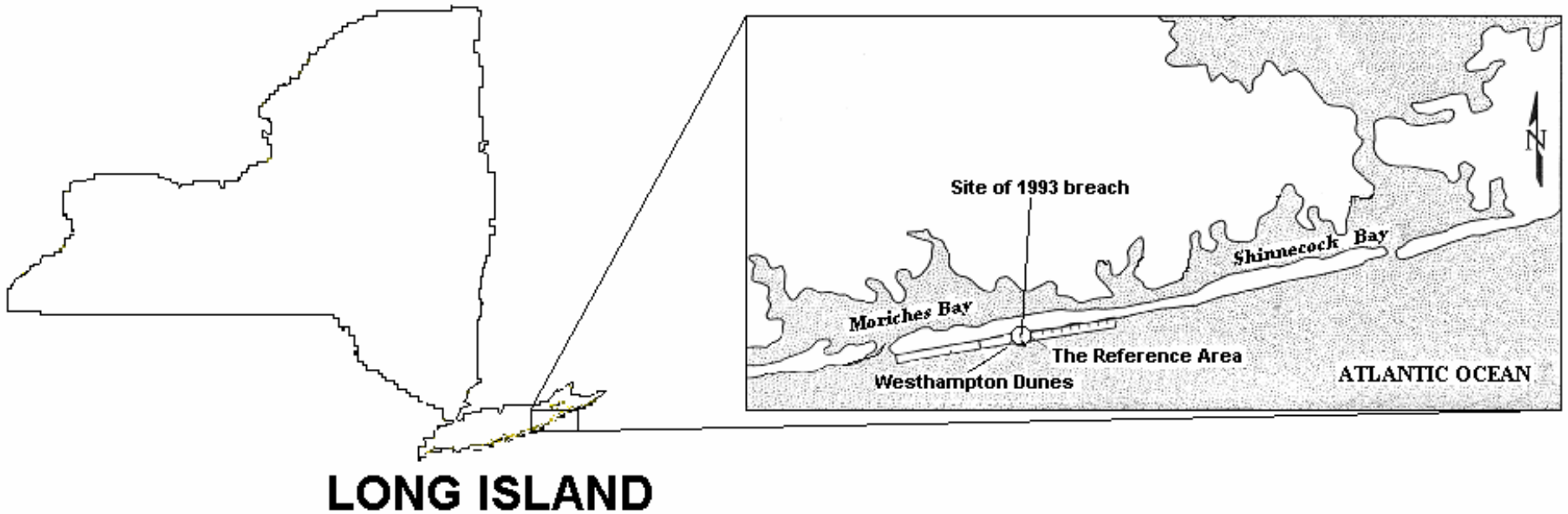
Acknowledgements

- **U.S. Army Corp of Engineers**
- **National Park Service**
- **U.S. Fish and Wildlife Service**
- **N.Y. DEC**
- **The Nature Conservancy, Long Island Chapter**
- **NY State Parks**
- **Suffolk County Parks**
- **The Village of West Hampton Dunes, NY**
- **The Village of Westhampton Beach, NY**
- **Town of Southampton, NY**

Study Area and History

NEW YORK STATE

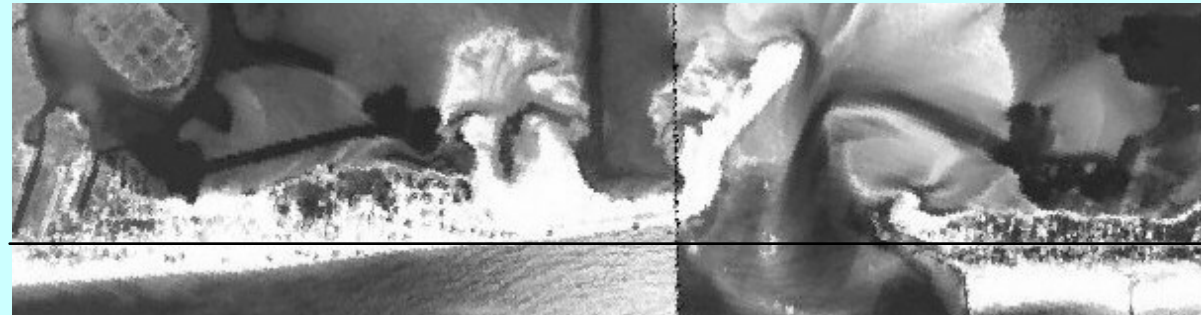
WESTHAMPTON ISLAND



Year **Pairs**
1992 **0.....**



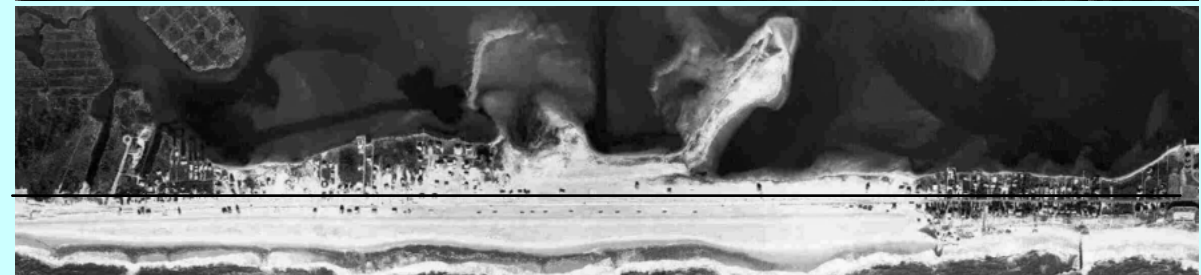
1993 **5.....**



1994 **14.....**

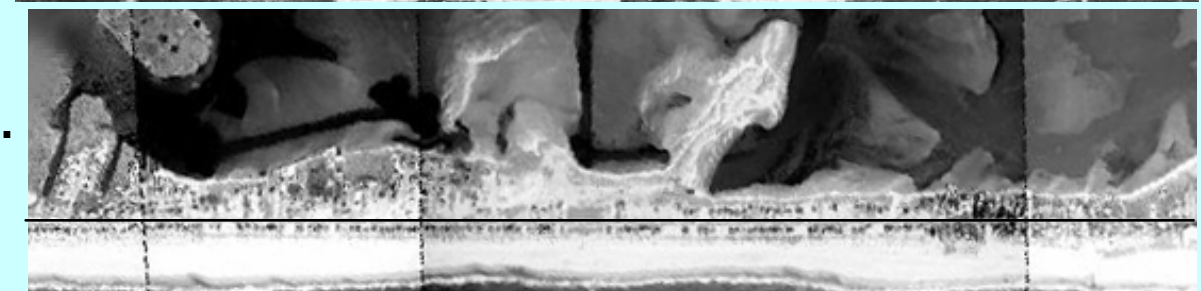


1996 **21.....**



2000 **39**

2004 **18.....**



Plover Management History

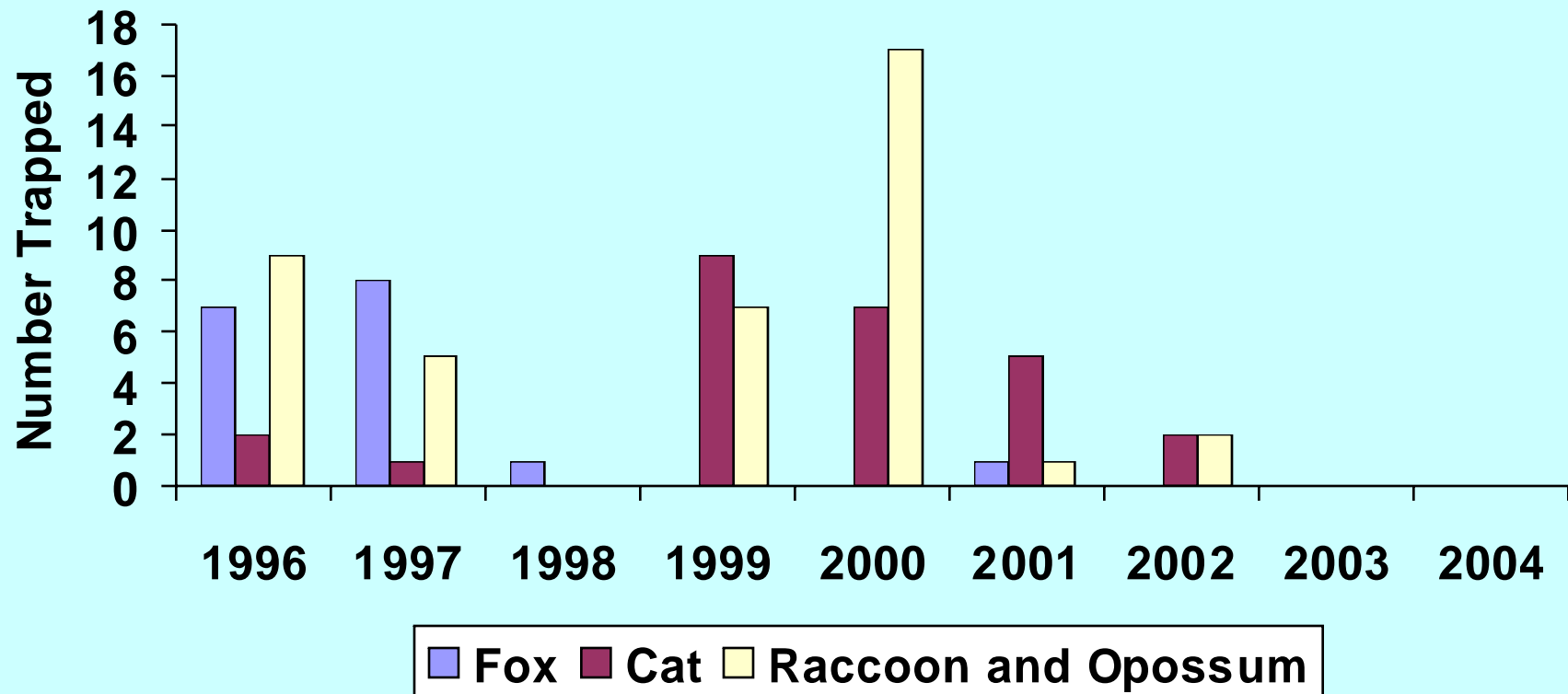
- **Symbolic fencing**
- **Predator Exclosures, 1993-1998, 2003-2005**



- **Road crossings**

Plover Management History

- Predator trapping and removal



Goals

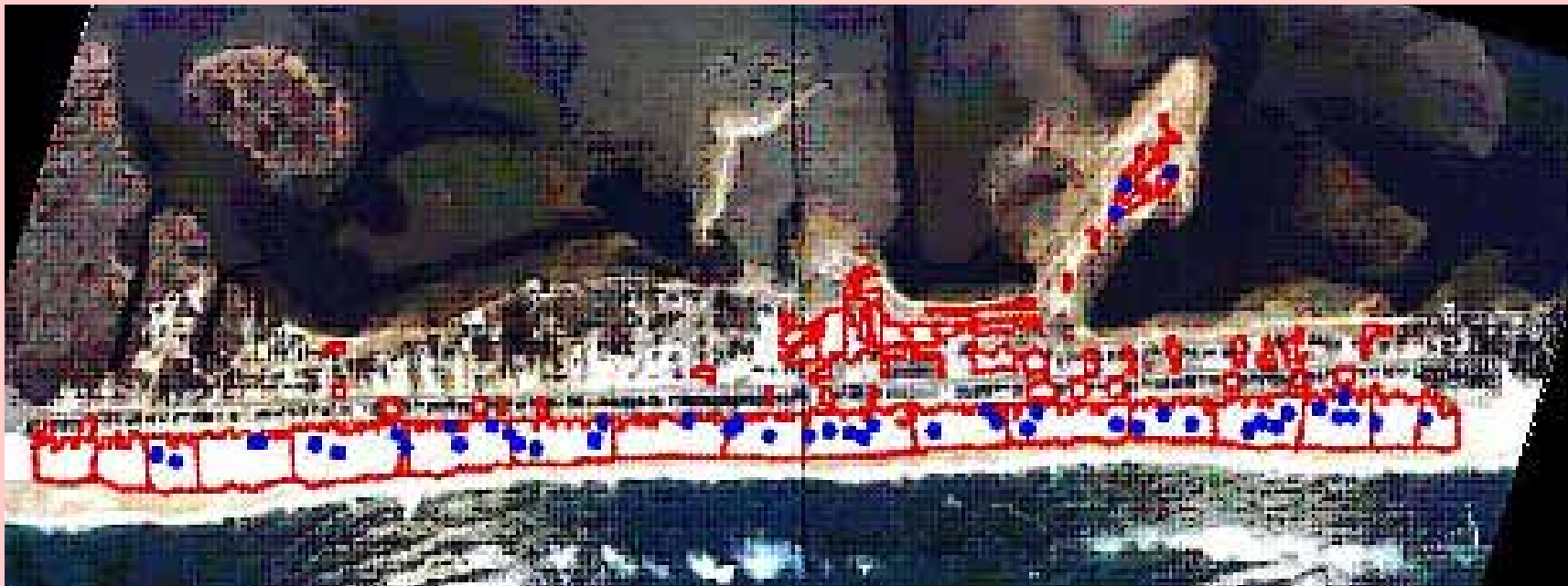
- **To determine the direct, indirect, and cumulative effects of the breach fill and Westhampton Interim Project on piping plover habitat and population biology**
- **To make recommendations to remediate negative effects for this and other renourishment / redevelopment projects**
 - 1. Direct effects – Those occurring at the time that project-related activities are conducted**
 - 2. Indirect effects – Related to the project, but occurring at a different time than project activities**
 - 3. Cumulative effects – Due to non-federal activities made possible by the project**

Methods

- Surveys for pairs and productivity



Habitat area



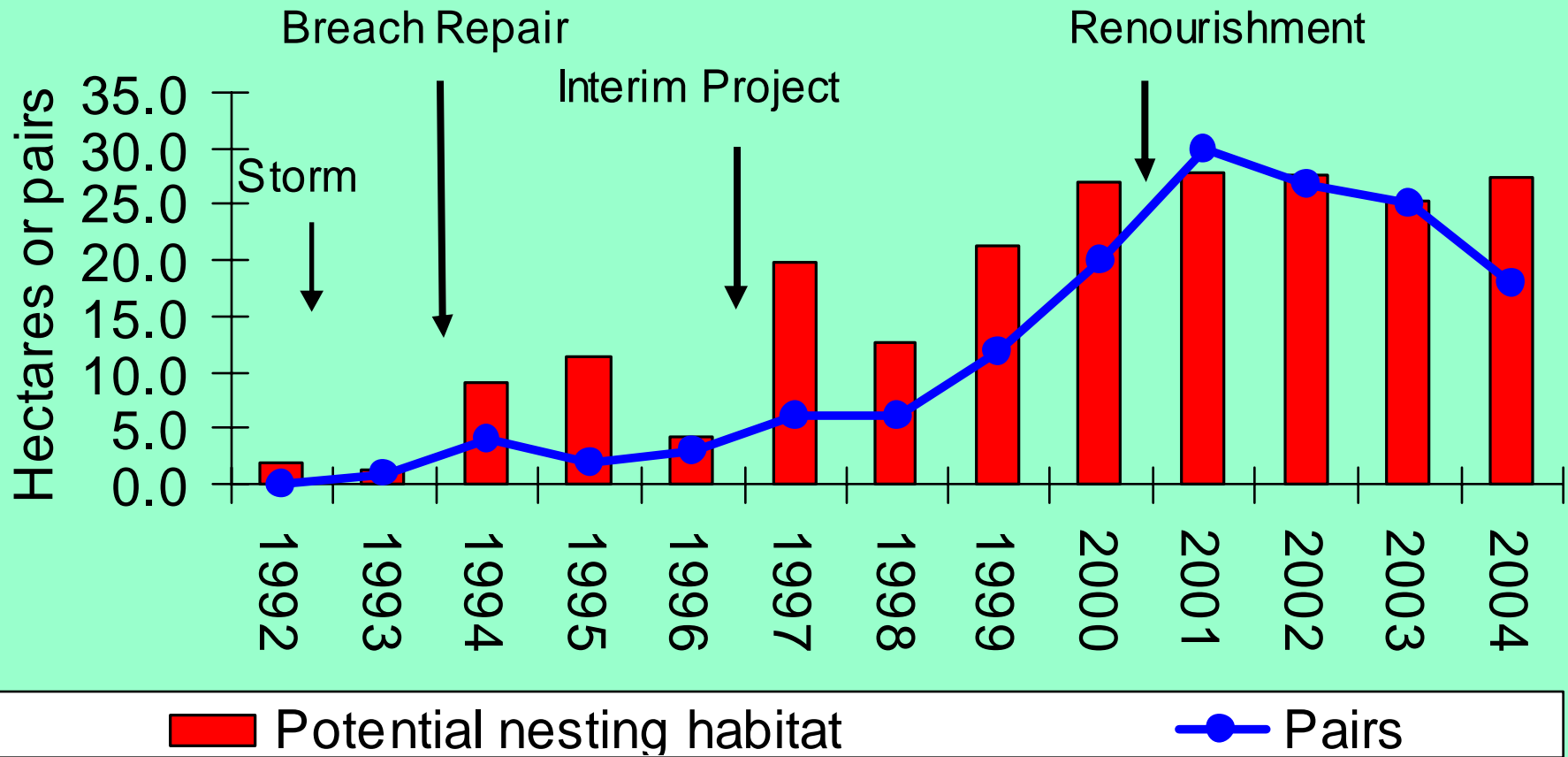
- **Sticky stick traps – terrestrial arthropods**



- **Road crossings**

Direct Effect

Habitat Change on the Ocean Side, 1992 - 2004



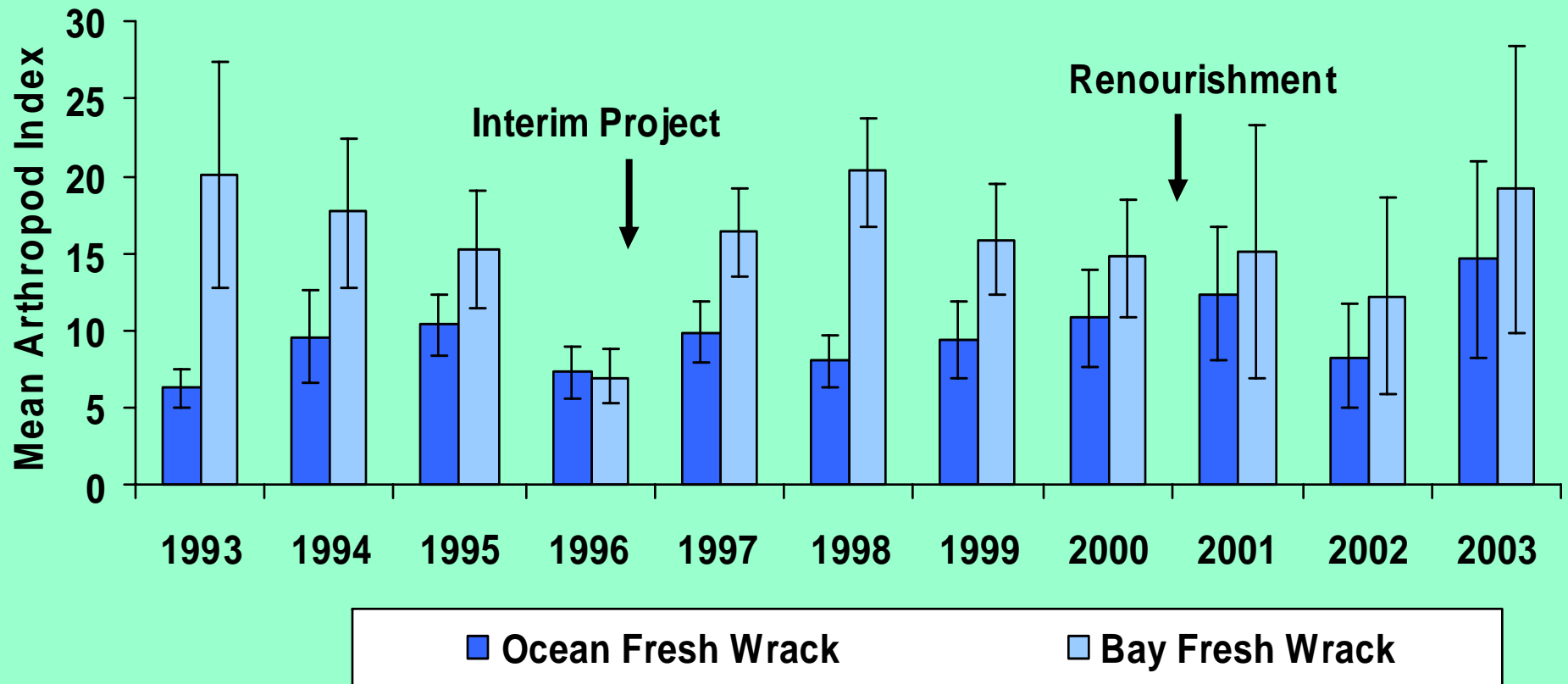
Results: Indirect Effects

Prevention of Overwash



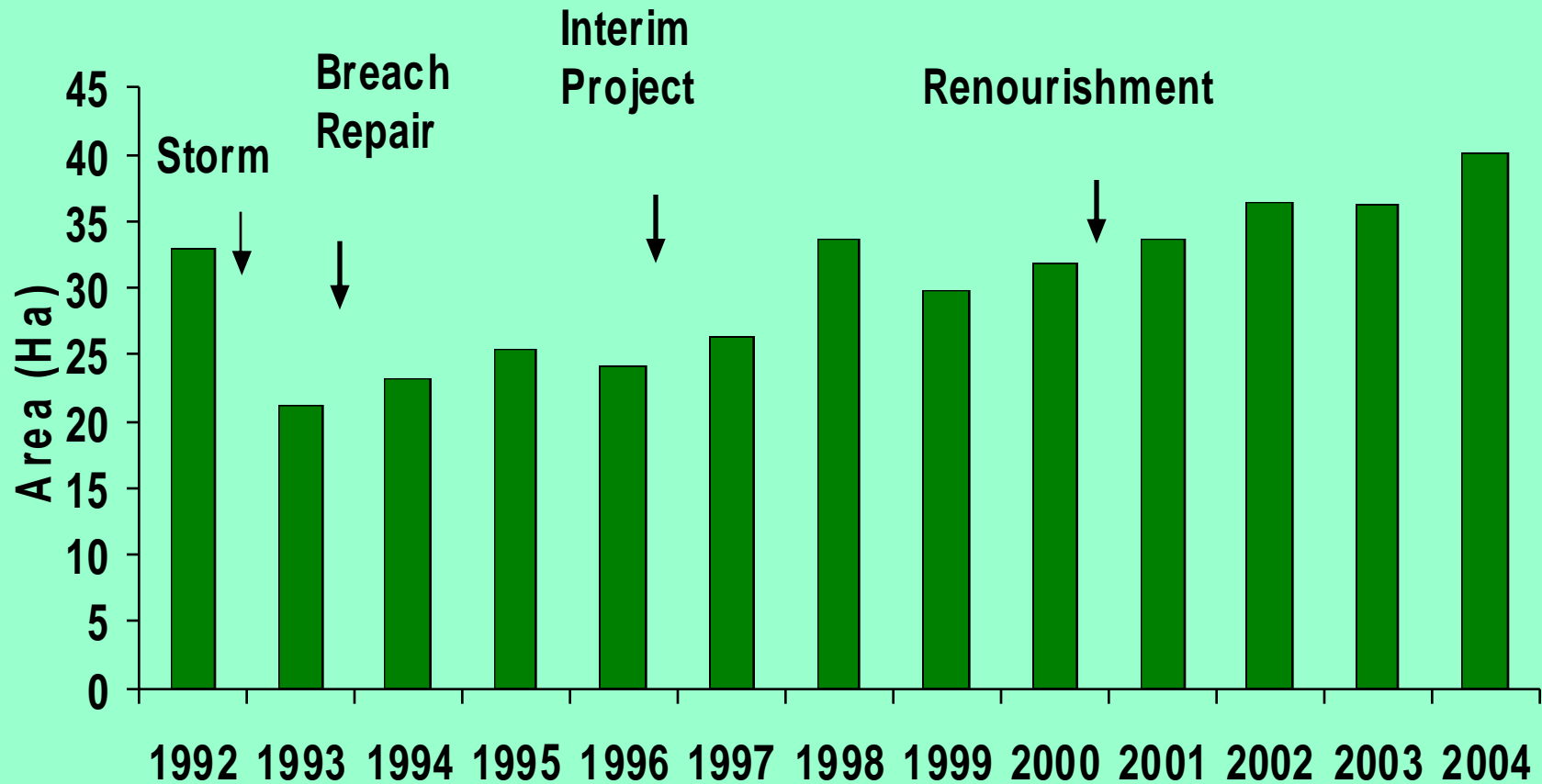
Results: Indirect Effects

Mean Prey Abundance



Results: Indirect Effects

Dense Vegetation

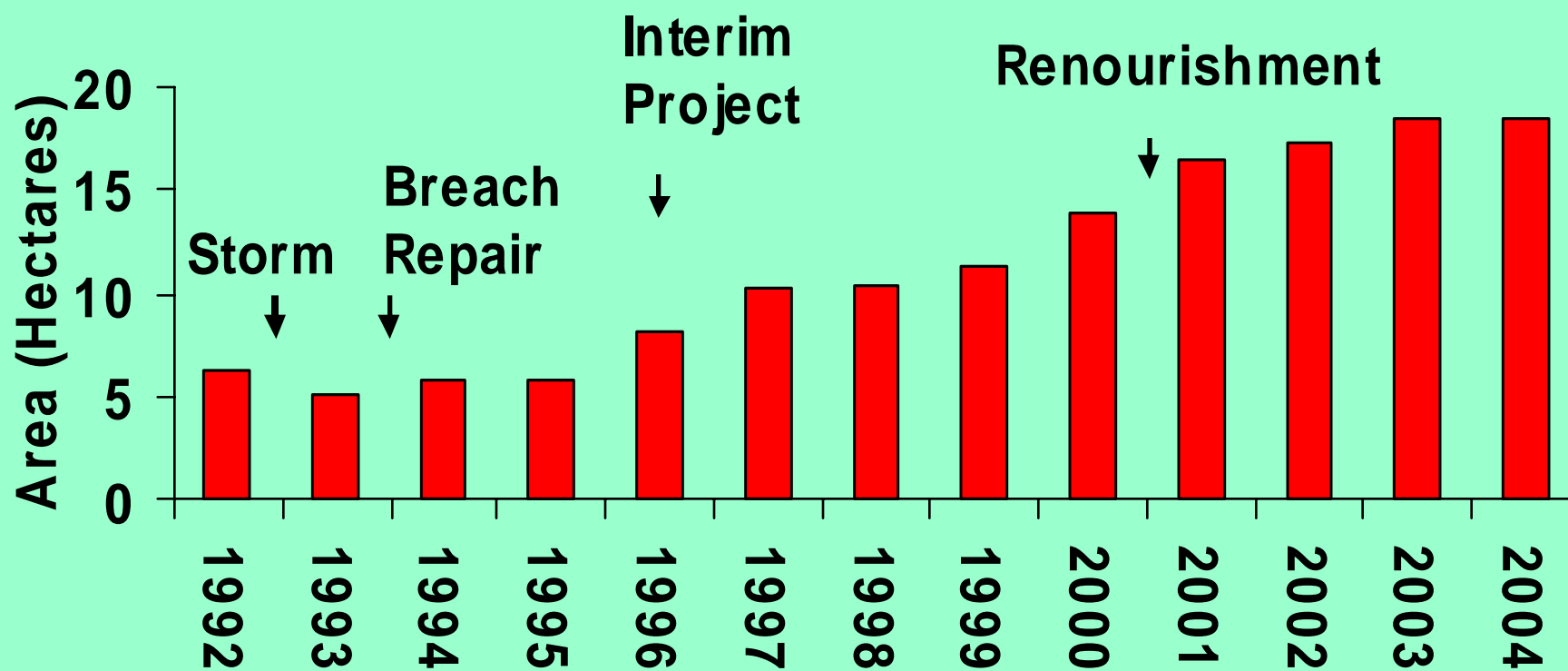


Results: Cumulative Effects

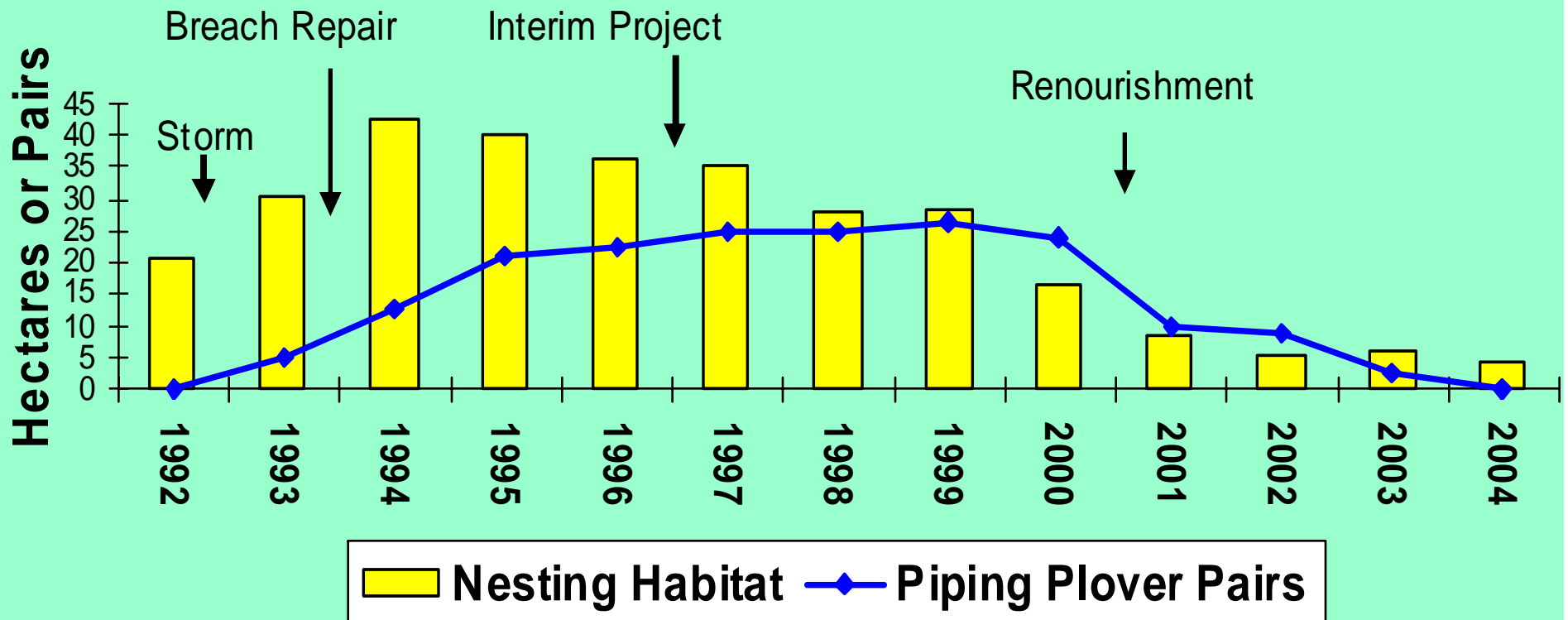
Human Development



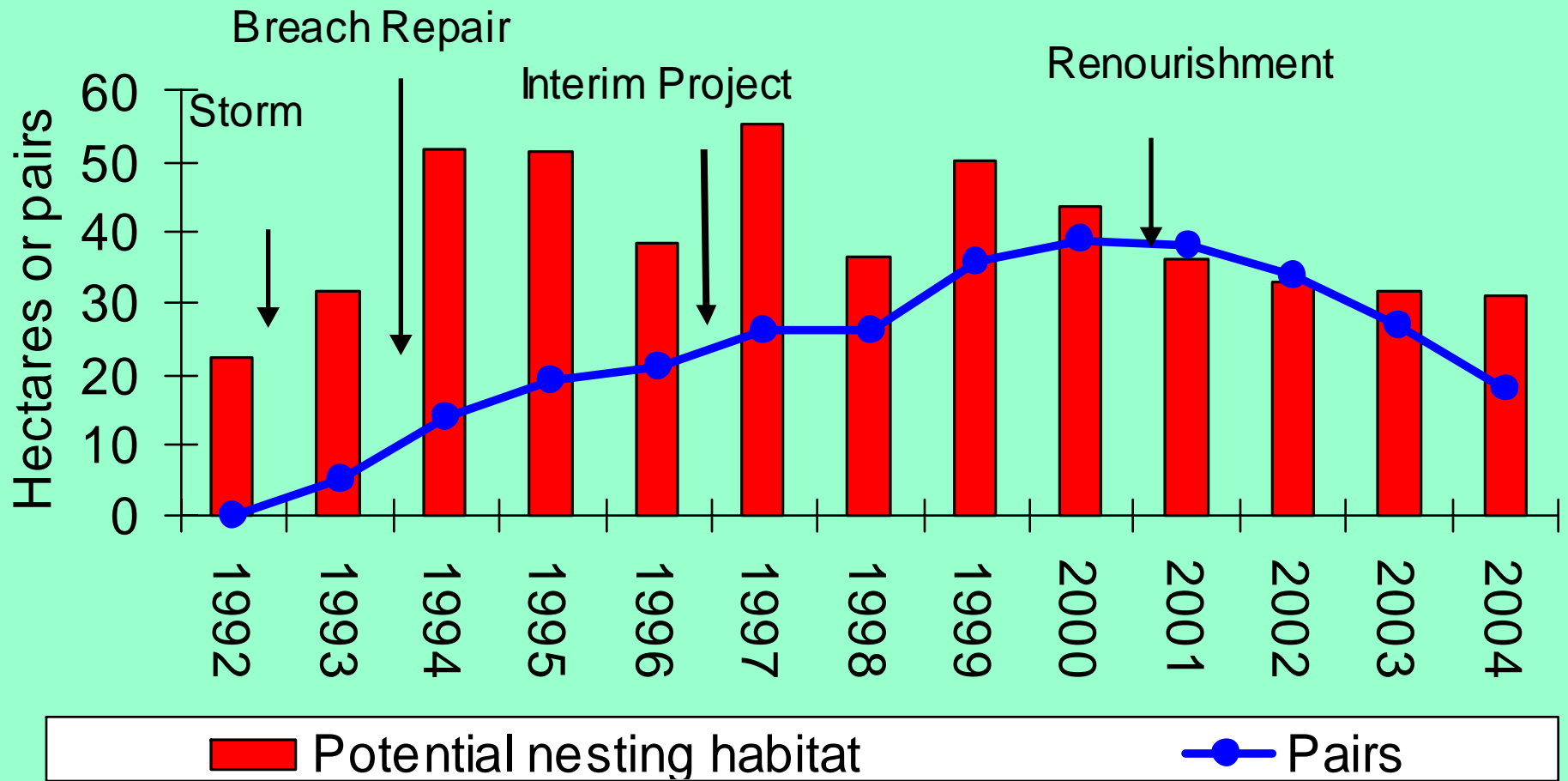
Hectares of Human Land Use



Habitat Change on the Bay Side



Total Habitat Change

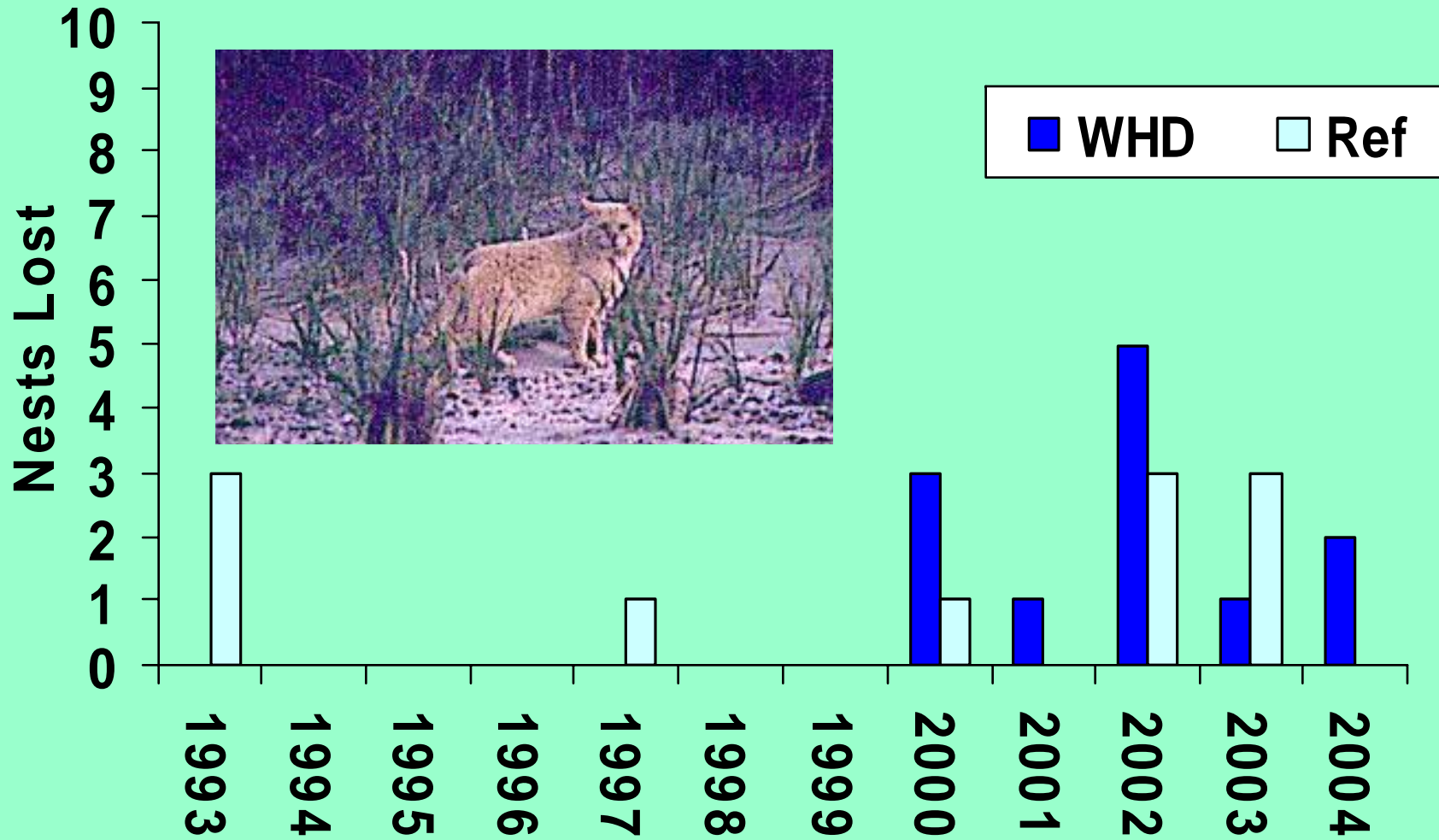


Results: Cumulative Effects

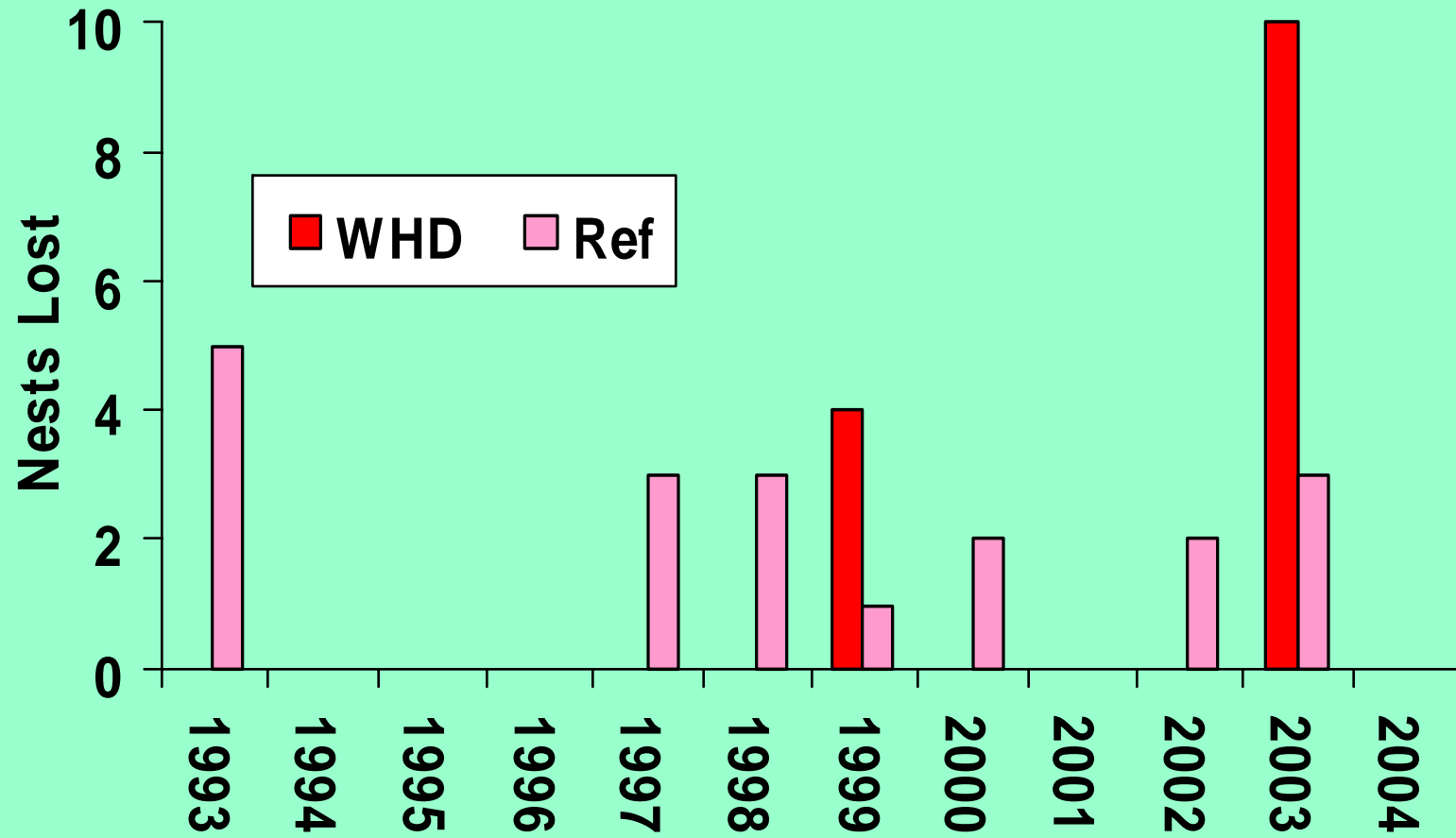
Predation



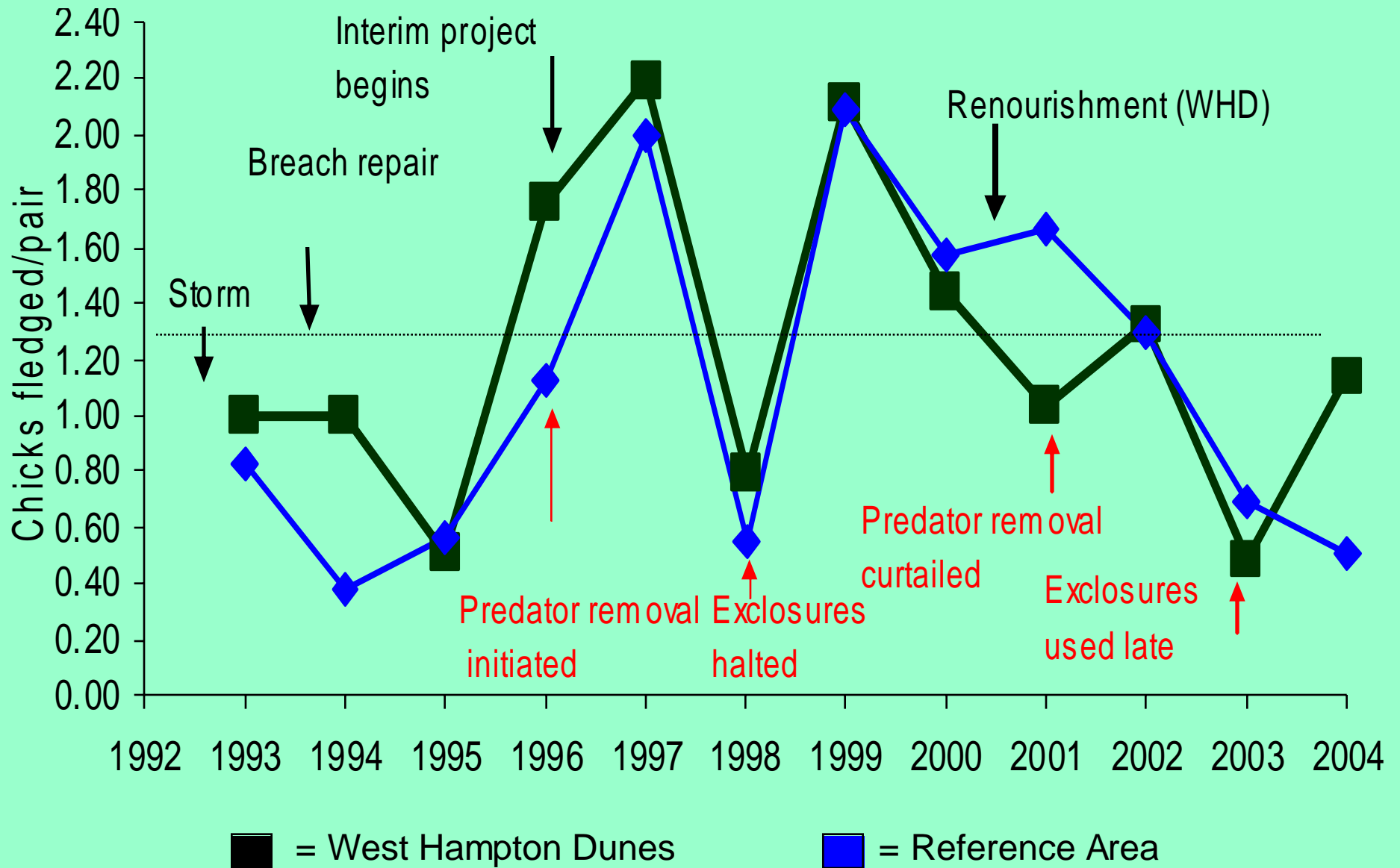
Number of Nests Lost to Cats



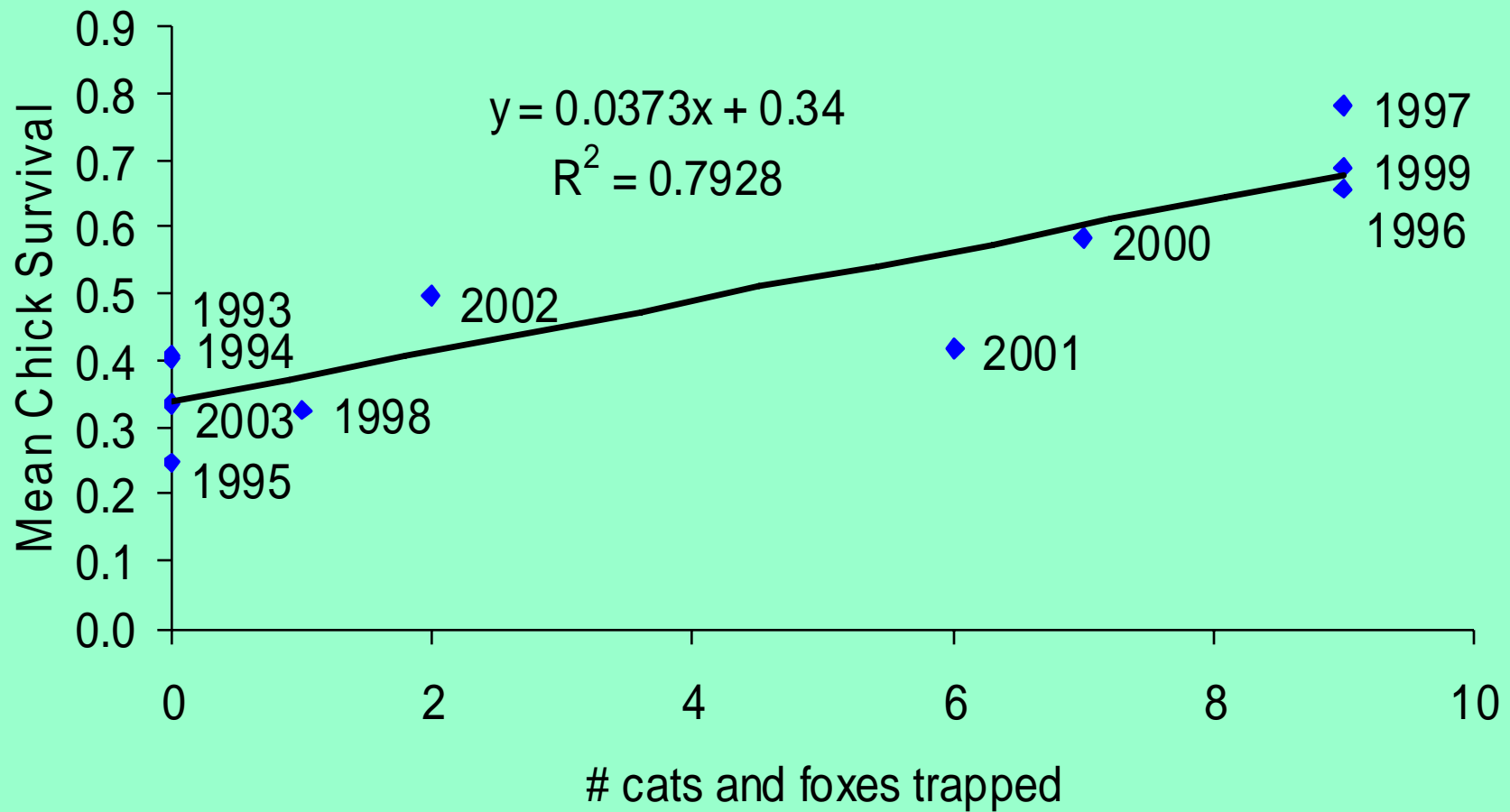
Number of Nests Lost to Crows



Productivity



Chick Survival (Chicks Fledged / Eggs Hatched) vs. Number of Predators Trapped, WHD



Results: Cumulative Effects

Road Mortality



1999-2000: Mean traffic intensity was 75.8 vehicles/hr



1998-2000: 7 chicks and 2 adults killed

Conclusions

- **Habitat restoration, mitigation of habitat loss**



- **Population sink?**

Management Recommendations

**Let natural processes act, but where
renourishment is to be conducted:**

- 1. preserve tidal flats and nesting habitat adjacent to them (e.g., Pike's beach)**
- 2. refrain from planting vegetation, or plant it sparsely, and thin when > 90% ground cover (e.g., sand spit and Pike's Beach at WHD)**

Management Recommendations

In addition, where renourishment is to be followed by human development:

- 1. Plan for predation control (e.g., feral cats at WHD)**
- 2. Plan to monitor as long as direct, indirect, and cumulative effects are possible**
- 3. Plan to manage traffic on roads that plovers cross (e.g., brood monitors, endangered species training for law enforcement, speed limits)**



No Duh!

But who is responsible?

- **Symbolic Fencing**
- **Exclosures**
- **Trapping**
- **Road and Off-Road Traffic**
- **Pets/Trash/Kites/Fireworks**
- **Vegetation Control**
- **Monitoring**
- **Education and Outreach**

