



# **New York Barrier Islands Plover Research**

**Jennifer Seavey, Dr. Tom Litwin,  
Dr. Kevin McGarigal, Dr. Curtice Griffin,  
Dr. Scott Melvin**



**Please do not use any portion of this  
presentation with out written  
permission from the author: Jennifer  
Seavey**

Contact info: Jennifer Seavey  
212 Burton Hall  
Clark Science Center  
Smith College  
Northampton, MA 01063  
jseavey@email.smith.edu

**Very Special Thanks to:**

**The Krusos Foundation**

**The Nature Conservancy, Long Island Chapter**

**Disney Corporation**

**Jon Caris, Spatial Analysis Lab, Smith College**

**Ann Hecht, USFWS**

**Mike Wasilco, NYDEC**

**Richard Kulis, Green River Aviation**

**Fire Island National Seashore**

**Smith College's Yumi Aikawa, Morgan Theis, Liz**

**Cowan, Kate Elmer, and Claire Matthews**

**Hampshire College's Lesley Starke, and Sarah**

**Thomsen**

**All the Wonderful NY Barrier Island Plover**

**Stewards and Managers**

# Goals of This Presentation

1) Describe Our Study Approach

2) Preview of Our  
Data/ Finding  
Thus Far...



# Our Unique Approach

## Research Objective:

Determine the environmental variables that best describe the distribution, abundance, & productivity of plovers

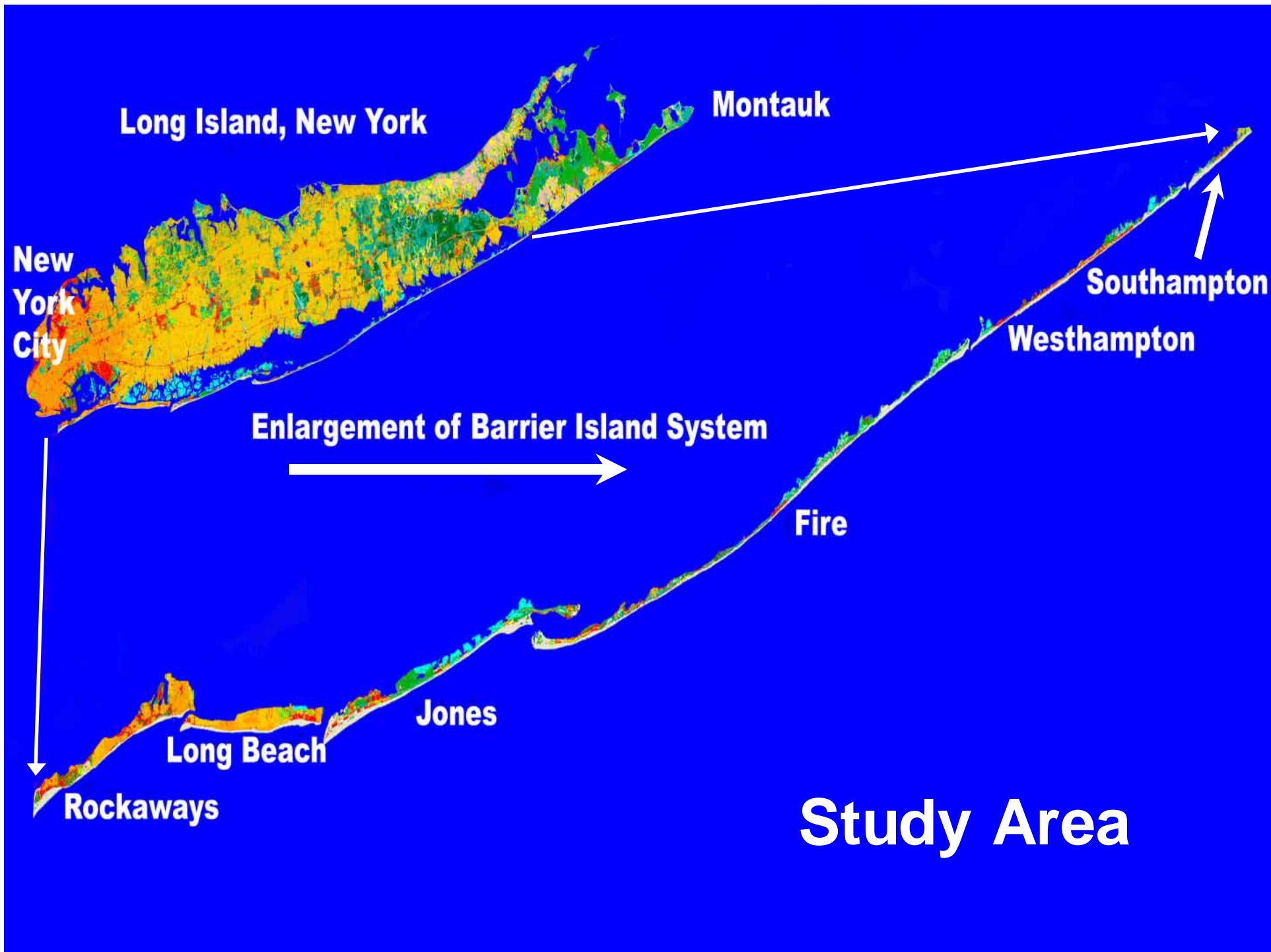
## Our Unique Approach:

Multiple scale analysis that incorporates  
in time:

1  11 breeding seasons (1994-05)

in space:

nest sites  barrier island system



# Overview of Data

## Environmental Data:

### Data Collected:

- 1) Land Cover (habitat types, development...)
- 2) Disturbance (erosion, cleaning, recreation)
- 3) Protection (fencing, wardening, terns...)
- 4) Predators (activity index)

### Two Classes:

Long term (1994-2005)

Short term (2003-2005)

## Plover Data:

### 11 years of Nesting Data:

Distribution

Abundance

Productivity

# What We Have Accomplished So Far:

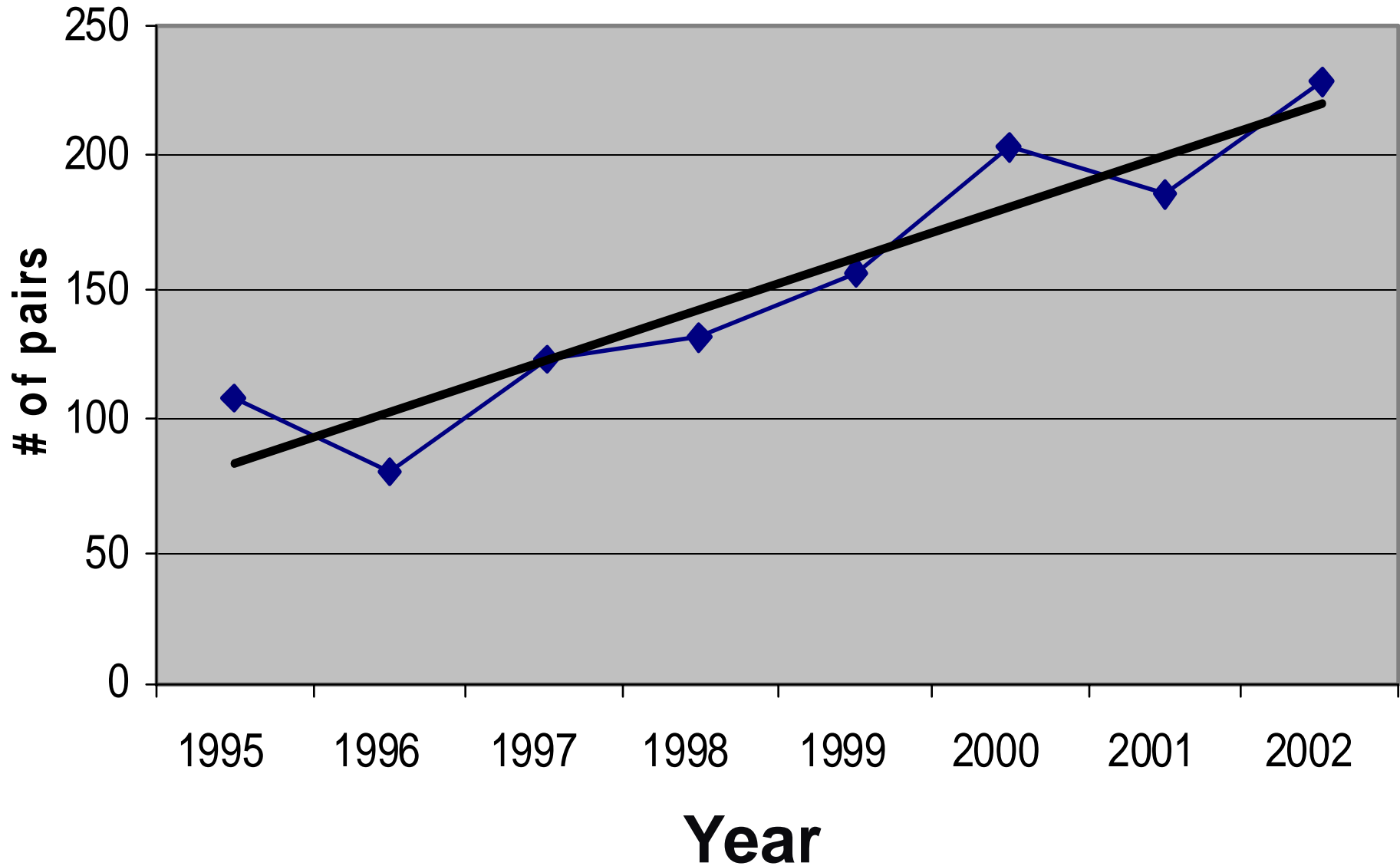
## 5 Categories of Data:

- 1) Nest Information
- 2) Land Cover
- 3) Disturbance
- 4) Protection
- 5) Predators



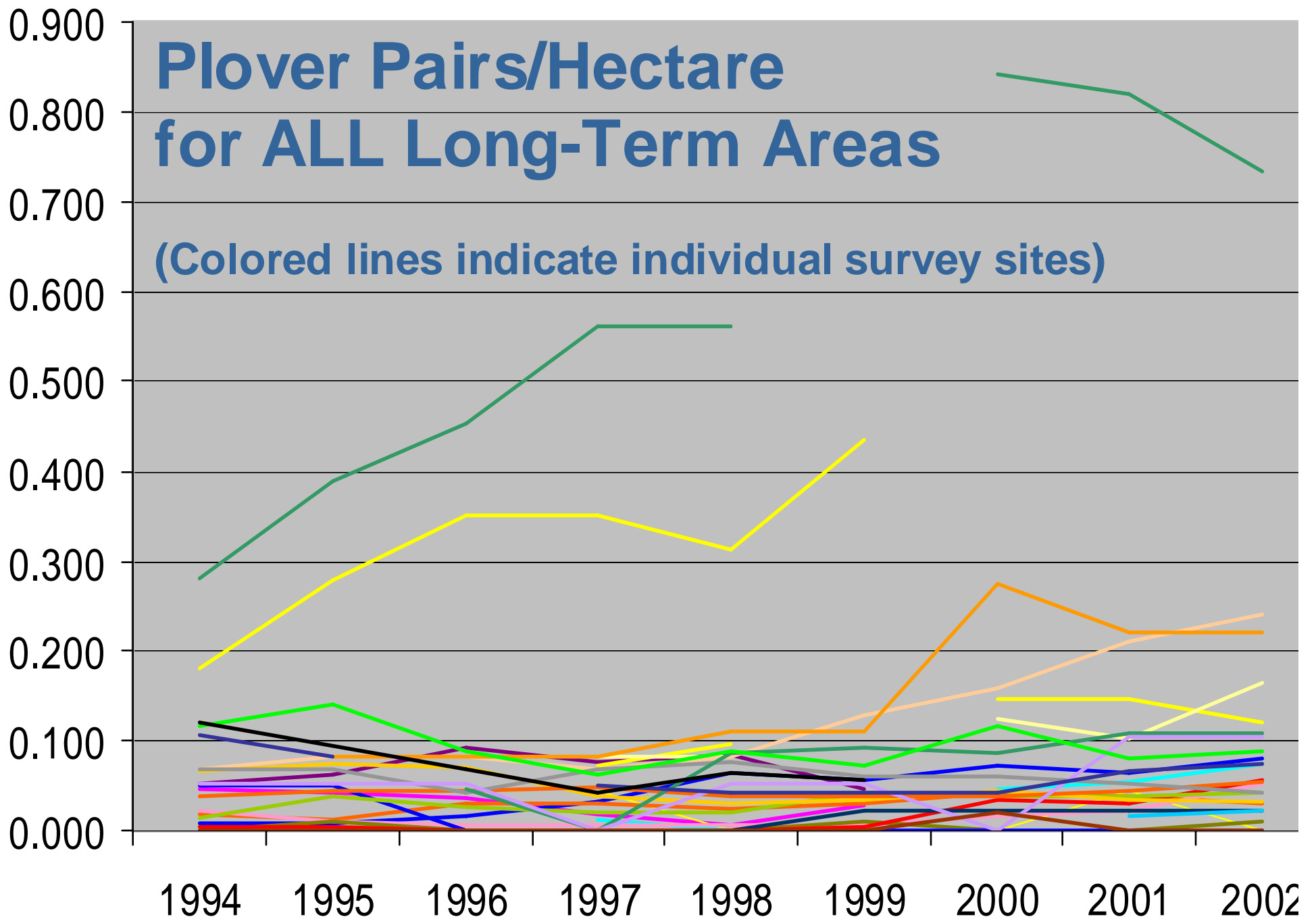


# Piping Plover Abundance across the entire study area for 1995-2002



# Plover Pairs/Hectare for ALL Long-Term Areas

(Colored lines indicate individual survey sites)





# Recent Fire Island Nest Sites

(colored dots indicate individual nests sites)

2003

52 nests

86 fledges

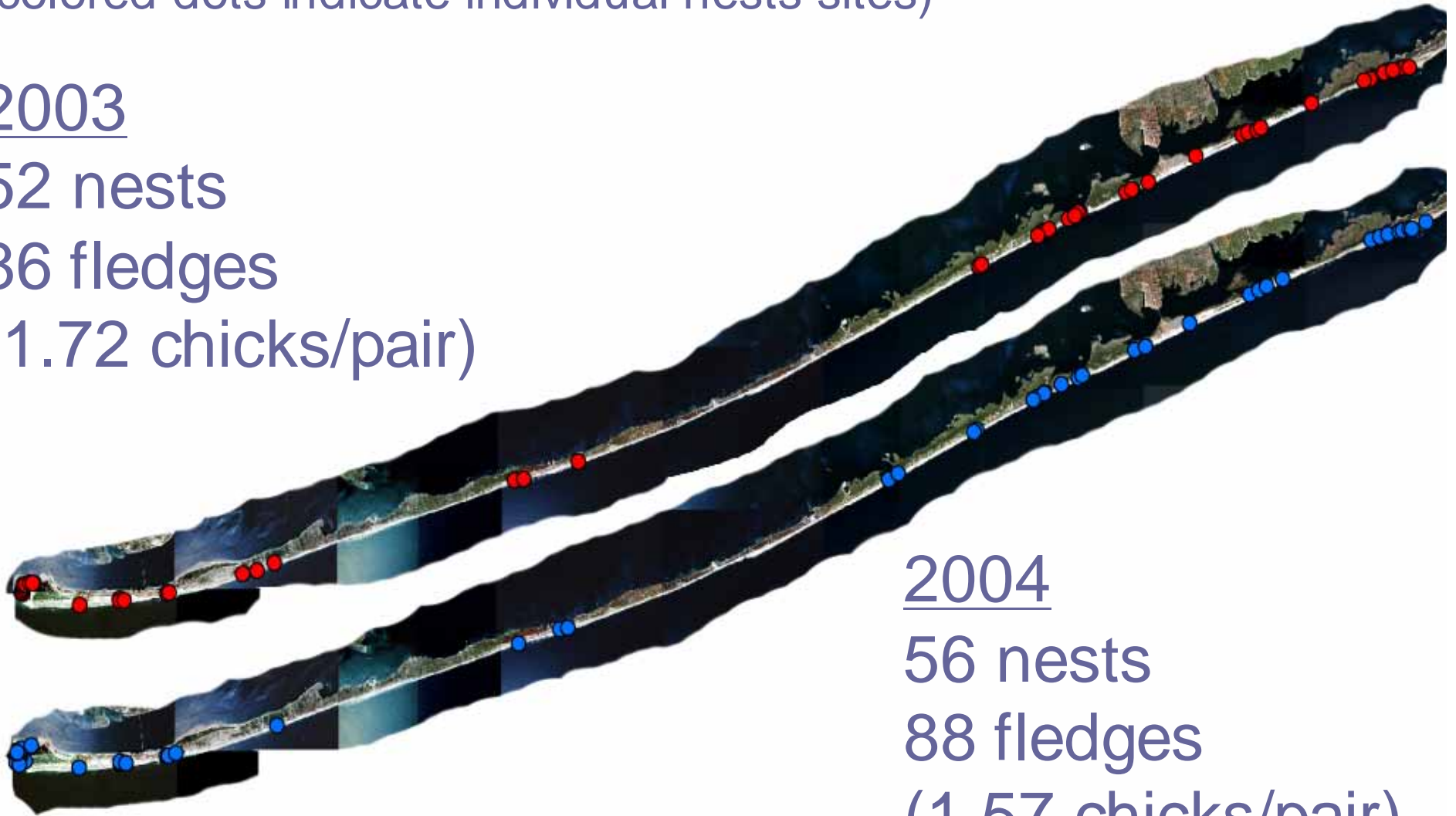
(1.72 chicks/pair)

2004

56 nests

88 fledges

(1.57 chicks/pair)





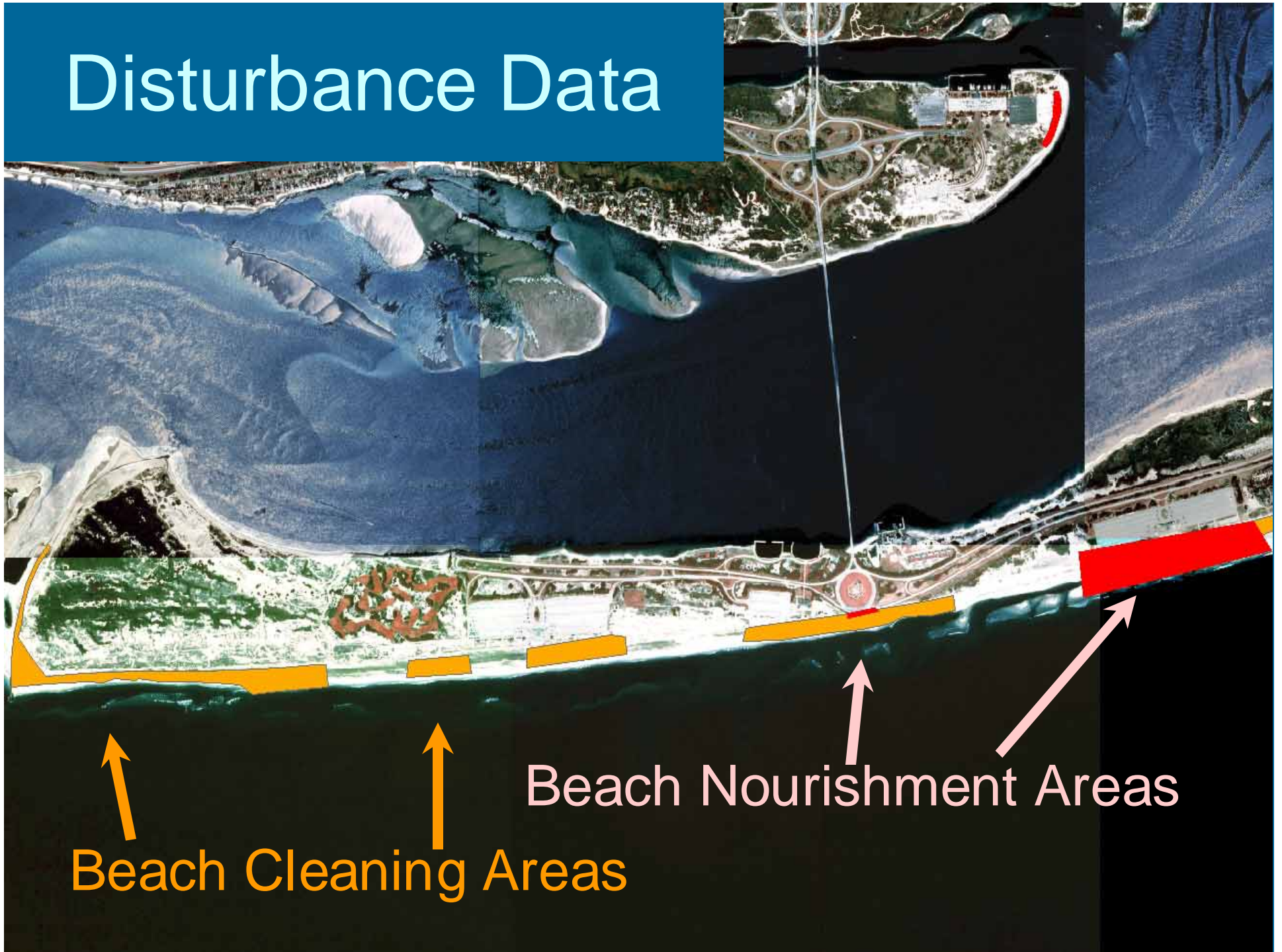
**Legend**  
**ExampleLandCvr**  
**LandCvr**

- ShrubTree
- 4WDRd
- Built
- DenseGrass
- GrassShrub
- JettyWall
- Lawn
- Parking
- Rd
- RecDev
- Sand
- ShrubTree
- SparseGrass

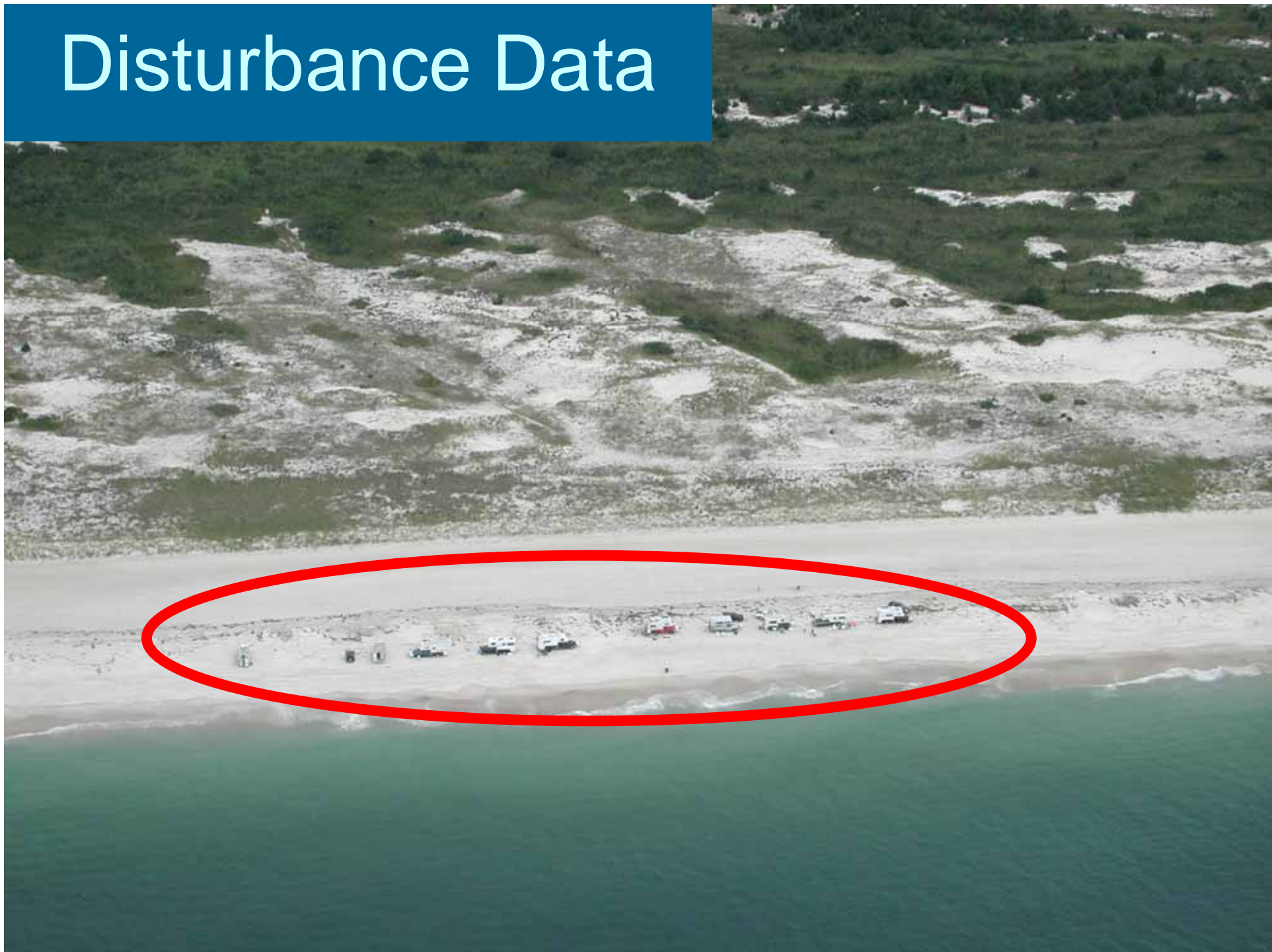
Example of Land Cover Data



# Disturbance Data

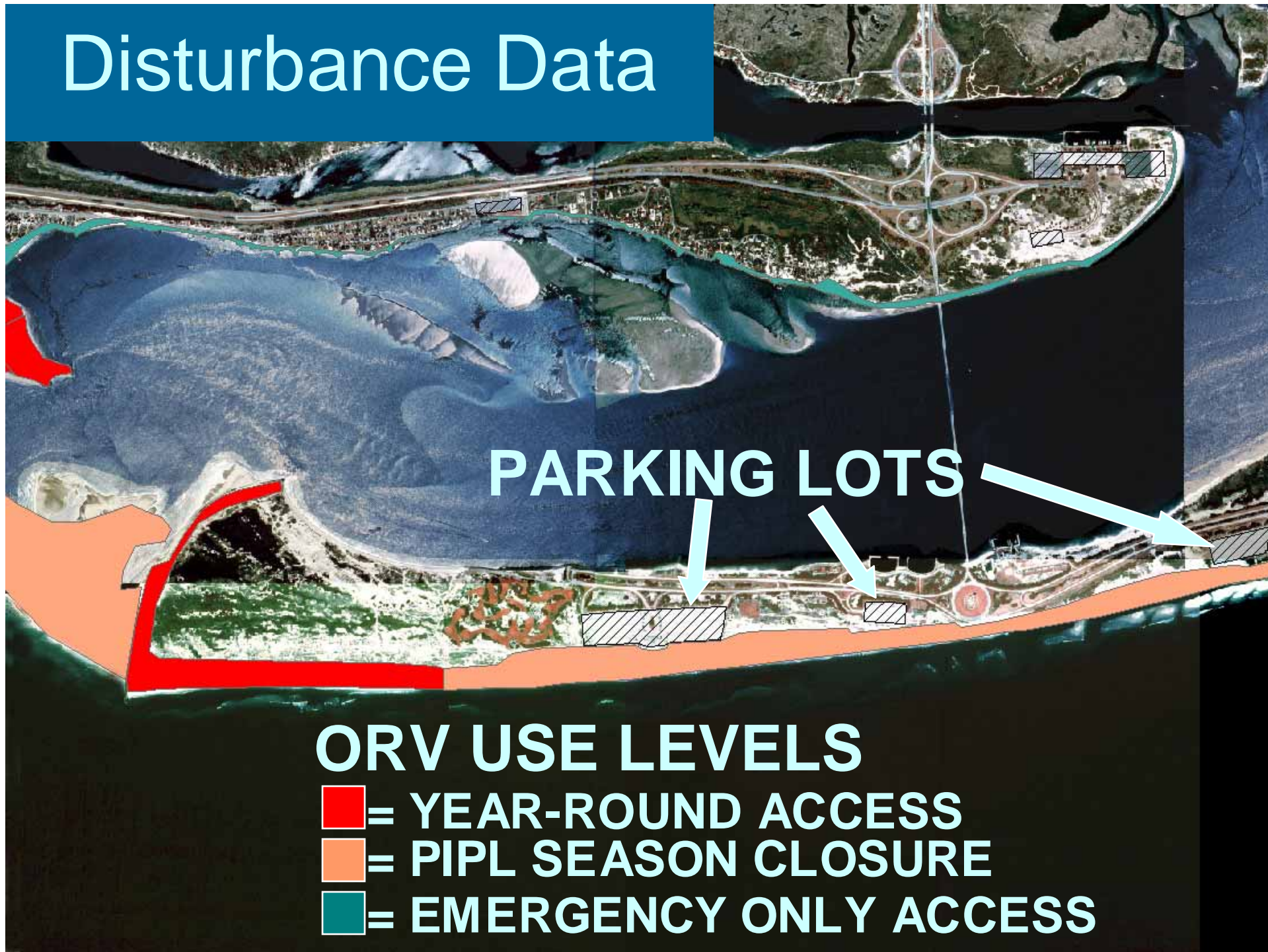


# Disturbance Data



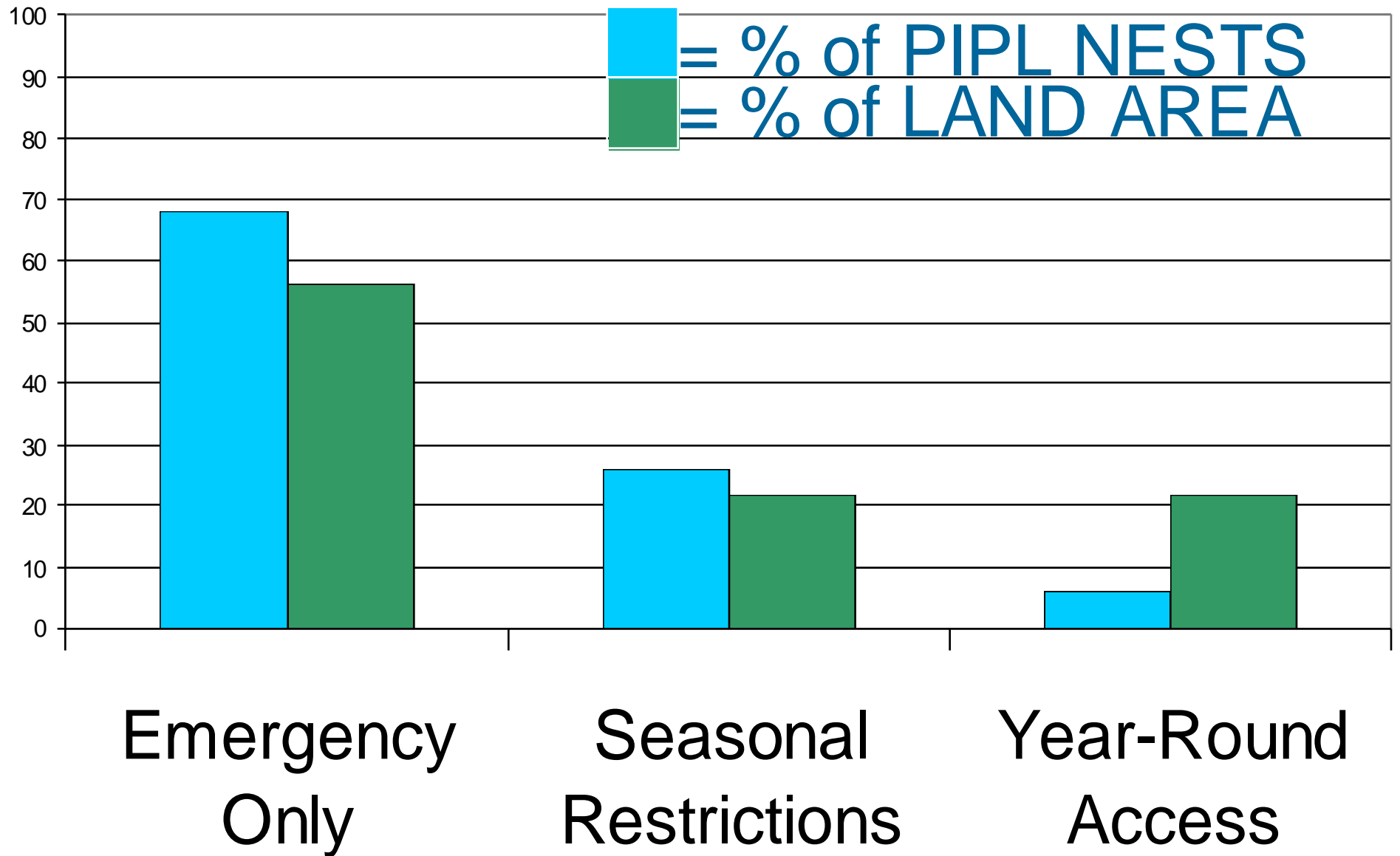


# Disturbance Data

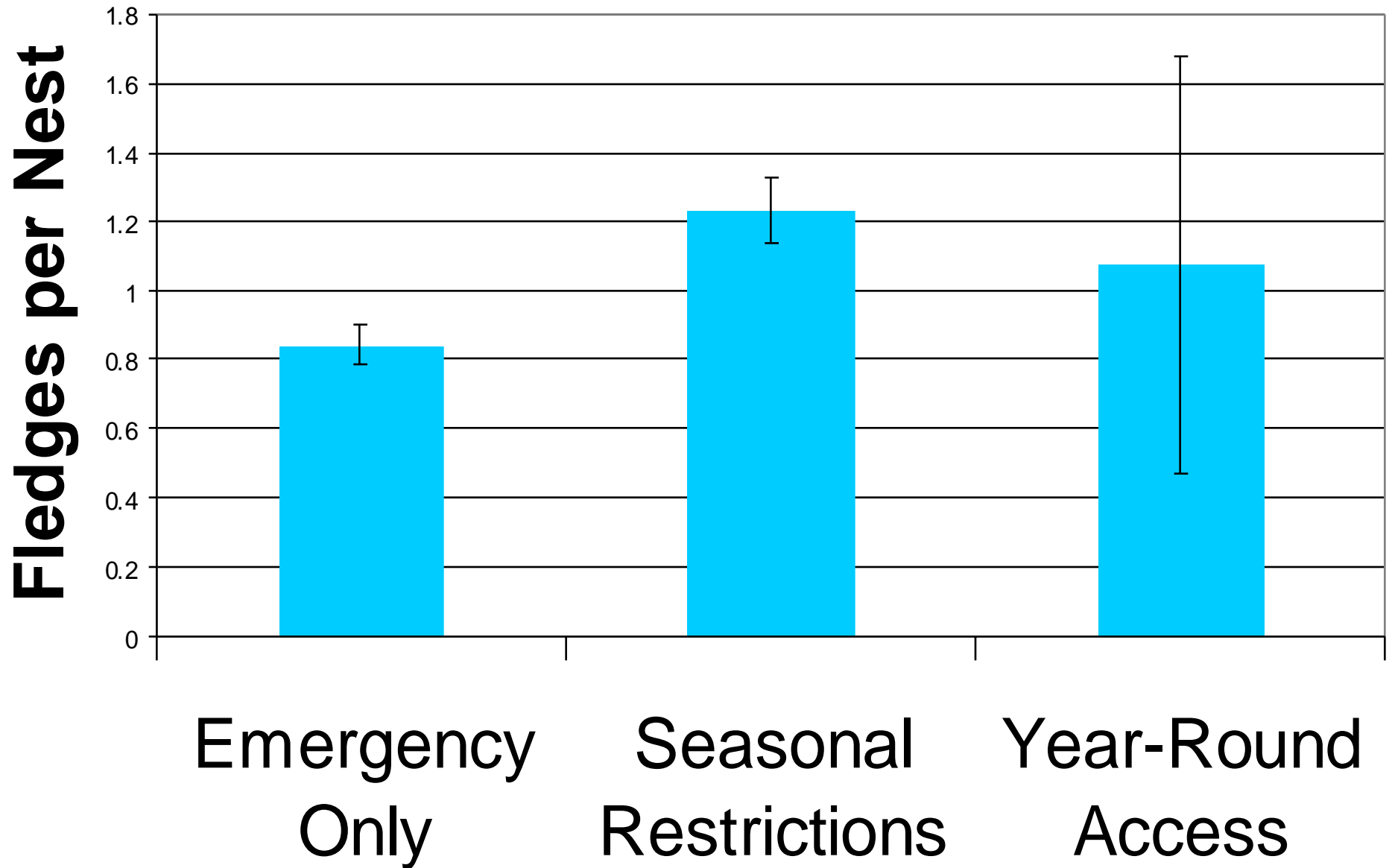




# Disturbance Data - ORVs

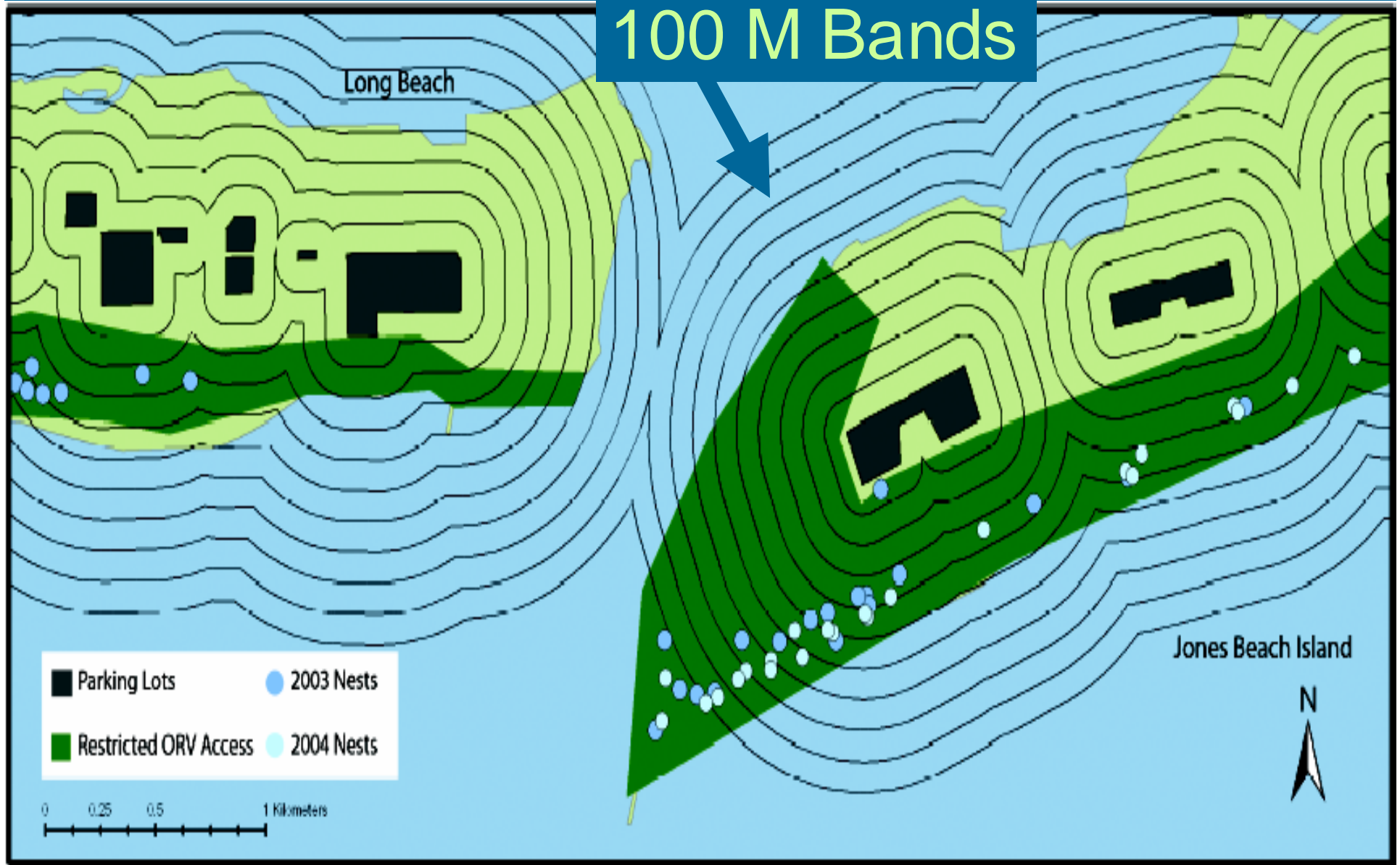


# Disturbance Data - ORVs

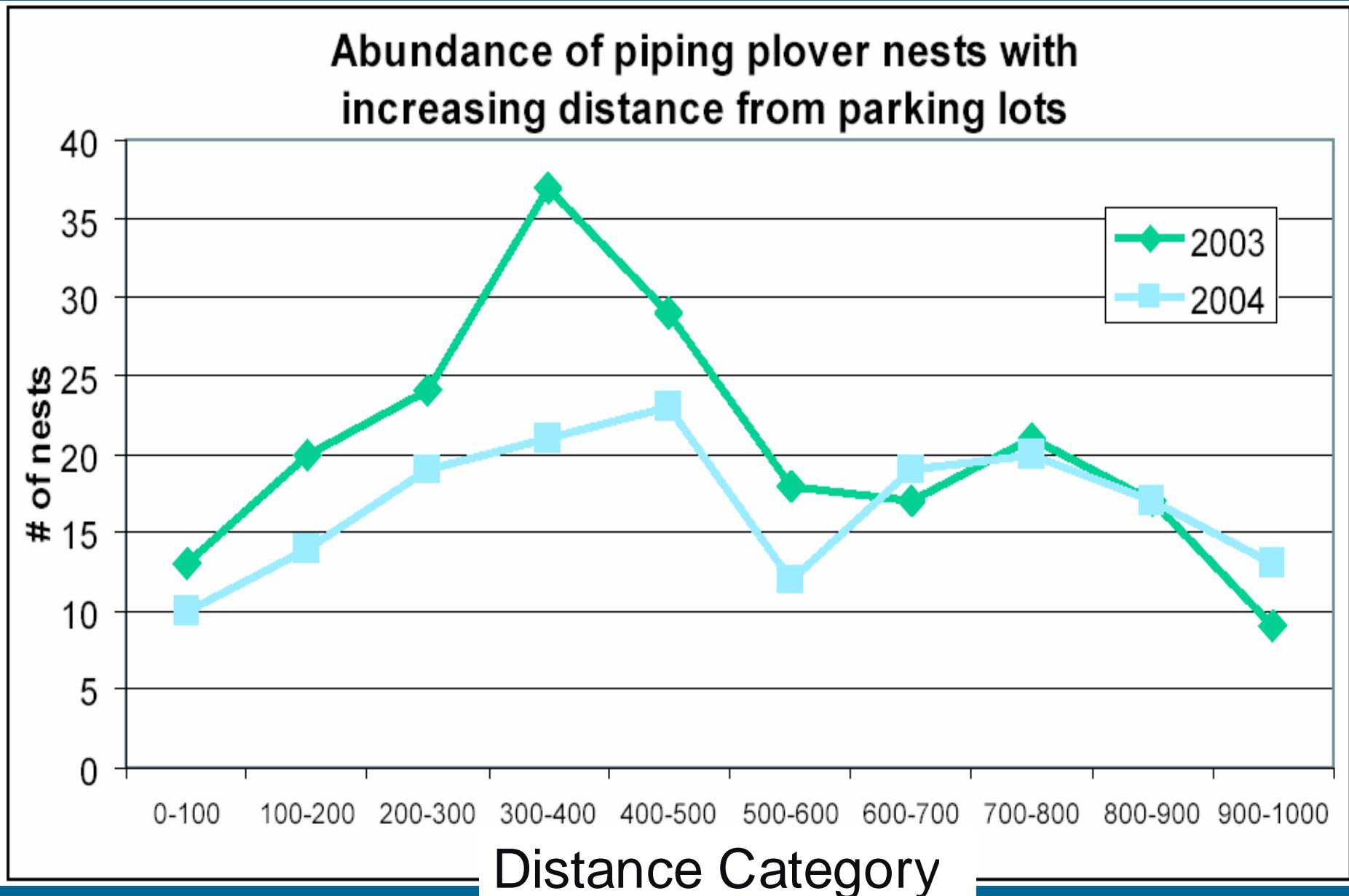


# Disturbance Data – Parking Lots

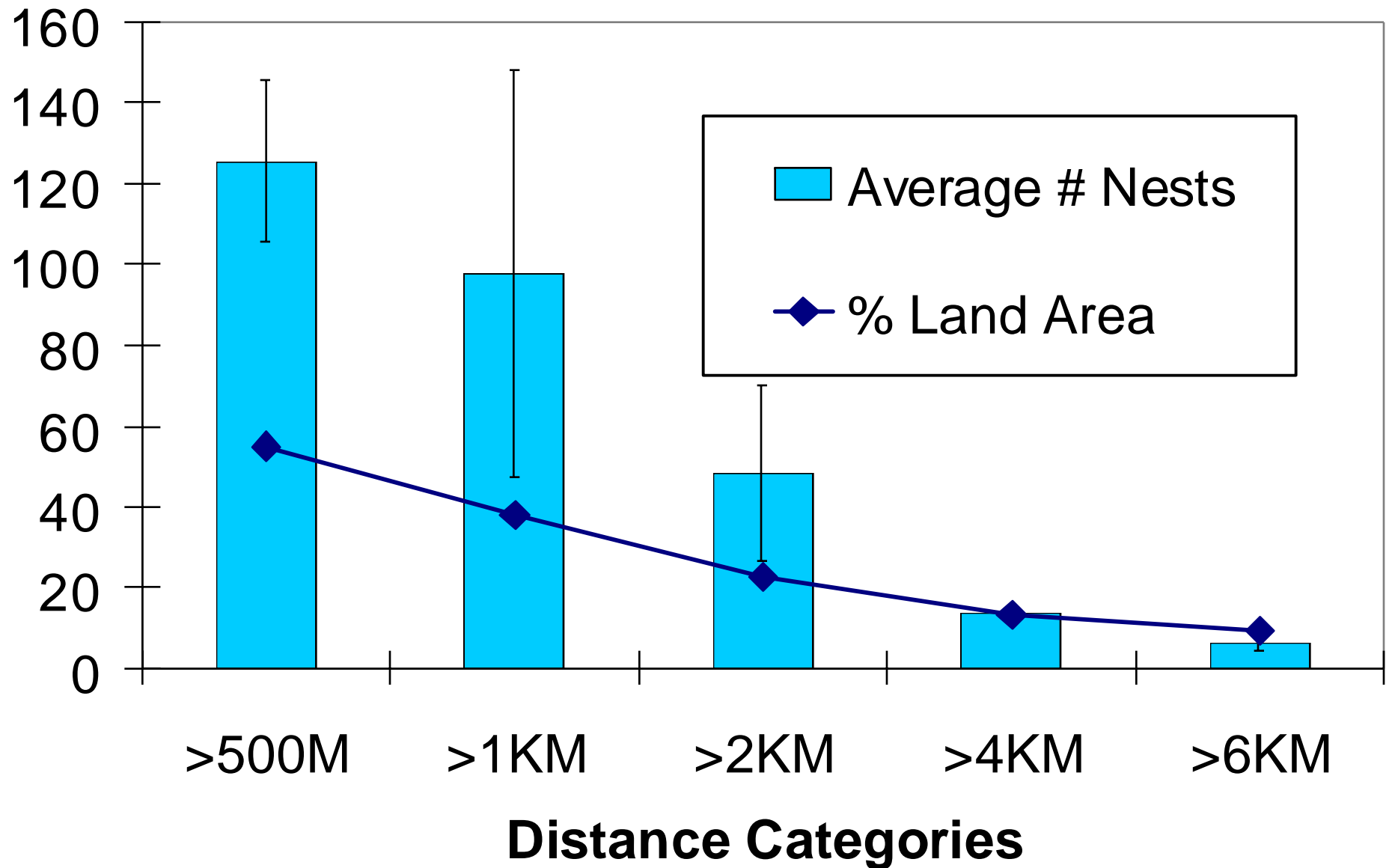
100 M Bands



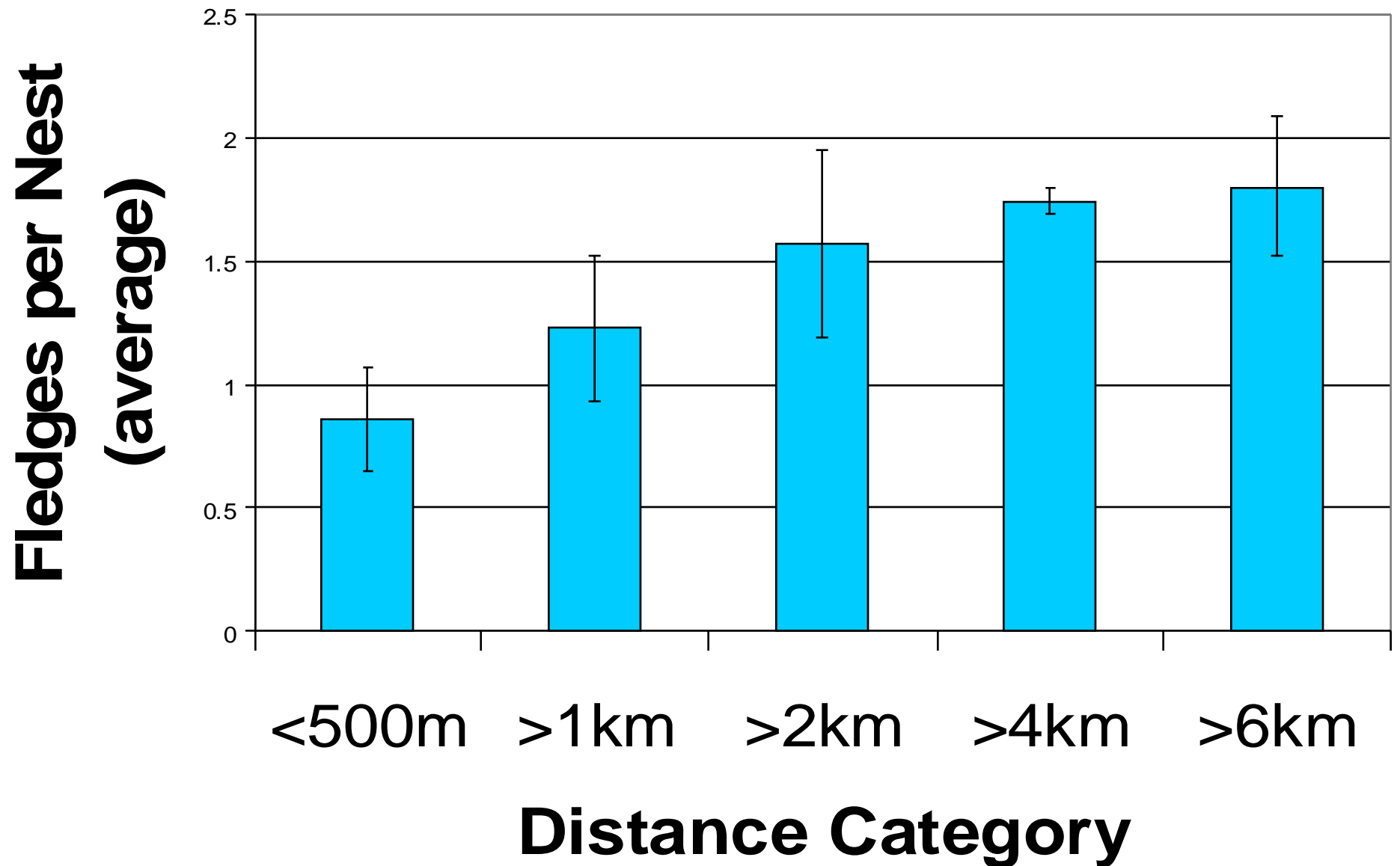
# Disturbance Data – Parking Lots



# Disturbance Data – Parking Lots

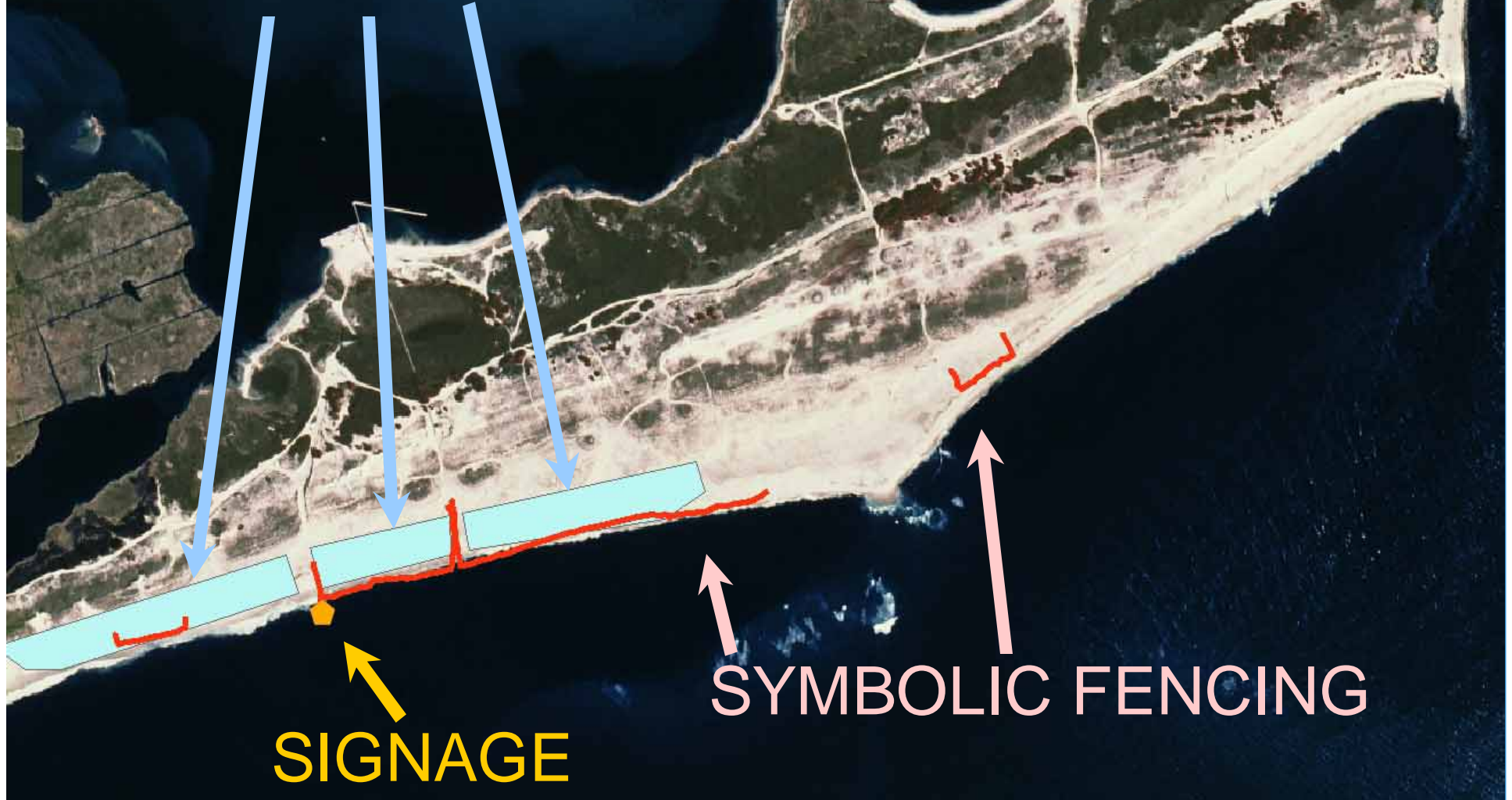


# Disturbance Data – Parking Lots



# Protection Data

LEAST TERN COLONIES



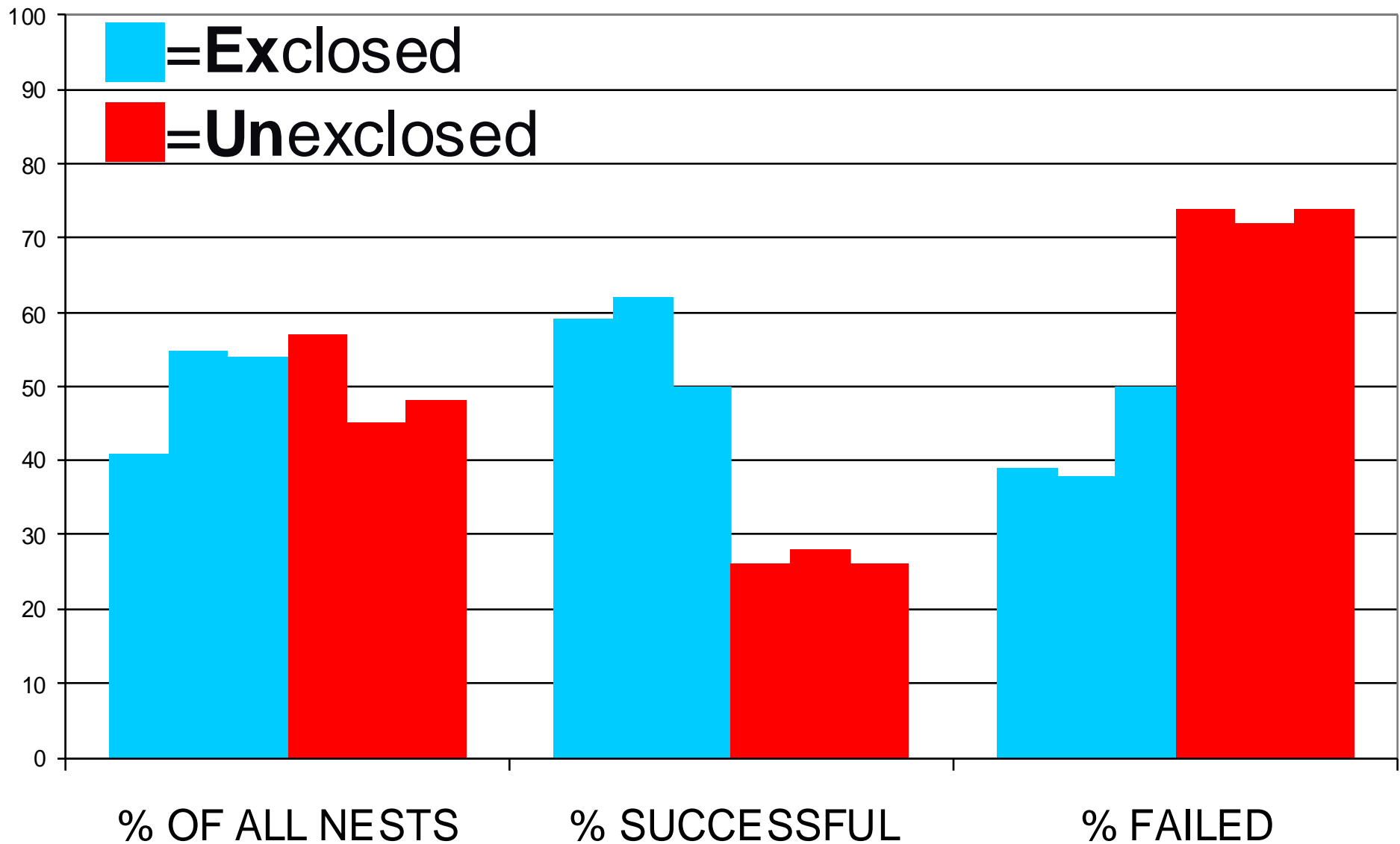


# Protection Data

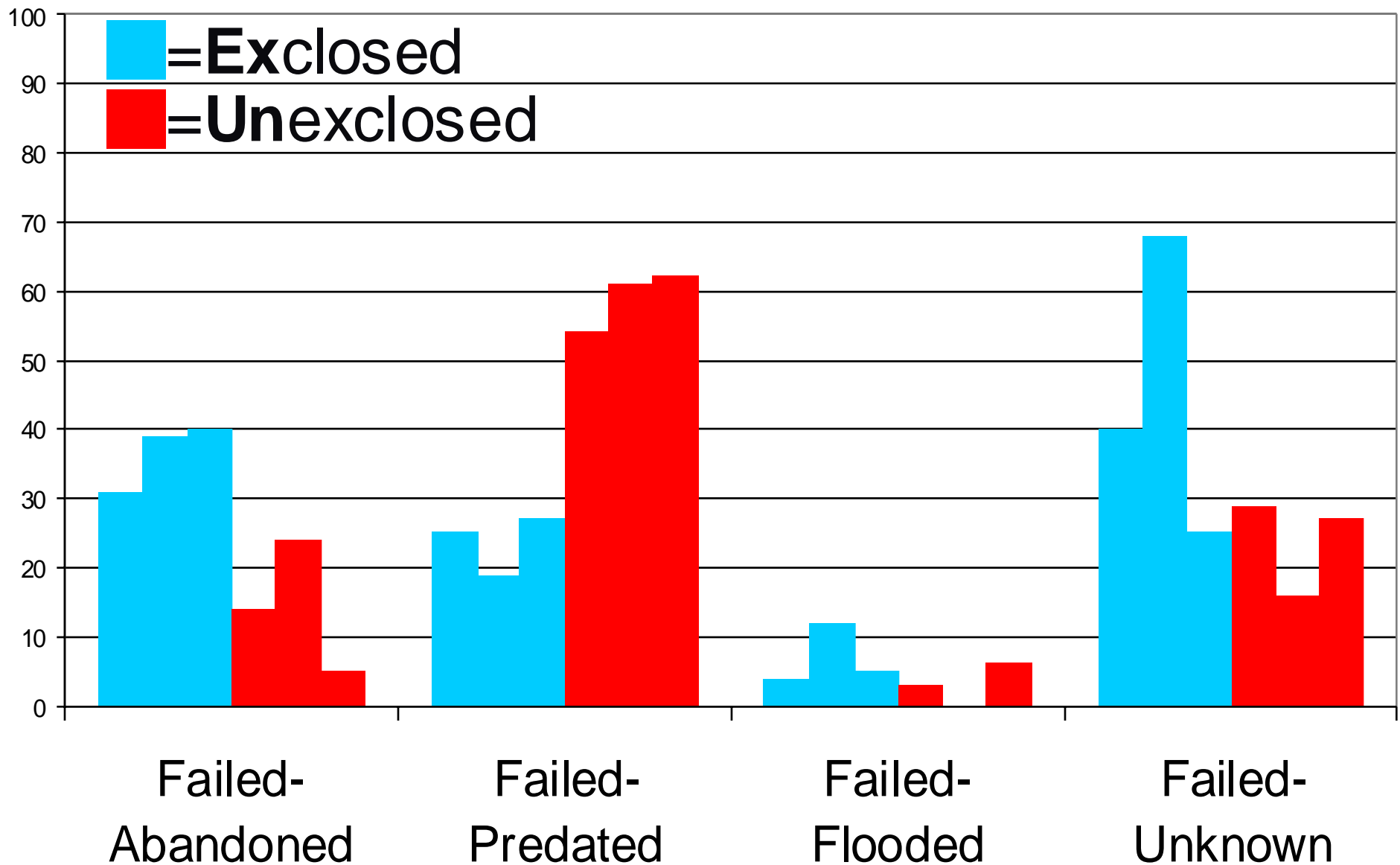




# Overall Exclosure Use 2003-05



# Of Failed Nests....2003-05



# Predator Data

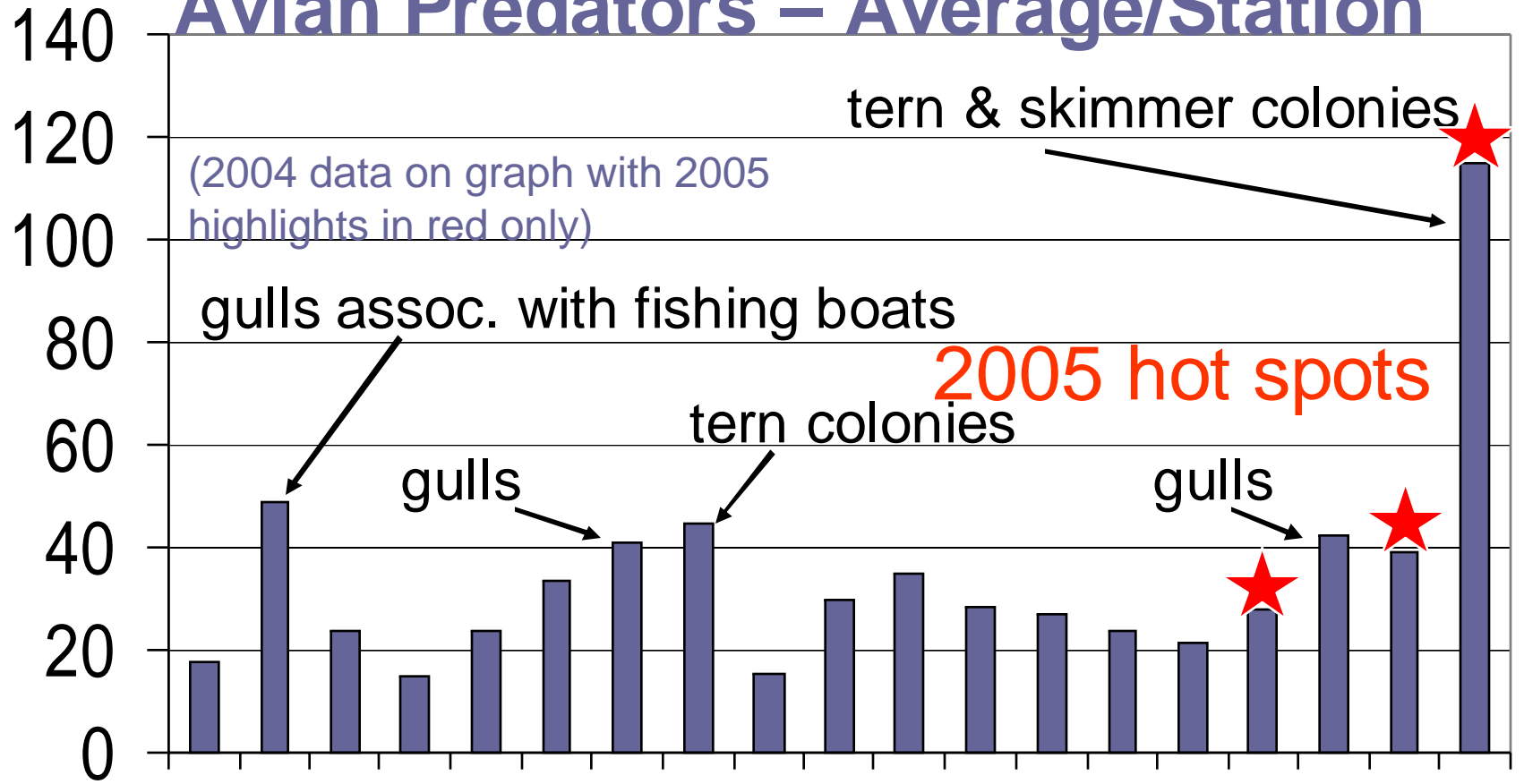
## ▲ Predator Survey Stations



<b>SPECIES</b>	<b>Total Count - All Stations 2004/ 2005</b>
Herring Gull	512 / 470
Least Tern	310 / 536
Common Tern	423 / 362
Great Black-backed Gull	279 / 359
Laughing Gull	210 / 300
Ring-billed Gull	93 / 224
Common Grackle	89 / 66
American Oystercatcher	18 / 41
Red-winged Blackbird	33 / 15
American Crow	29 / 20
Black Skimmer	15 / 16
European Starling	16 / 7
Roseate Tern	2 / 0
Green-backed Heron	2 / 0
Osprey	0 / 1
Black-crowned Night Heron	0 / 1

# Avian Predators – Average/Station

average predator count



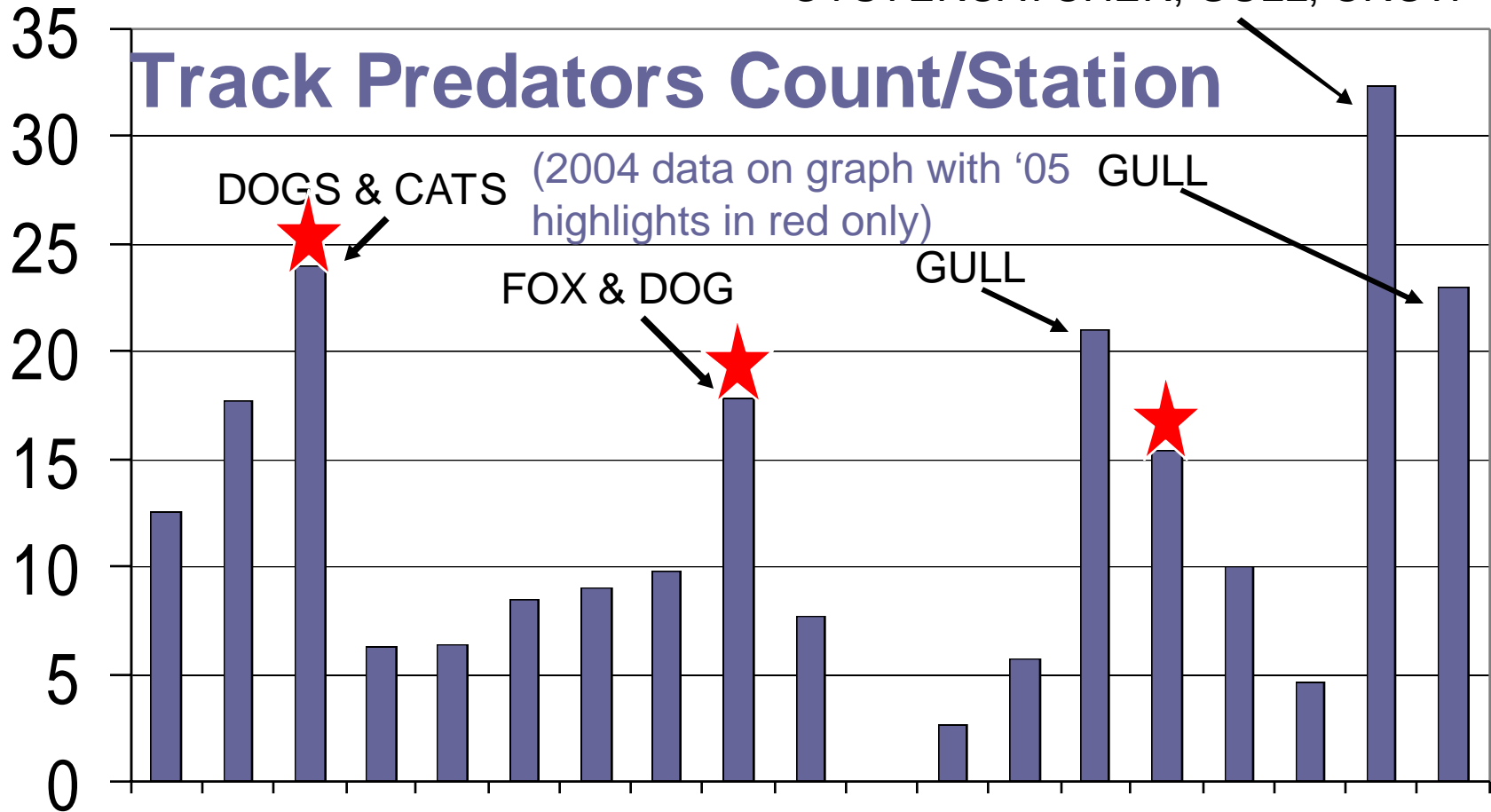
Southampton Beach  
Shinnecock West  
WI - Tiana Beach  
WI - Hampton Beach  
WI - Westhampton Beach  
WI - Westhampton Dunes  
Smith Point  
Fire Island NPS  
Robert Moses  
Moses Captree  
Oak Beach  
Gilgo Beach  
Tobay Beach  
Jones Beach State Park  
Hempstead  
Rockaways  
Gateway NPS  
Breezy Point

<b>SPECIES</b>	<b>Tracks Observed -All Stations 2004/ 2005</b>
<b>Gull Species</b>	<b>346 / 704</b>
<b>Dog</b>	<b>186 / 195</b>
<b>Fox</b>	<b>71 / 183</b>
<b>Cat</b>	<b>19 (~50) / 124</b>
<b>Deer</b>	<b>89 / 150</b>
<b>Crow</b>	<b>51 / 90</b>
<b>Unknown Mammal</b>	<b>43 / 38</b>
American Oystercatcher	12 / 72
Great Black-backed Gull	33 / -
Ghost Crab	28 / 21
Unknown Bird	9 / 3
Herring Gull	6 / -
Rat	4 / 2
Raccoon	1 / 3
Opossum	0 / 1

OYSTERCATCHER, GULL, CROW

# Track Predators Count/Station

average predator count



2005 Hot Spots





Watch our progress at:



<http://www.science.smith.edu/~jseavey>

