Status of Caspian Tern Breeding Colonies at Both Managed and Un-managed Sites in the Columbia Basin and at Corps-constructed Islands

2014 Research Results

Oregon State University

Real Time Research, Inc.

USGS-Oregon Cooperative Fish & Wildlife Research Unit

Acknowledgments

Co-authors: Ken Collis (Co-PI), Don Lyons, Pete Loschl, Tim Lawes, Yasuko Suzuki, Kirsten Bixler, Alexa Piggott, Allen Evans, Brad Cramer, Cheryl Horton, and Mike Hawbecker

Collaborators:

U.S. Bureau of Reclamation
NOAA Fisheries
Oregon Department of Fish and Wildlife
Washington Department of Fish and Wildlife
U.S. Fish & Wildlife Service
Pacific States Marine Fisheries Commission

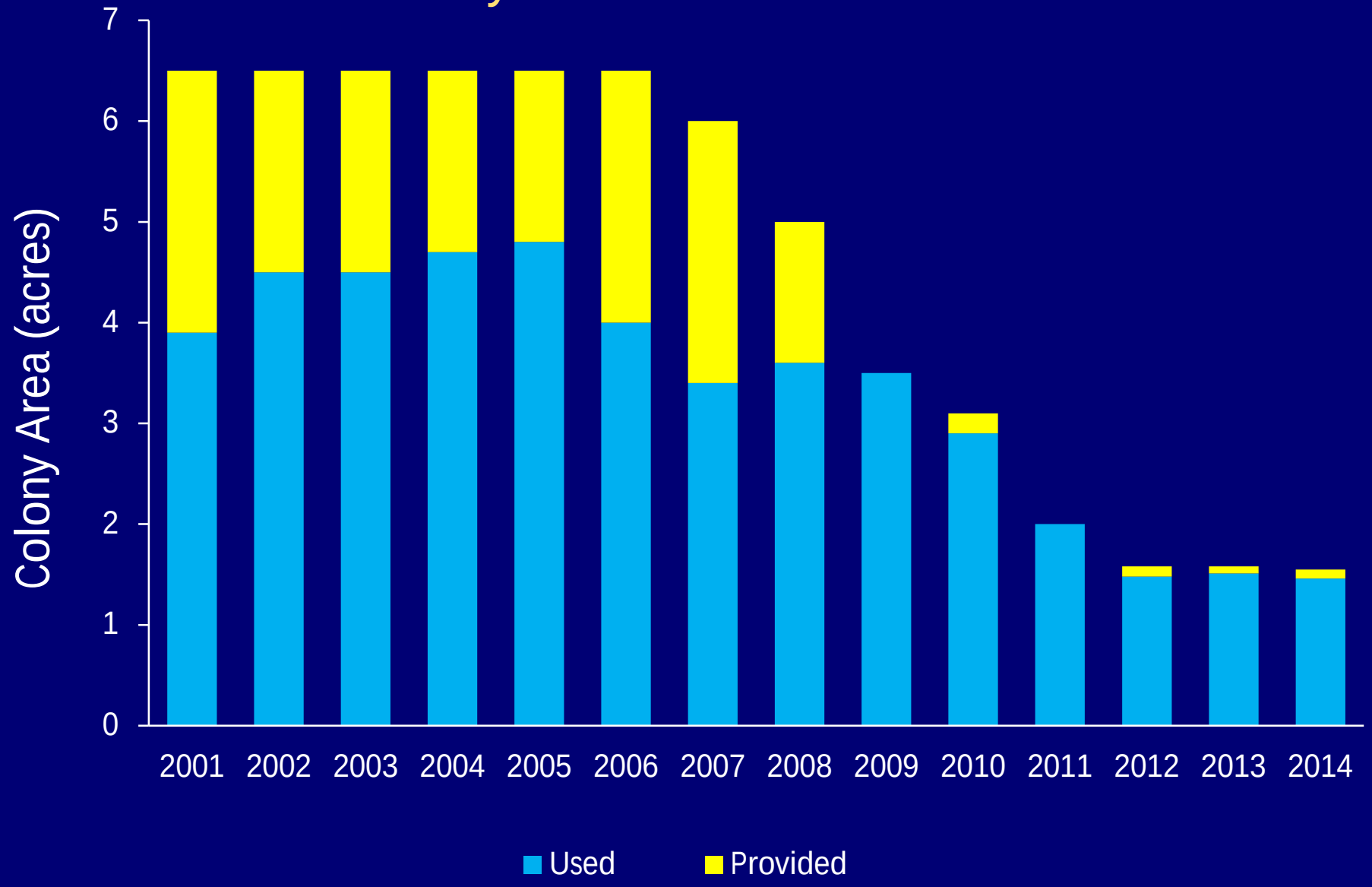
Funding:

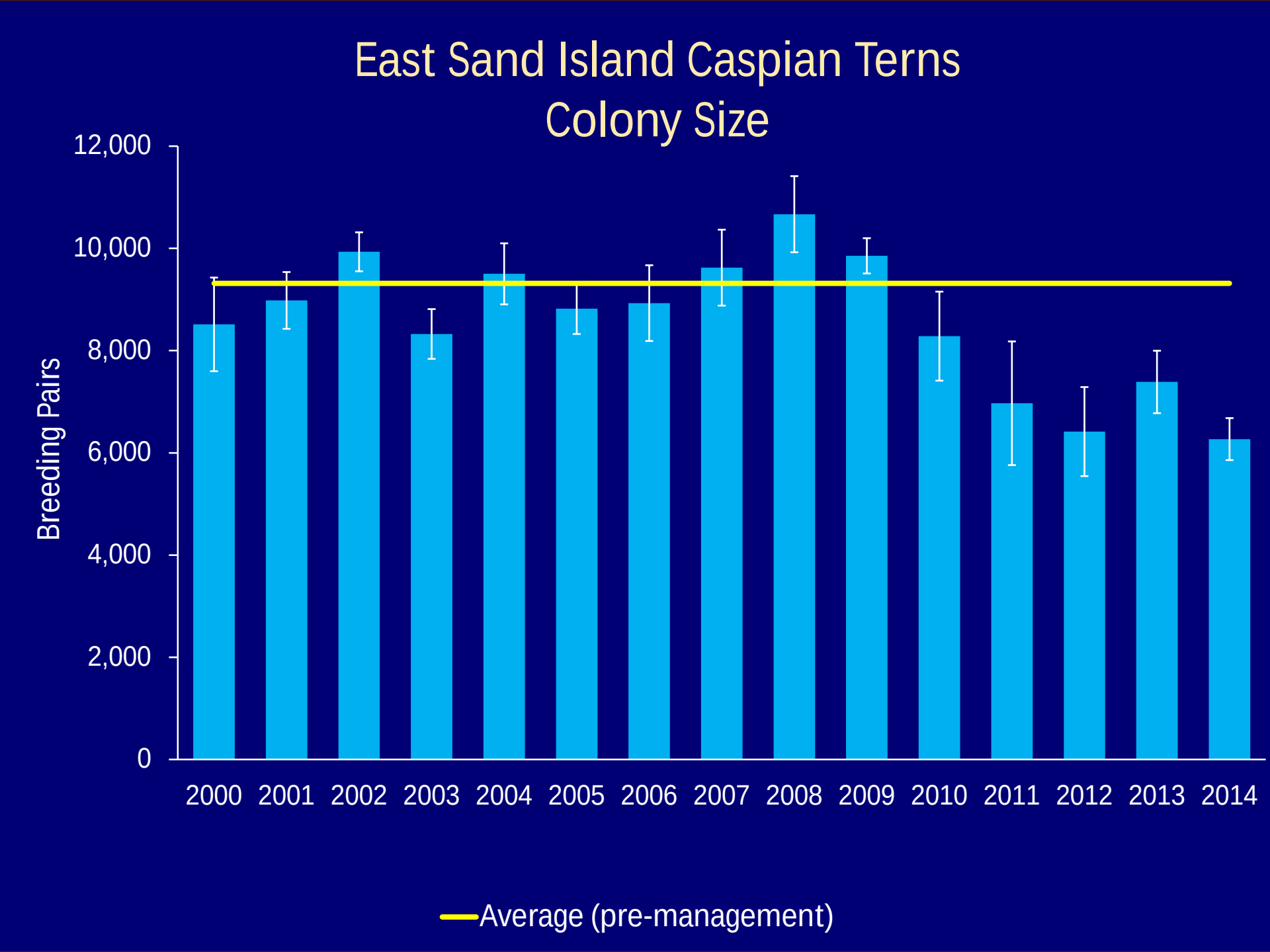
U.S. Army Corps of Engineers, Walla Walla District (David Trachtenbarg & Tim Fleeger)
U.S. Army Corps of Engineers, Portland District (Cindy Studebaker)
Bonneville Power Administration (Dave Roberts & John Skidmore)
Grant County Public Utility District (Curt Dotson)
Bureau of Reclamation (Mike Lesky & Ann Haynes)

Caspian Tern Colony on East Sand Island
The “Push”

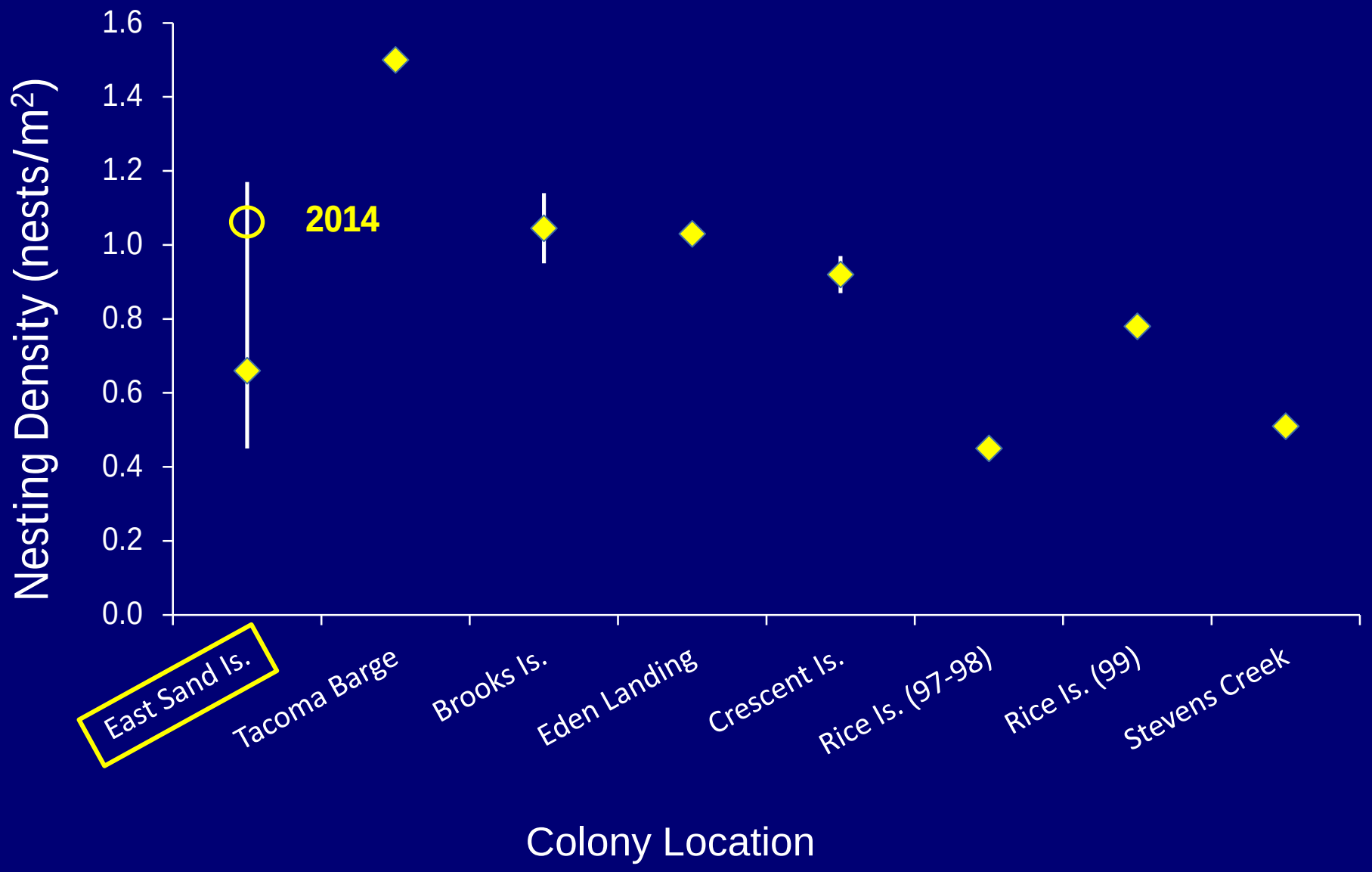
Limiting Caspian Terns to 1.55 acres of suitable nesting habitat in the Columbia Estuary

East Sand Island Caspian Terns
Colony Area Provided and Used

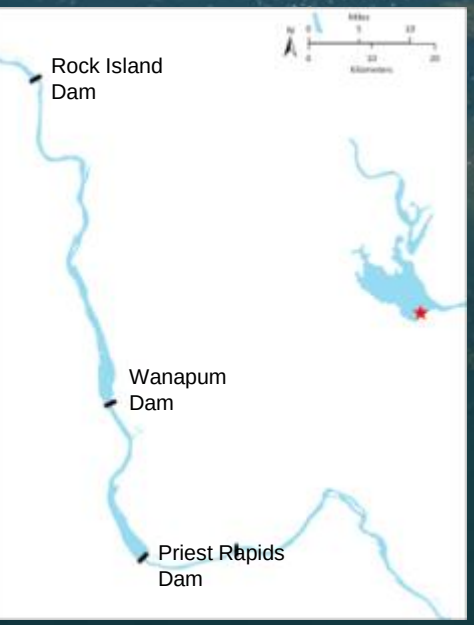



East Sand Island Caspian Terns
Colony Size
Breeding Pairs
12,000
10,000
8,000
6,000
4,000
2,000
0
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
Average (pre-management)

Caspian Tern Nesting Density



Goose Island Tern Colony, Potholes Reservoir
More “Push”



- Island created by reservoir
- Much larger gull colony shares the island
- Management to reduce tern colony size initiated this year

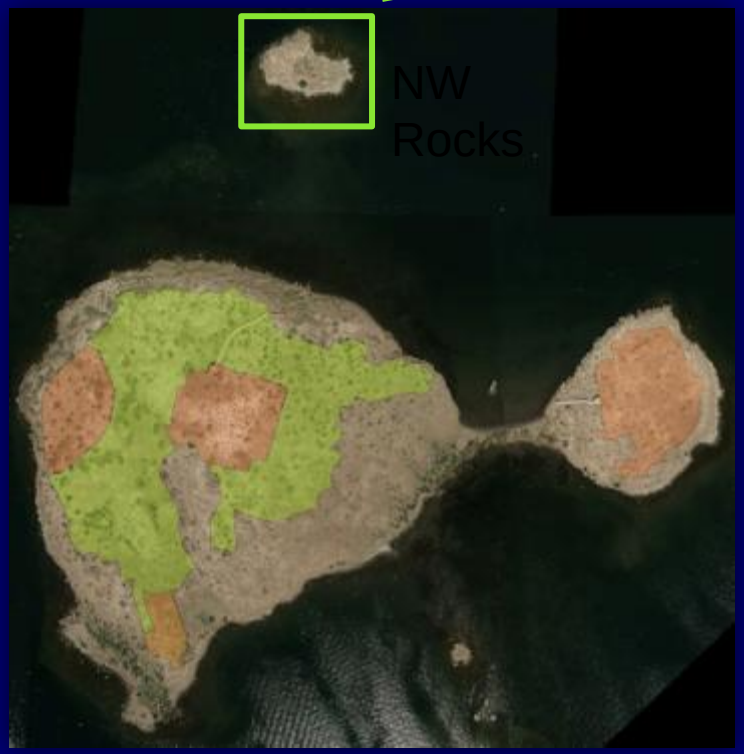
Goose Island Passive and Active Dissuasion

- Dissuasion materials delivered to Goose Island via helicopter (25 February)
- Passive dissuasion constructed with pier blocks, rebar, PVC tubing, polypropylene rope, and caution tape
- 2.38 acres of tern nesting habitat covered with passive dissuasion
- Active hazing of gulls and terns initiated in late March

Goose Island Passive and Active Dissuasion

- Successful in preventing Caspian terns from nesting on Goose Island proper
- 3 pairs of Caspian terns attempted to nest
- 3 Caspian tern eggs were removed from nests by researchers soon after laying

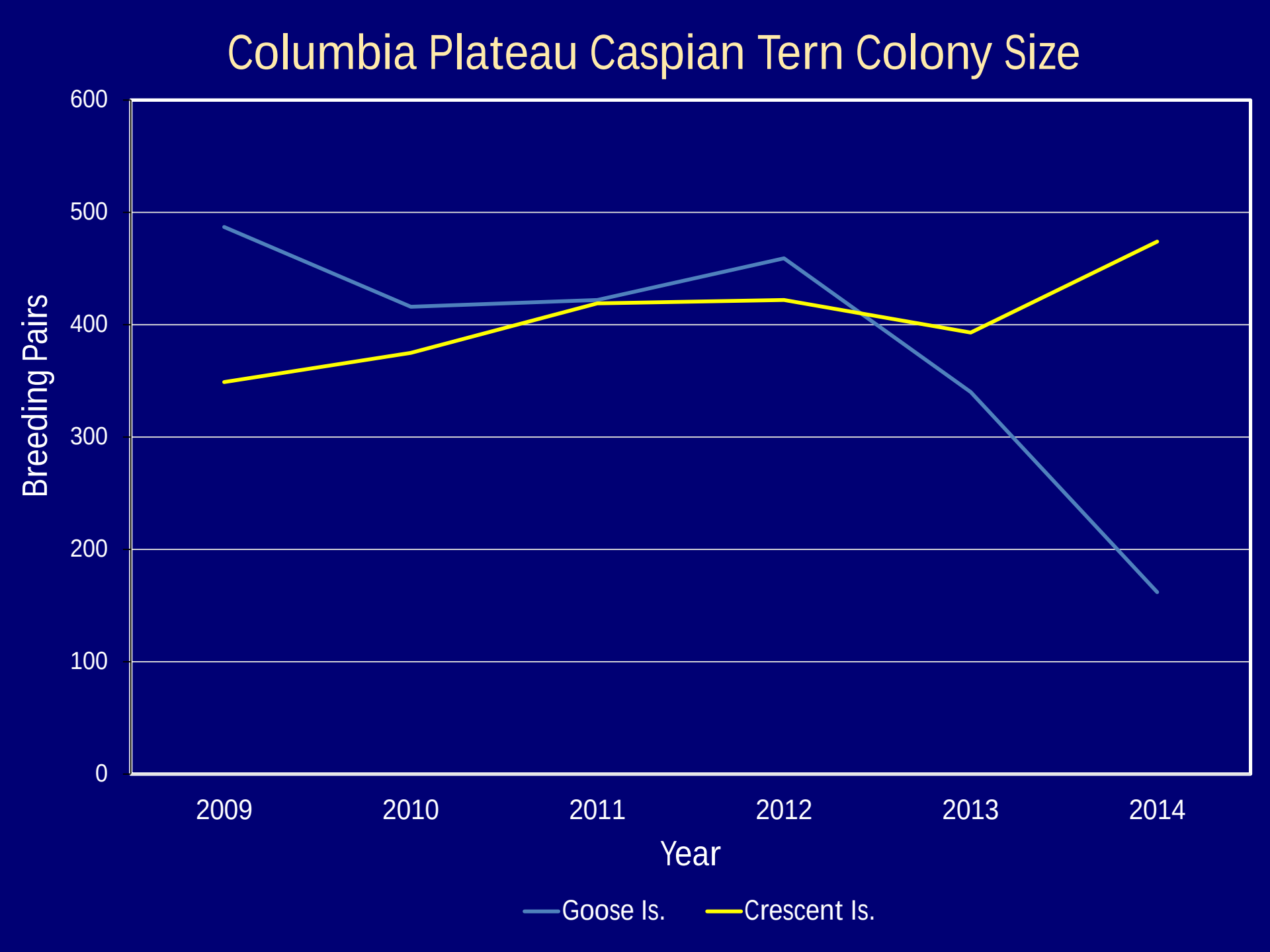
Caspian Tern Nesting on “Northwest Rocks”

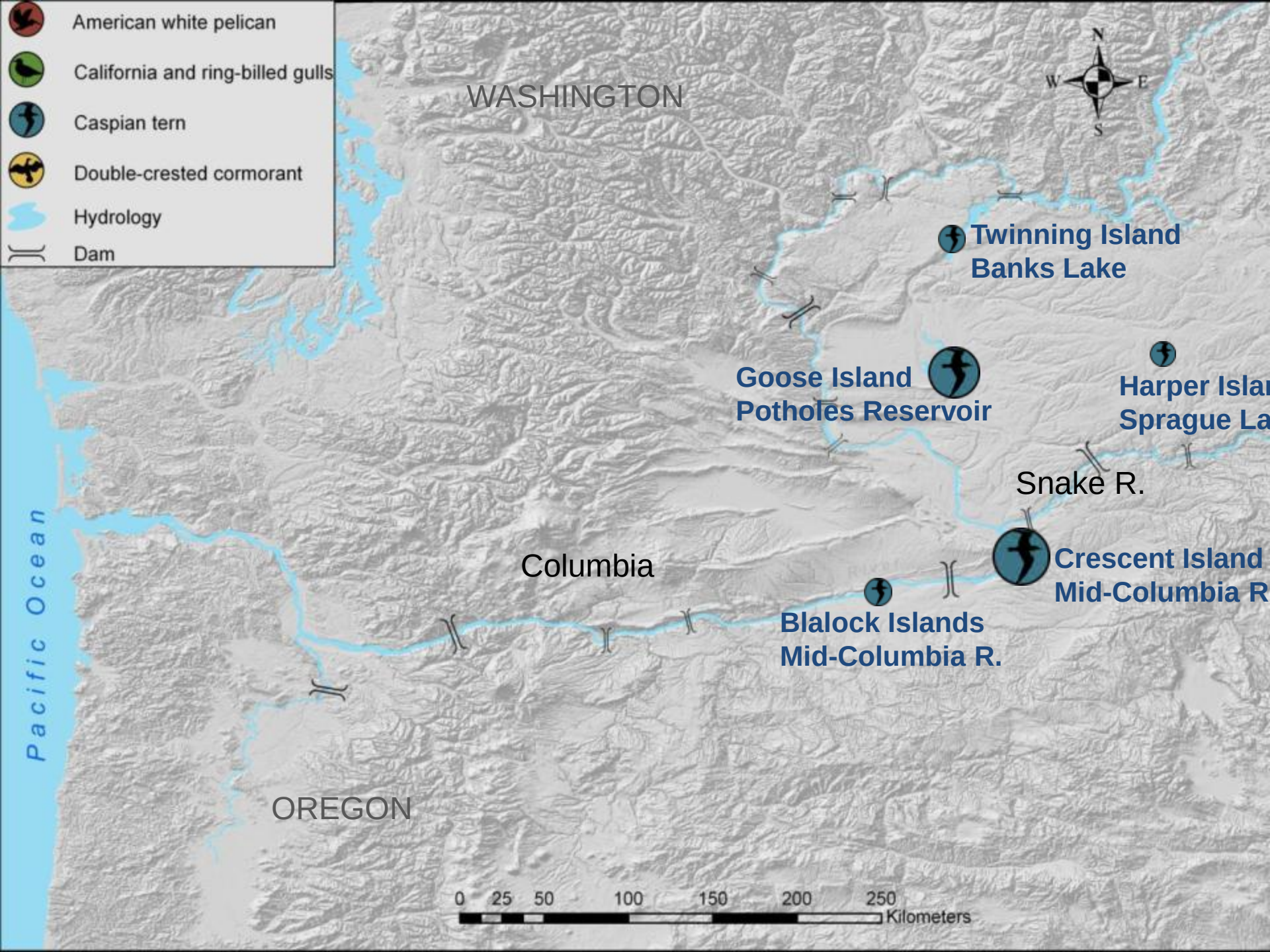


- Caspian tern nesting initiated on 23 April at Northwest Rocks
- No prior history of Caspian terns nesting at Northwest Rocks
- Action agencies decided not to haze terns at Northwest Rocks
- 159 Caspian tern pairs nested on NW Rocks
- 46 fledgling Caspian terns raised

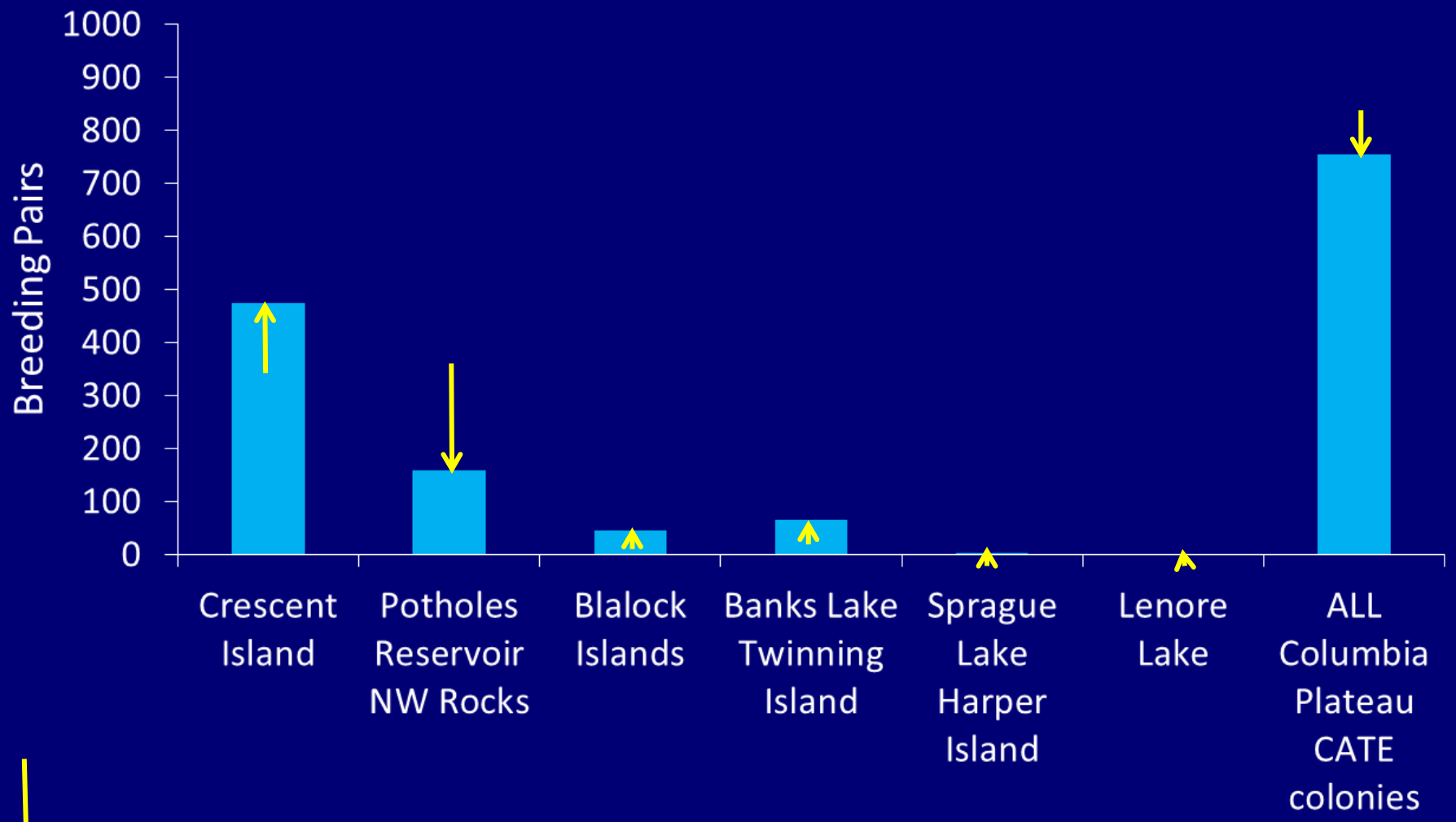
Crescent Island Caspian Tern Colony
McNary Pool, Mid-Columbia River

- Island created from dredge spoil in 1985
- Much larger California gull colony shares the island
- Management to reduce size of Caspian tern colony scheduled for 2015


Columbia Plateau Caspian Tern Colony Size
600
500
400
300
200
100
0
Breeding Pairs
2009
2010
2011
2012
2013
2014
Year
Goose Is.
Crescent Is.

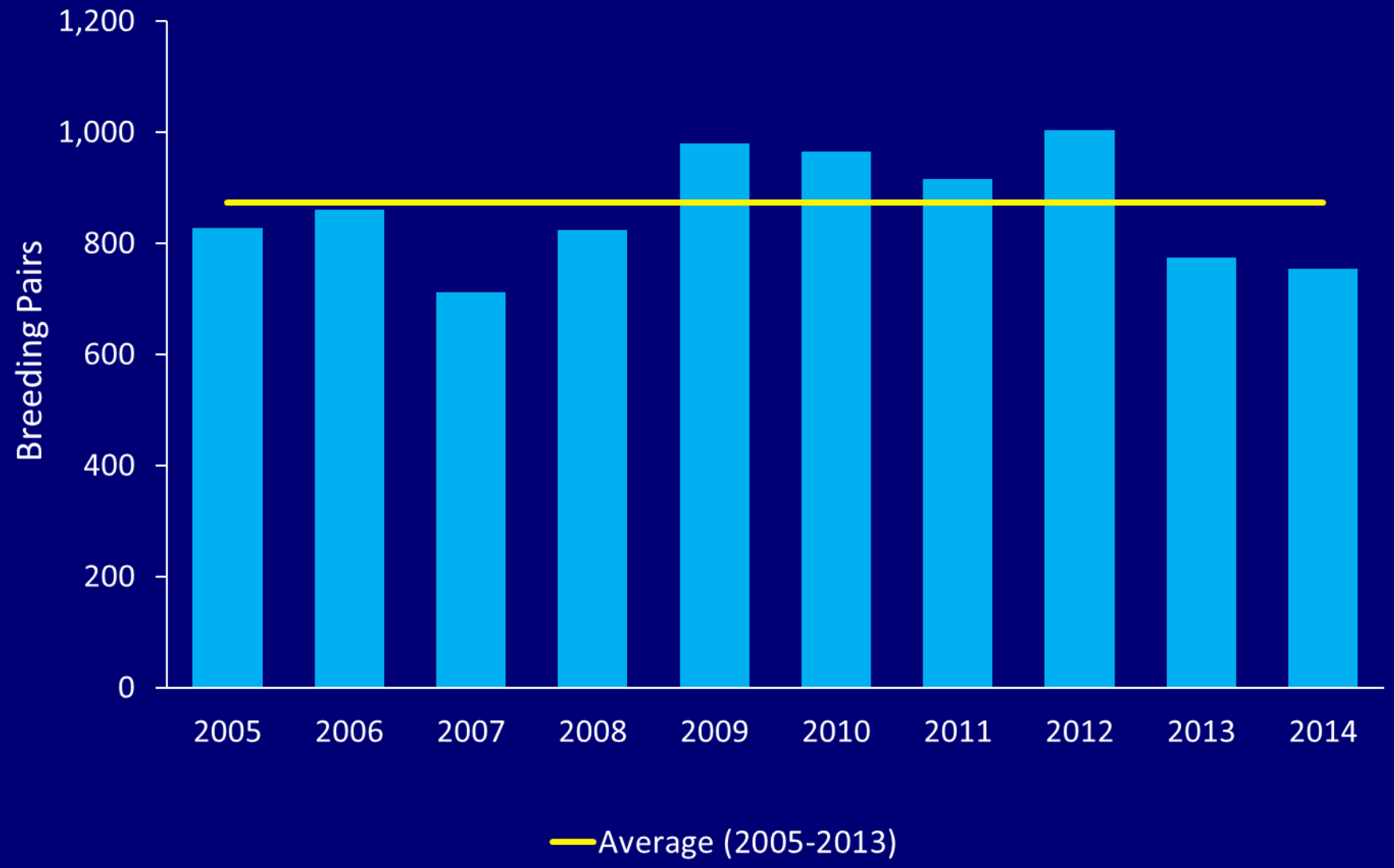

American white pelican
California and ring-billed gulls
Caspian tern
Double-crested cormorant
Hydrology
Dam
WASHINGTON
N
W
E
S
Twinning Island
Banks Lake
Goose Island
Potholes Reservoir
Harper Islan
Sprague La
Snake R.
Crescent Island
Mid-Columbia R
Columbia
Blalock Islands
Mid-Columbia R.
Pacific Ocean
OREGON
0 25 50 100 150 200 250
Kilometers

Columbia Plateau Region
2014 Caspian Tern Colony Sizes



Arrows indicate change from 2013

Caspian Tern Breeding Population Size on the Columbia Plateau



The “Pull”

Corps-constructed Tern Islands as Alternative Colony Sites

Malheur Lake New Tern Island, Malheur National Wildlife Refuge, OR

6 Corps-constructed Tern Islands monitored in 2014

Crump Lake
Warner Valley

Summer Lake Wildlife Area
East Link Impoundment

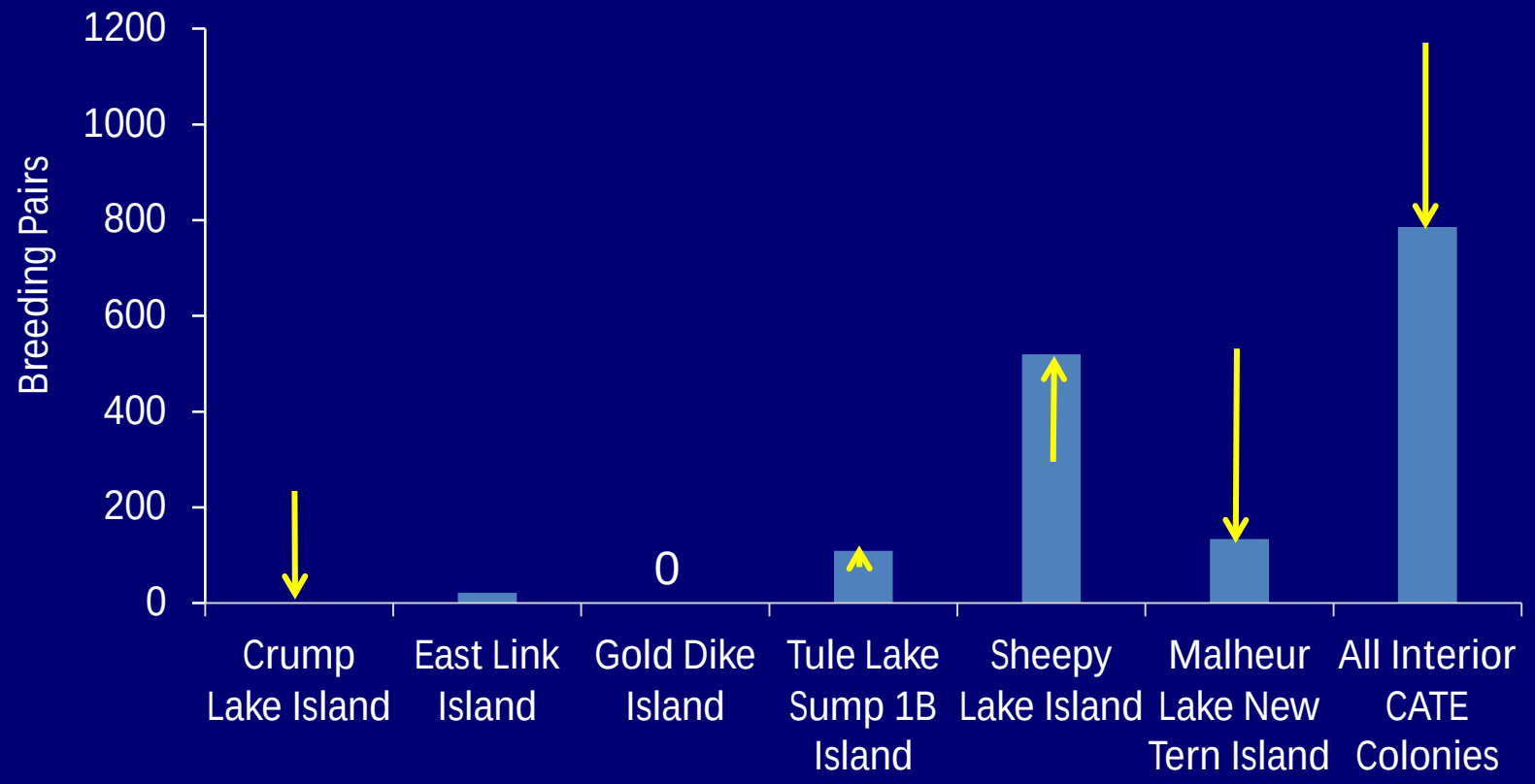
Summer Lake Wildlife Area
Gold Dike Impoundment

Malheur Lake
Malheur NWR

Sheepy Lake
Lower Klamath NWR

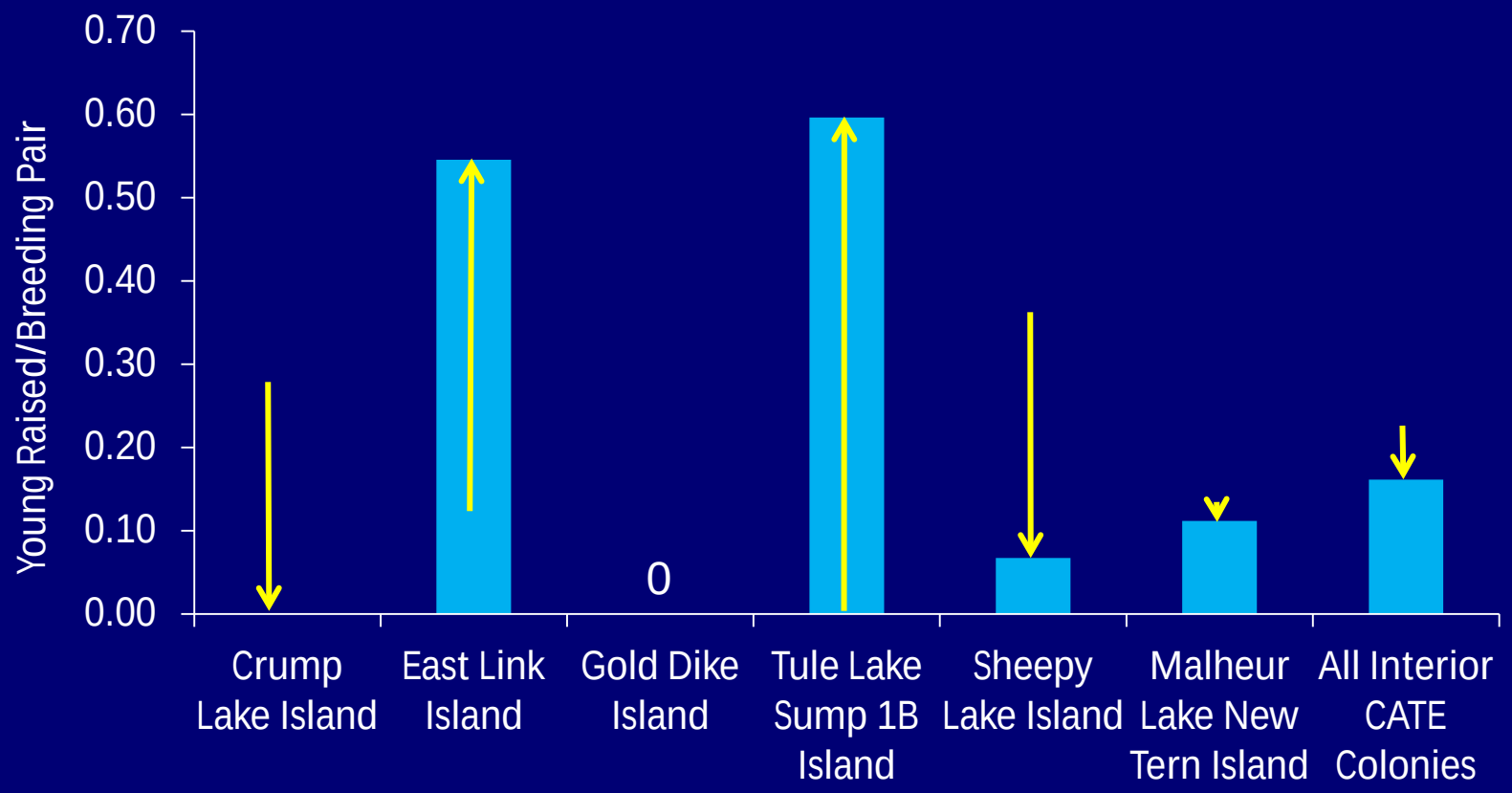
Tule Lake Sump 1B
Tule Lake NWR

Corps-constructed Tern Islands 2014 Caspian Tern Colony Sizes



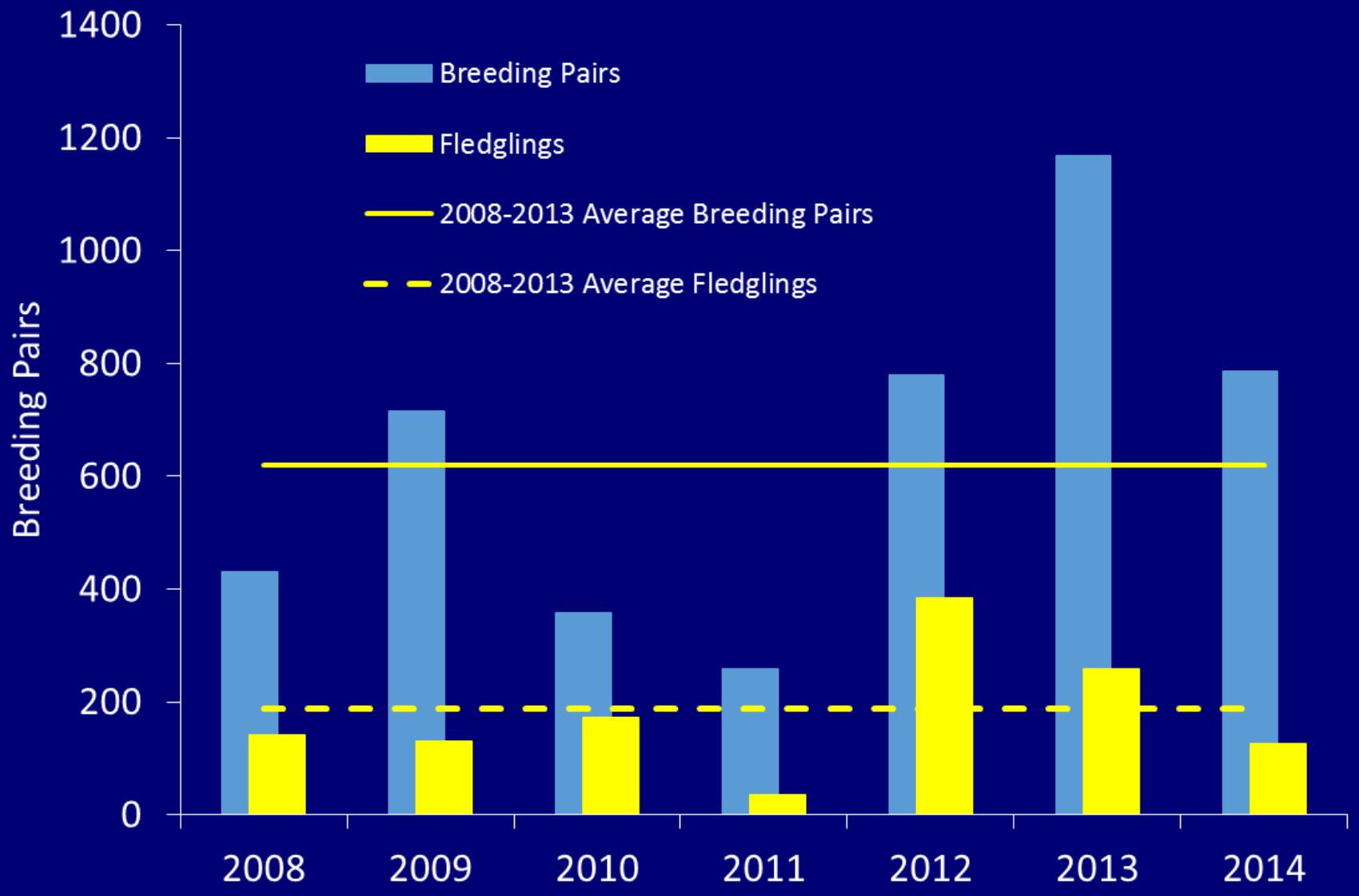
Arrows indicate change from 2013

Corps-constructed Tern Islands
2014 Caspian Tern Colony Productivity



Arrows indicate change from 2013

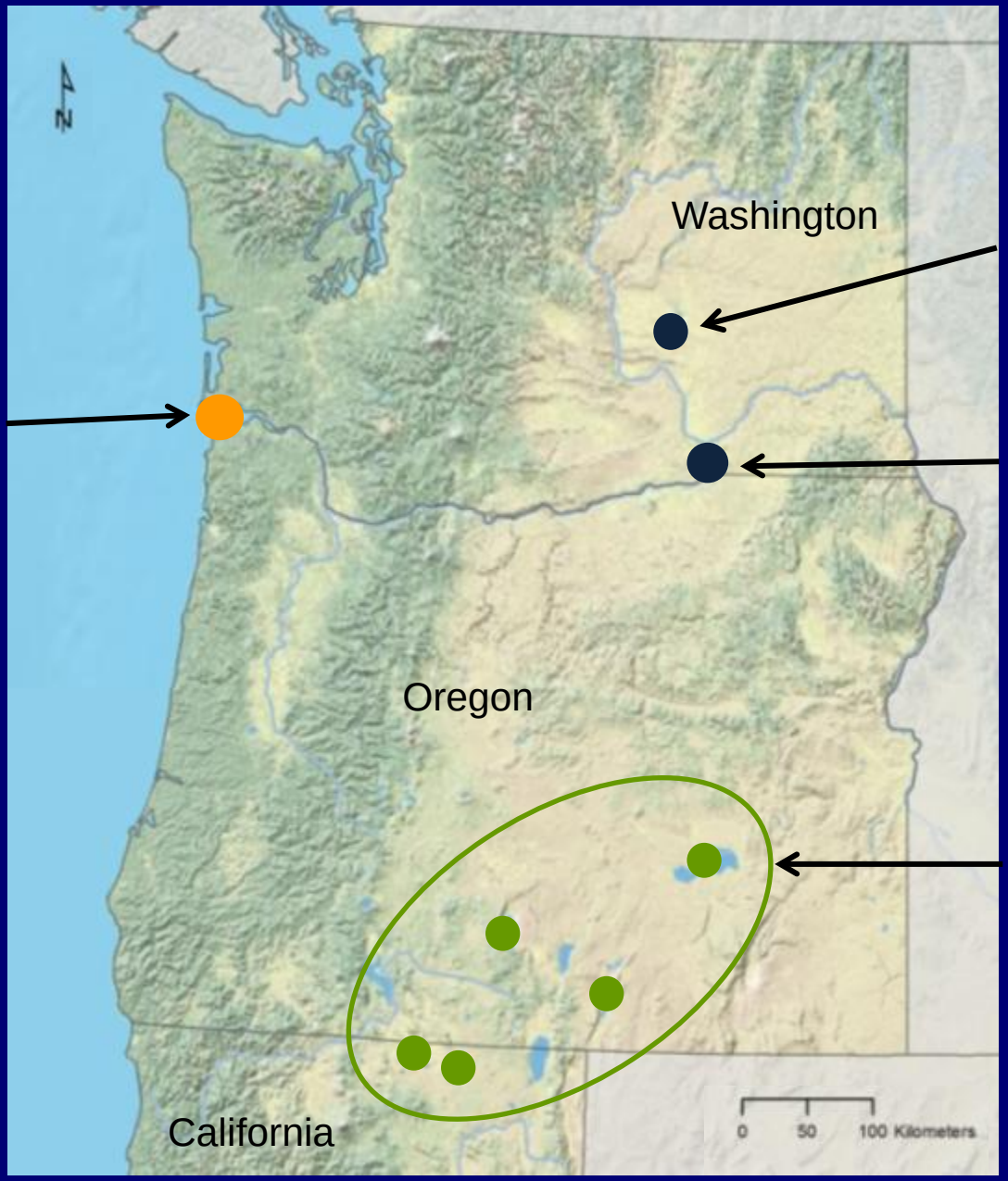
Corps-constructed Tern Islands
Caspian Tern Nesting



Summary of Key Findings in 2014

- Caspian tern colony at East Sand Island in Columbia River estuary was slightly smaller and nesting density lower than in 2013
- Despite management that prevented all nesting by Caspian terns on Goose Island – Potholes Reservoir, the Columbia Plateau population declined only slightly
- Severe drought in the basins where Corps-constructed tern islands are located led to reduced colony size and lower nesting success at most islands; combined breeding pairs declined 33% from 2013
- Total number of breeding Caspian terns at all colonies in the Pacific Northwest was somewhat lower in 2014 compared to 2013

Prospects for Caspian Terns in 2015



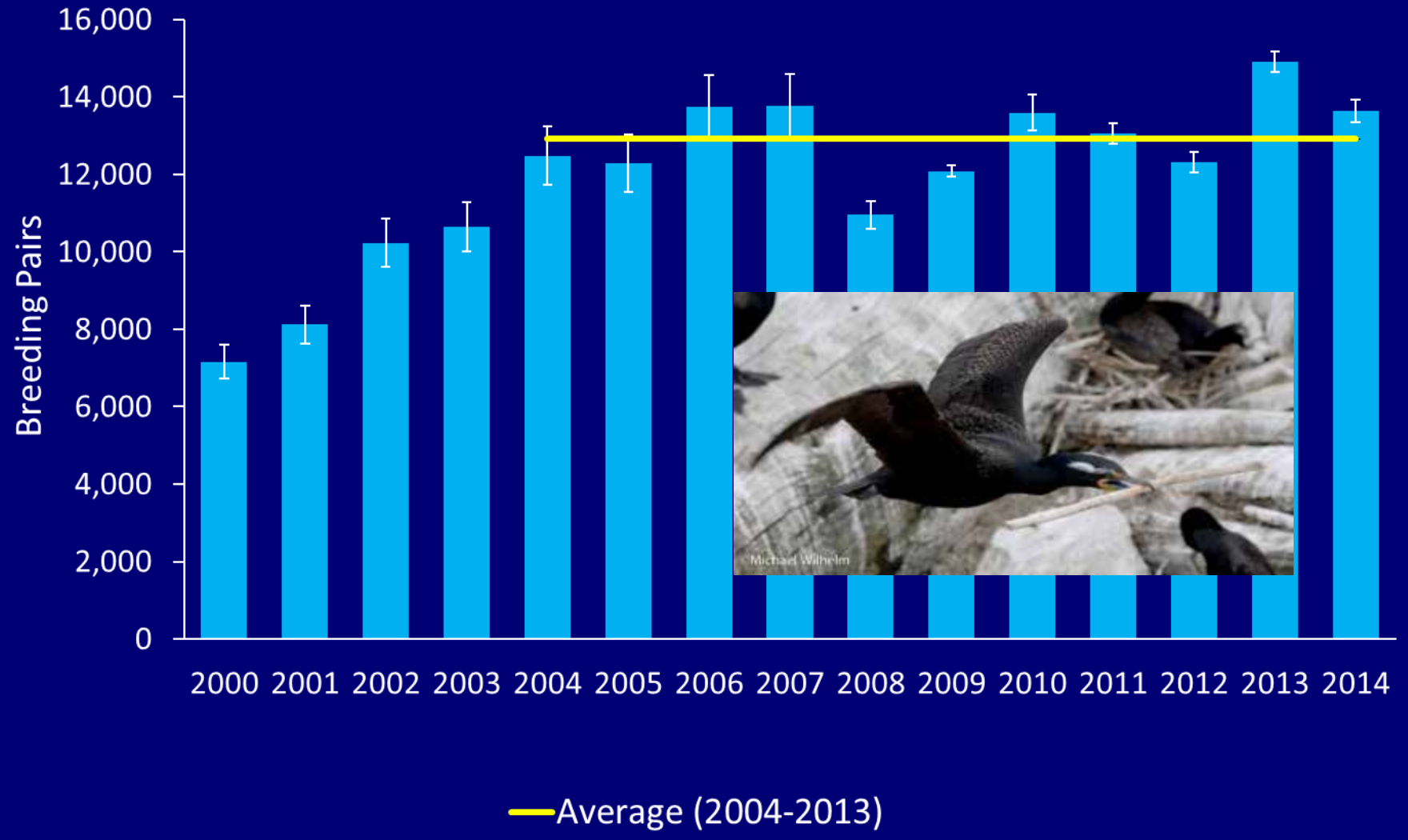
Goose Island (managed)

East Sand Island (managed)

Crescent Island (managed)

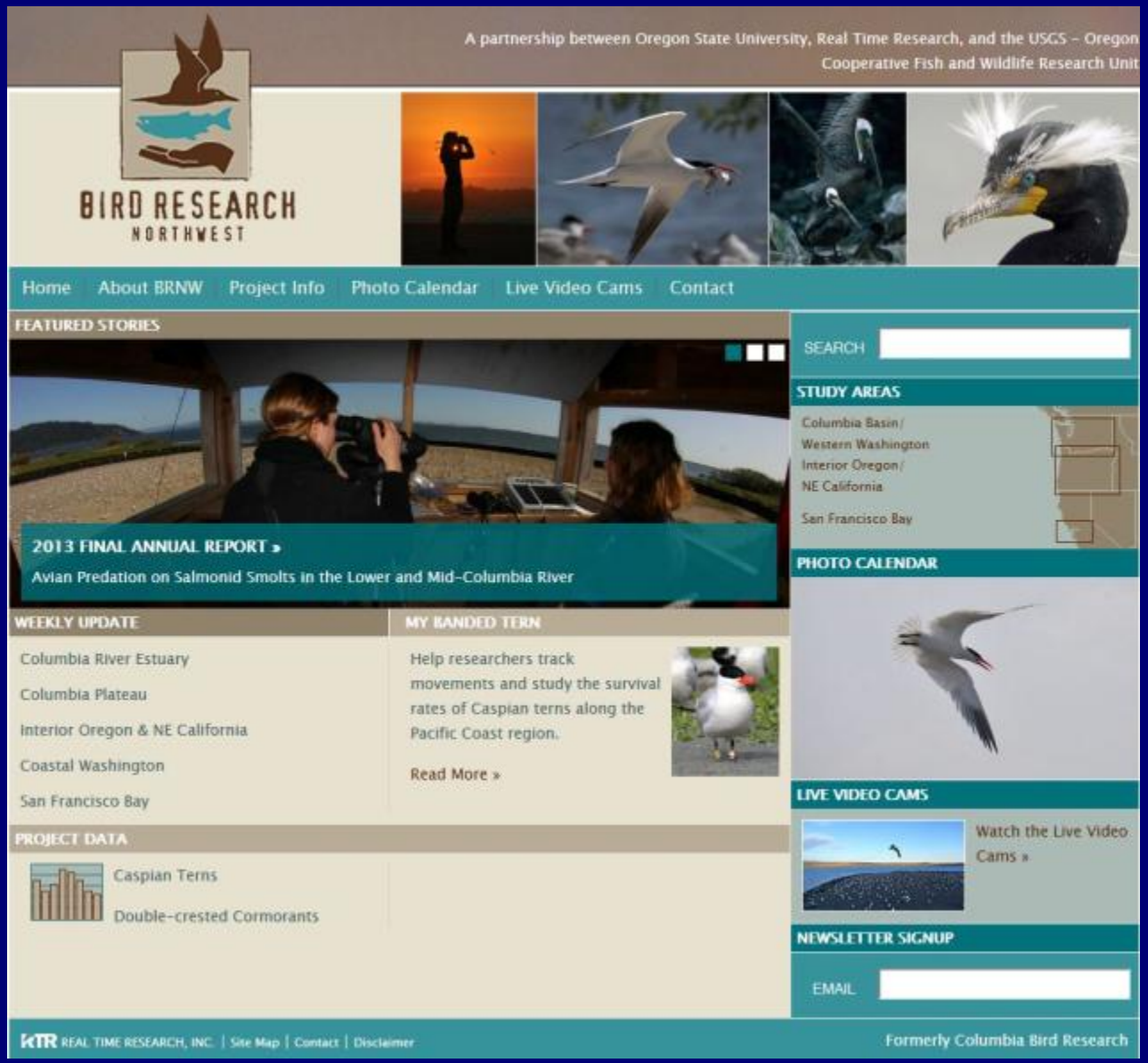
Corps-constructed Islands (drought)

East Sand Island Double-crested Cormorant Colony Size



Thanks! Questions?

www.birdresearchnw.org

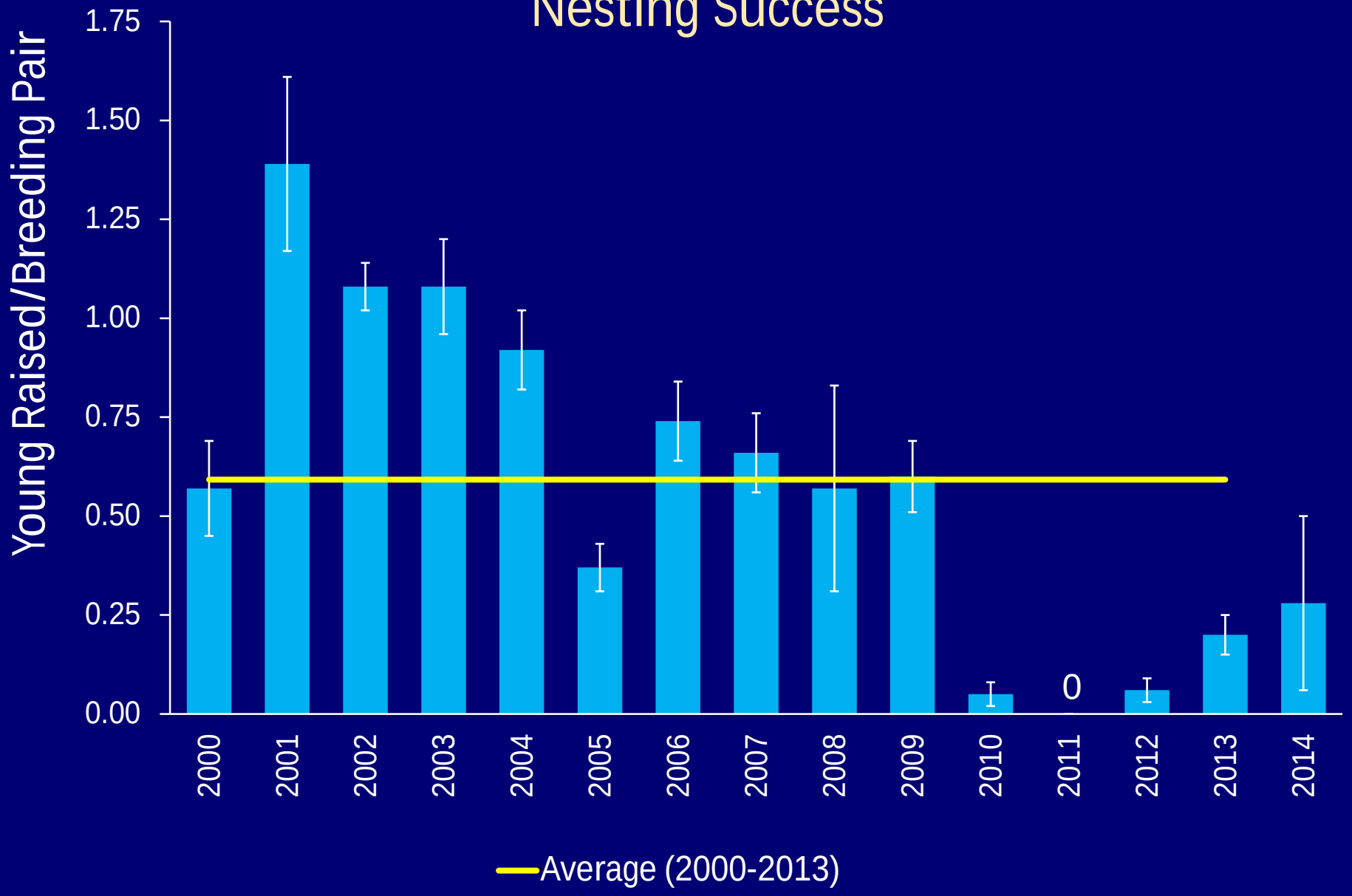


Goose Island Archipelago
Potholes Reservoir

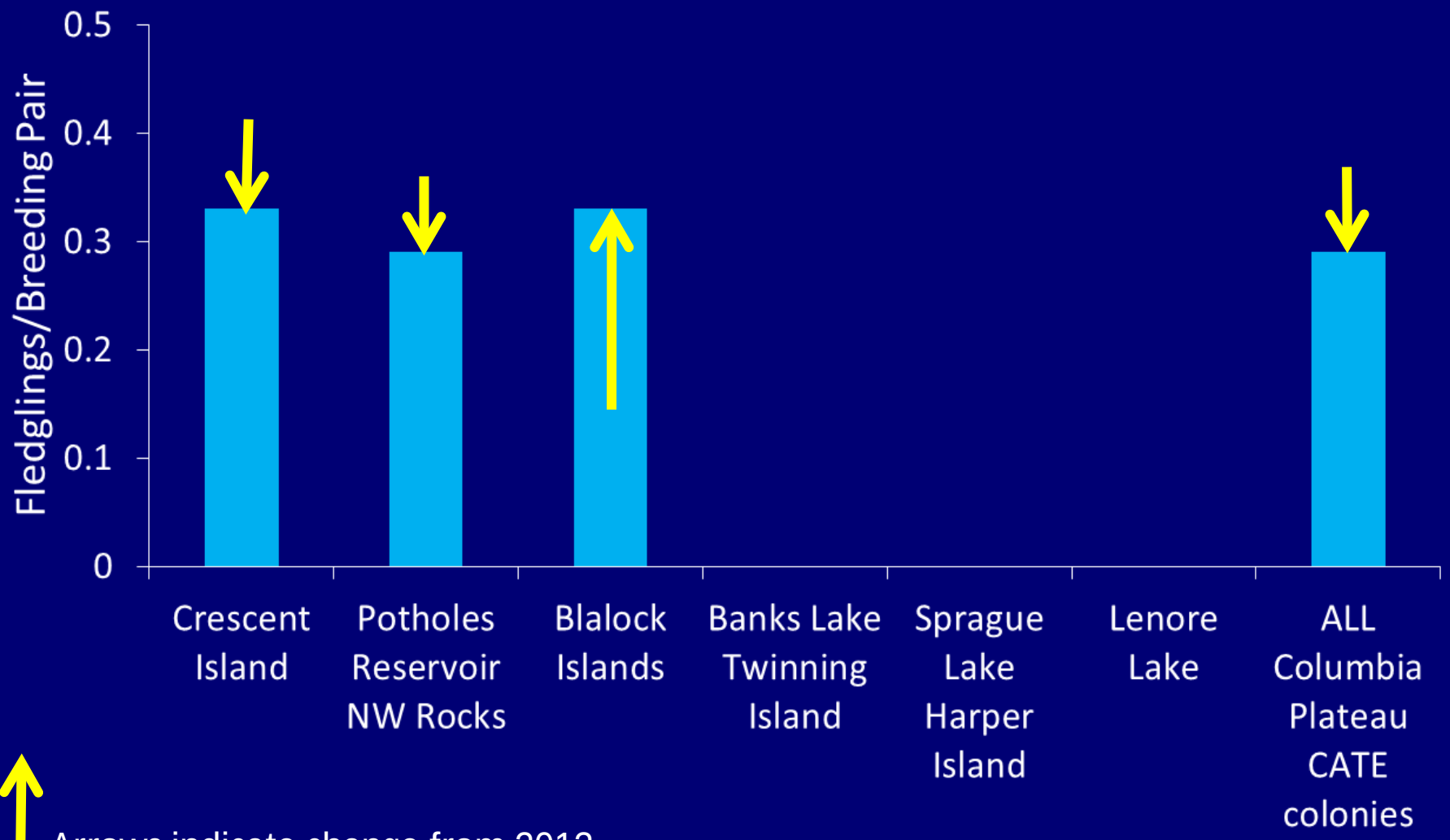
Corps-constructed Islands
2014 Results

Location	Size (acres)	Colony Size (breeding pairs)	Produced fledglings (limiting factor)
Malheur NWR, OR	1	134	Yes
Lower Klamath NWR, CA (Sheepy Lake)	0.8	520	Yes
Crump Lake, OR	1	1	No (no water)
Tule Lake NWR, CA	2	109	Yes
Summer Lake, OR (East Link)	0.5	22	Yes
Summer Lake, OR (Gold Dike)	0.5	0	No (mink, raccoon)
Lower Klamath NWR, CA (Orems Unit)	1	0	No (no water)
Fern Ridge, OR	1	0	No (unknown)
TOTAL	7.8	786 pairs	

East Sand Island Caspian Terns Nesting Success



Columbia Plateau Region
2014 Caspian Tern Productivity



Arrows indicate change from 2013