

The Use of Decoys and Sound Systems to Attract Marine Birds to Restored Habitat

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The Louis Berger Group, Inc.

Planners – Scientists – Engineers – Archaeologists

2nd Regional Workshop on Dredging, Beach Nourishment, and Bird Conservation

US Army Corp of Engineers



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Islip, Long Island

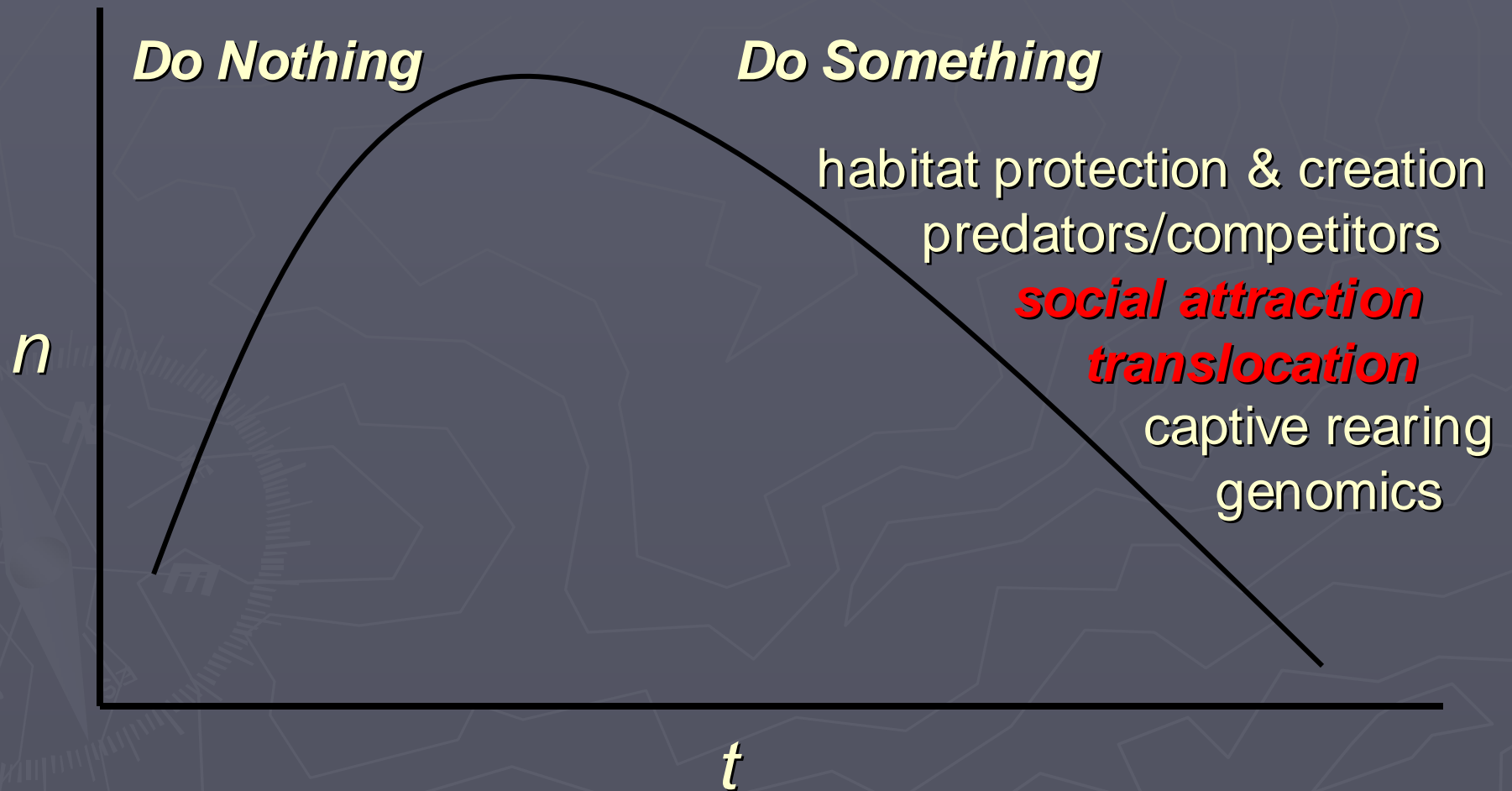
October 6-7, 2005

The background is a dark blue-grey color with a faint, light-colored topographic map overlay. The map shows various contour lines and geographical features. In the lower-left corner, there is a faint compass rose with the letters 'N', 'E', 'S', and 'W' indicating the cardinal directions.

National Audubon Society

Seabird Restoration Program

What should a biologist do?



What is a reasonable conservation goal?

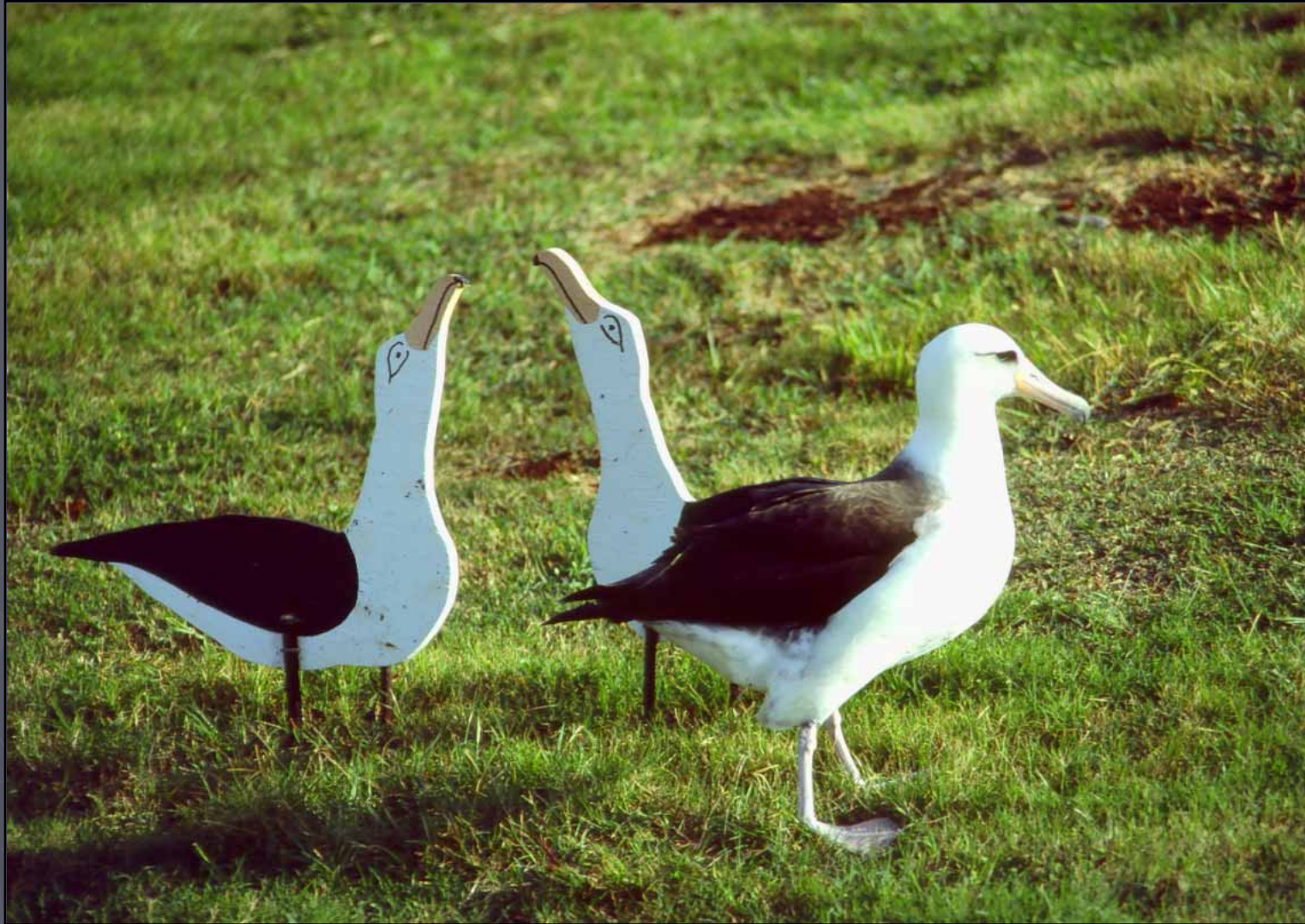
1. Augment one or more *existing* colonies
2. Create one or more *new* colonies
3. Reestablish *historical* colonies

What is a reasonable conservation target?

In excess of 75 species of seabirds nest on 10 or fewer islands worldwide:

Number of nesting islands or archipelagos	Estimated Number of species
?	5
1-3	36
4-10	39
11+	222
Total =	302

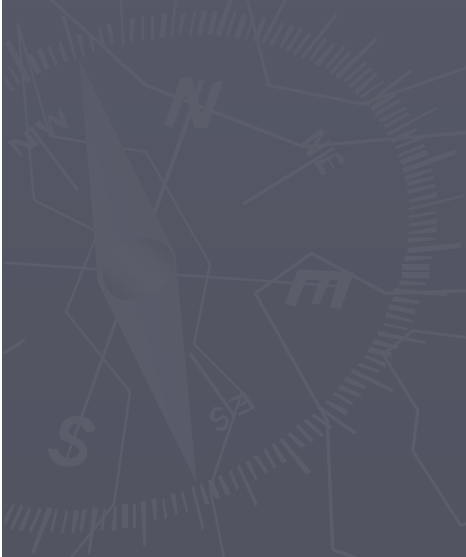
Source: *Seabirds of the World* by Peter Harrison













66 attraction/relocation projects world wide since 1970

yes! - breeding; **no!** - no breeding (yet); **?** - Unknown outcome/in progress; *Details to follow for projects that I worked on directly

PACIFIC

*Dark-rumped Petrel

Santa Cruz Island, Galapagos Islands, Ecuador - **yes!**

Pinta Island, Galapagos Islands, Ecuador - **no!**

Sponsors: CDRC; GNP; SRP

Asuncion and San Roque Islands, Mexico

Black Storm-petrel; Cassin's Auklet; Black-vented Petrel - ?

IC; SRP

Midway Island

Short-tailed Albatross - ?

USFWS; SRP

*Laysan Albatross

Kilauea Point, Kauai, Hawaii - **yes!**

Kaohikaipu Islet, Oahu, Hawaii - **no!**

SRP; USFWS; HDFWCD; HAS, EarthWatch

Palmyra Atoll, Line Islands

Sooty Tern - ?

USFWS

Jarvis Island, Line Islands

Phoenix Petrel - ?

USFWS

Torishima Island, Japan

Short-tailed Albatross - yes!

YIO; JWS

Middleton Island, Alaska

Common Murre - ?

USFWS

East Sand Island, Columbia River, Washington

Caspian Tern - yes!

OSU; USGS; CRITFC; RTR; BPA; SRP

Devil's Slide Rock and San Pedro Rock, California

Common Murre; Brandt's Cormorant - yes!

USFWS; HSU; SRP

Laysan Albatross, **Kilauea Point, Kauai**

- 2 year effort
- 100 decoys + sound + vegetation/predator control
- 5 pair nested in 1984, 96 nested in 2004

Laysan Albatross, **Kaohikaipu Islet, Oahu**

- 4 year effort
- 60 decoys + sound
- Maximum of 12 courting pair and many visitors but, pooped out



ATLANTIC

Perroquet Island, Mingan Islands, Quebec

Northern Gannet - ?

SRP, QLF; MICS

Country Island, Nova Scotia

Common Terns - ?

CWS

Gannet Rock, Yarmouth, Nova Scotia

Northern Gannet - ?

Sponsor: ??

Sheep Island, New Brunswick

Common Terns - ?

GMBO

Machias Seal Island, New Brunswick

Roseate Terns - ?

CWS

Ship Island, Maine

Common Terns - Yes!

USFWS

Seal Island NWR, Maine

***Arctic Terns, Atlantic Puffins, Razorbills - Yes!**

SRP; USFWS

Wooden Ball Island, Maine

Arctic Terns - Yes! Atlantic Puffins - ?

SRP

Matinicus Rock, Maine

Common Murres - ?

SRP; USFWS

Metinic Island, Maine

Arctic Terns - Yes!

USFWS

Eastern Egg Rock, Maine

***Arctic Terns, Atlantic Puffins - Yes!**

SRP; MDIFW

***Leach's Storm-petrel**

Old Hump Ledge, Maine- **Yes!**

Ross Island, Franklin Island - **No!**

SRP; MDIFW

Pond Island NWR, Maine

Common and Roseate Terns - Yes!

SRP; USFWS

Jenny Island, Maine

Common Terns - Yes!

SRP; MDIFW

Outer Green Island, Maine

Common and Roseate Terns - Yes!

SRP; MDIFW

Stratton Island, Maine

Common and Roseate Terns - Yes!

SRP; PNAS

Seavy Island, New Hampshire

Common and Roseate Terns - ?

NHAS; NHDFG

Seavy Island, New Hampshire

Common and Roseate Terns - ?

NHAS; NHDFG

Ram Island, Massachusetts

Common and Roseate Terns - ?

MDFW

Penekese Island, Massachusetts

Common and Roseate Terns - Yes!

MDFW

Muskeget Island, Massachusetts

Common and Roseate Terns - Yes!

TNC; CUNY

Gardner Point, Connecticut

Least Terns - ?

CNC

Cartwright PT, New York

Roseate Terns - ?

GGIP

Mike's and Beach Island (Barnegat Bay), NJ

Least Terns - ?

NJFG

Stone Harbor, New Jersey

Great Egrets - ?

MCCS

Assateague Island National Seashore, Virginia

Least Terns - ?

CNWR

Bird Island (St. Catherine's Island), Georgia

Black Skimmers; Least Terns; Gull-billed Terns - ?

GDNR

Bird Island, Ft. Lauderdale, Florida

Least Terns - ?

FCAS

Sanibel Island, Florida

Black Skimmers - ?

USFWS

Mississippi Delta, Mississippi

Least Terns - ?

MCA

Rockport, Texas

Black Skimmers - ?

AT; USFWS

Castle Harbor, Bermuda

White-tailed Tropicbird; Yellow-crowned Night-heron; Cahow (Bermuda Petrel) - ?

BDC

Guana Island, British Virgin Islands

Caribbean Flamingo - ?

FC; GIMSCM

Inch Geck, Scotland

Little Tern - ?

SNH

Leachs Storm-petrel, Old Hump Ledge, Maine

- 3 year attraction effort
- 60 artificial burrows + sound
- 15% Colonization (1996)

Leachs Storm-petrel, Ross Island, Maine

- 1 year effort
- 40 artificial burrows + sound
- <10% visitation *no* breeding

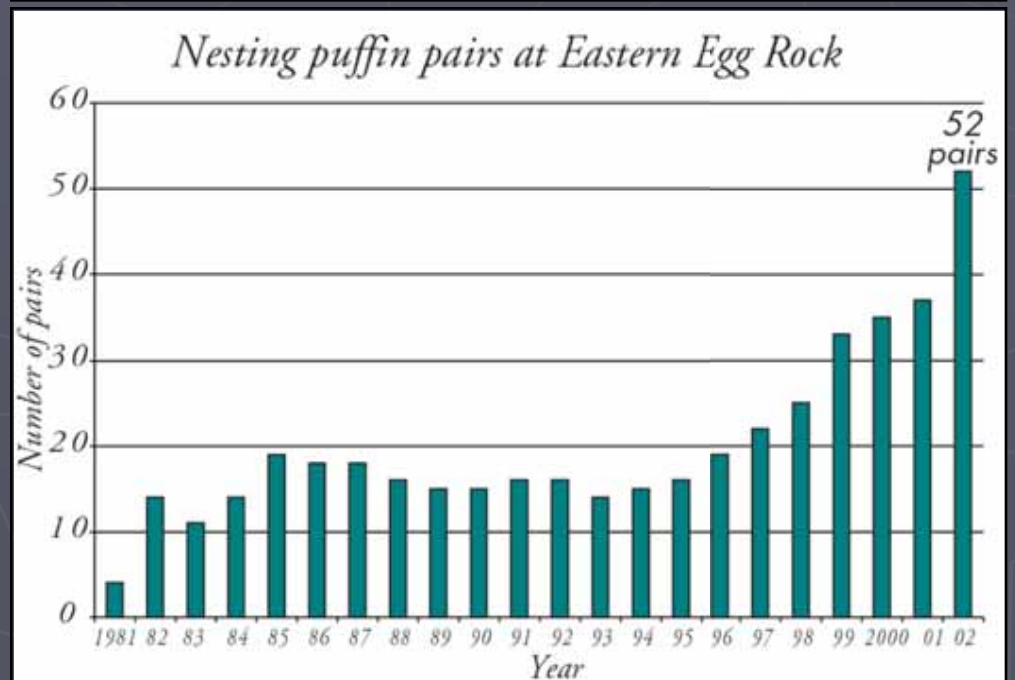
Leachs Storm-petrel, Franklin Island, Maine

- 1 year effort
- 40 artificial burrows + sound
- visitation *no* breeding



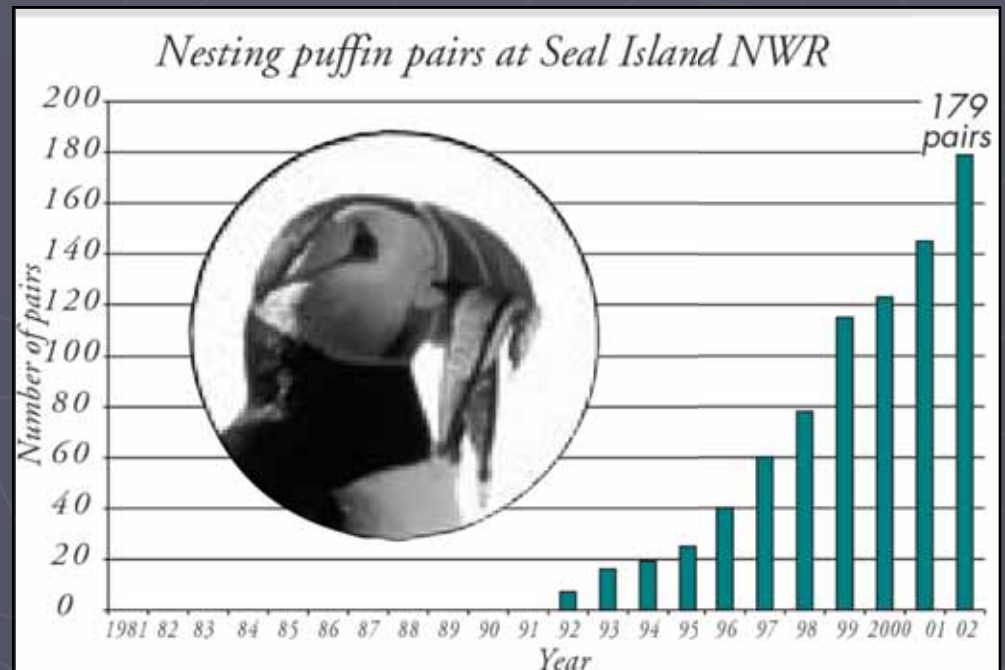
Atlantic Puffin, Eastern Egg Rock, Maine

- 30 year effort
- 1,000 translocations + decoys + vegetation and predator control
- 5 pair nested in 1981, 63 nested in 2003



Atlantic Puffin, Seal Island, Maine

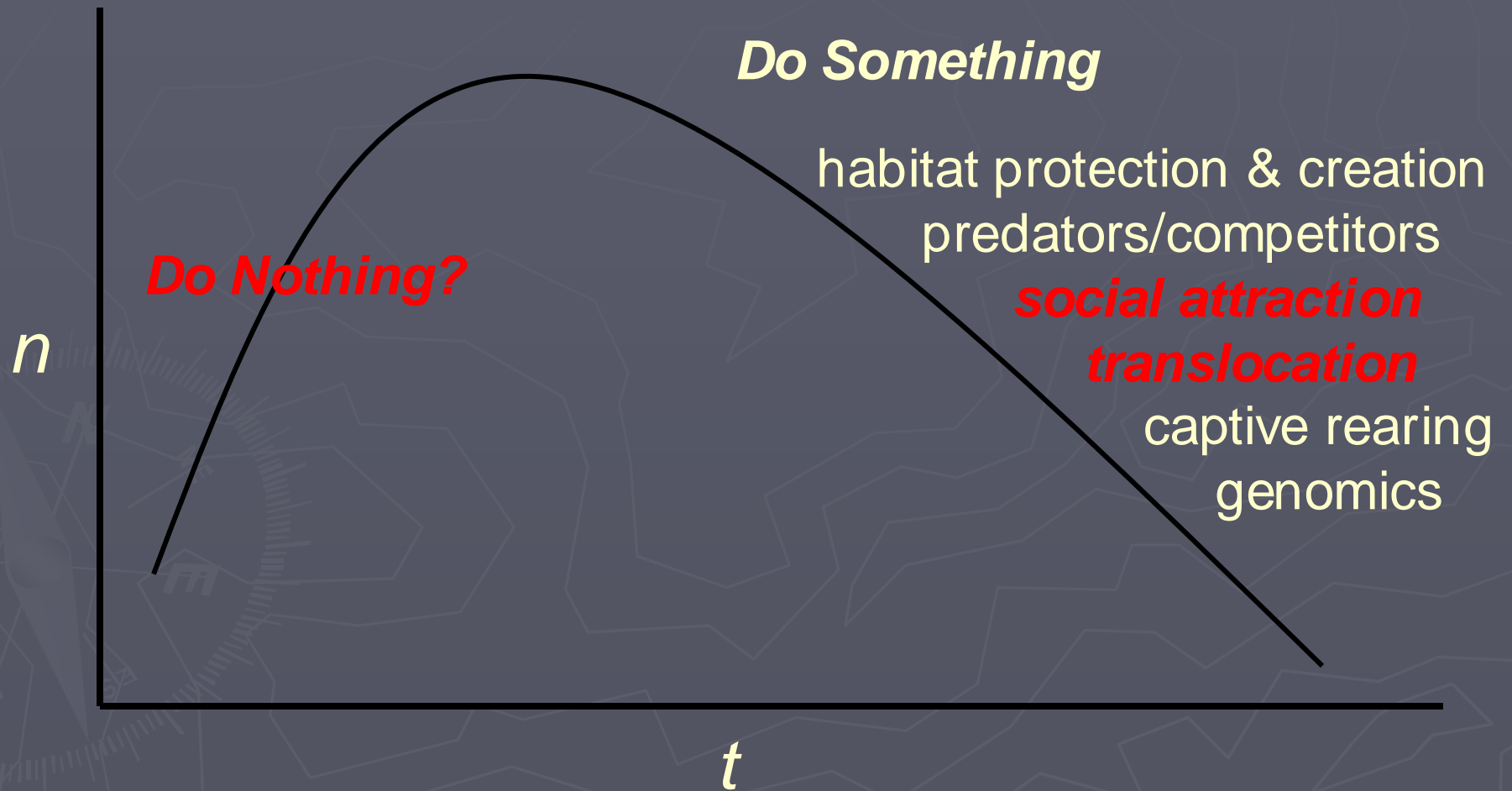
- 22 year effort
- 1000 translocations + decoys + predator control
- 7 pair nested in 1992, 187 nested in 2003



Lessons learned?

1. Attraction/relocation can help to increase existing colonies, create new colonies, and restart historical colonies (any of these outcomes can be highly desirable).
2. Habitat must be intact or at least improving.
3. For attraction, presence of a healthy population of prospectors is desirable and possibly essential.
4. For relocation, you need a collecting source and rearing should be as simple possible.
5. For both attraction and relocation *luck* can be a major variable (both good and bad varieties abound).

What should a biologist do?



AT- Audubon Texas
BDC- Bermuda Dept. of Conservation
BI- Birdwatch Ireland
BPA- Bonneville Power Administration
CDFG- California Department of Fish and Game
CDRC- Charles Darwin Research Center
CNC- Connecticut Nature Conservancy
CBO- Copeland Bird Observatory
CNWR- Chincoteague National Wildlife Refuge
CRITFC- Columbia River Inter-Tribal Fish Commission
CDPR- California Dept. of Parks and Recreation
CSD- City of San Diego
CUNY- College of Staten Island, City University of New York
CLA- City of Los Angeles
DOD- Department of Defense
ERS- Ecology Research Service
FC- Falconwood Corporation
FCAS- Florida Coastal Audubon Sanctuaries
FOMI- Friends of Mana Island
GIMSM- Guana Island Marine Science Month
GGIP- Great Gull Island Project
GNP- Galapagos National Park
GMBO- Grand Manan Bird Observatory
GDNR- Georgia Dept. of Natural Resources
GIMSM- Guana Island Marine Science Month
HAS- Hawaii Audubon Society
HDFW- Hawaii Division of Forestry and Wildlife
HSU- Humboldt State University
IC- Island Conservation

NHAS- New Hampshire Audubon Society
NHDFG- New Hampshire Dept. of Fish and Game
JWS- Japanese Wildbird Society
NAWS- Naval Air Weapons Station
NJFG- New Jersey Fish and Game
MAS- Mississippi Coastal Audubon
MDIFW- Maine Department of Inland Fish and Wildlife
MDFW- Mass. Division of Fisheries and Wildlife
MICS- Mingan Island Cetacean Study
MDNR- Minnesota Department of Natural Resources
MCCS- Manomet Center for Conservation Sciences
NSWNPWS- New South Wales National Parks Wildlife Service
NZDOC- New Zealand Dept. of Conservation
NZFBS- New Zealand Forest and Bird Society
ODNR- Ohio Department of Natural Resources
OSNZ- Ornithological Society of New Zealand
QLF- Quebec Labrador Foundation
RTR- Real Time Research
SNH- Scottish Natural Heritage
SRP- Seabird Restoration Program (Audubon)
TDLPW- Tasmania Dept. of Lands, Parks and Wildlife
TNC- The Nature Conservancy
USFWS- United States Fish and Wildlife Service
USGS- United States Geologic Service
VAFB- Vandenberg Air Force Base
YIO- Yamashina Institute for Ornithology
WC- Wellington Conservancy
WBEP- Wisconsin Bureau of Endangered Resources
WMI- Wildlife Management International, Ltd.