Brown Pelicans in Washington

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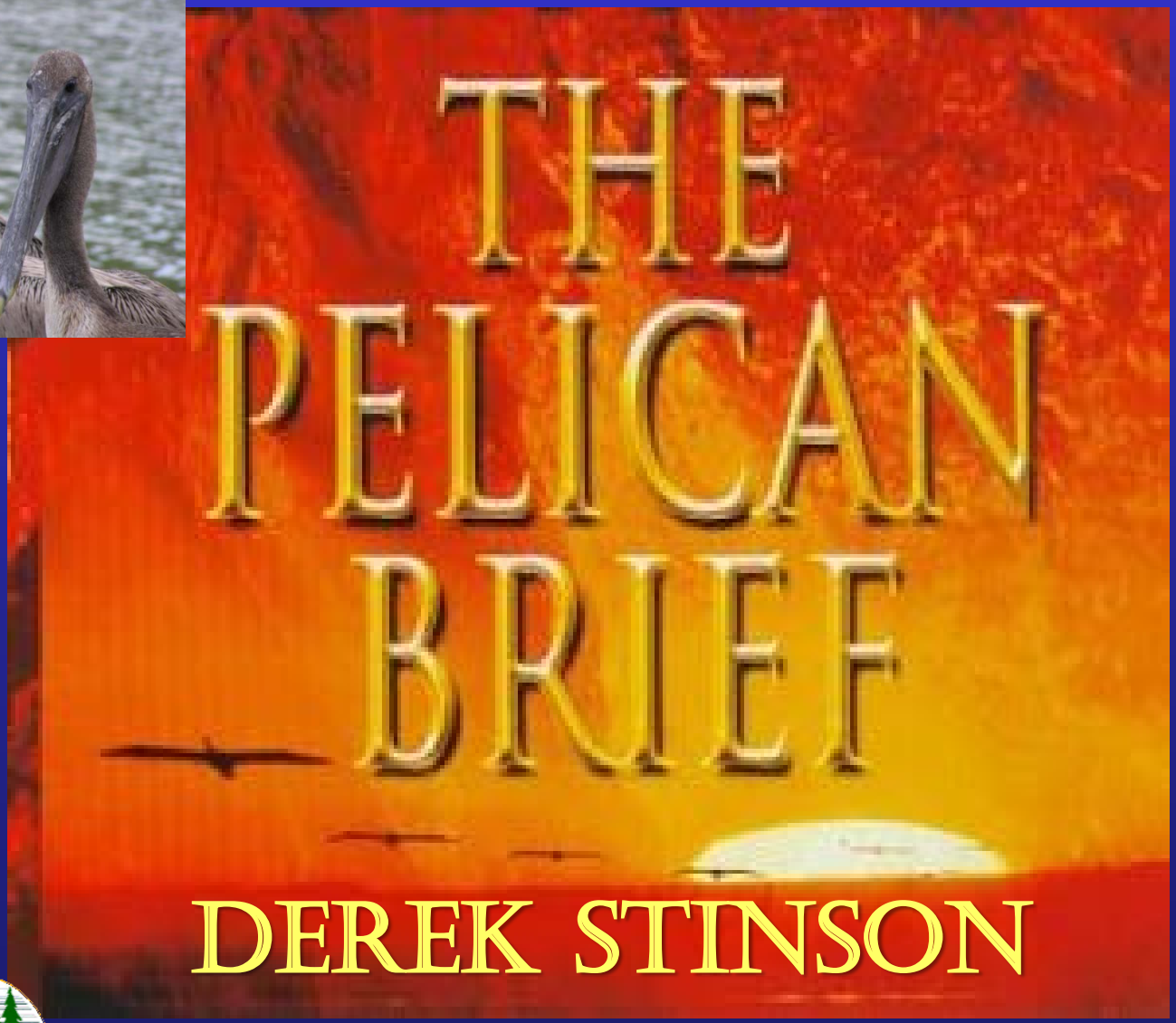


Washington Department of Fish and Wildlife

Overview

- Natural history
- Population status
  - Historical decline and recovery
  - Abundance in Washington
- Factors affecting populations
- Current situation
- Listing recommendation

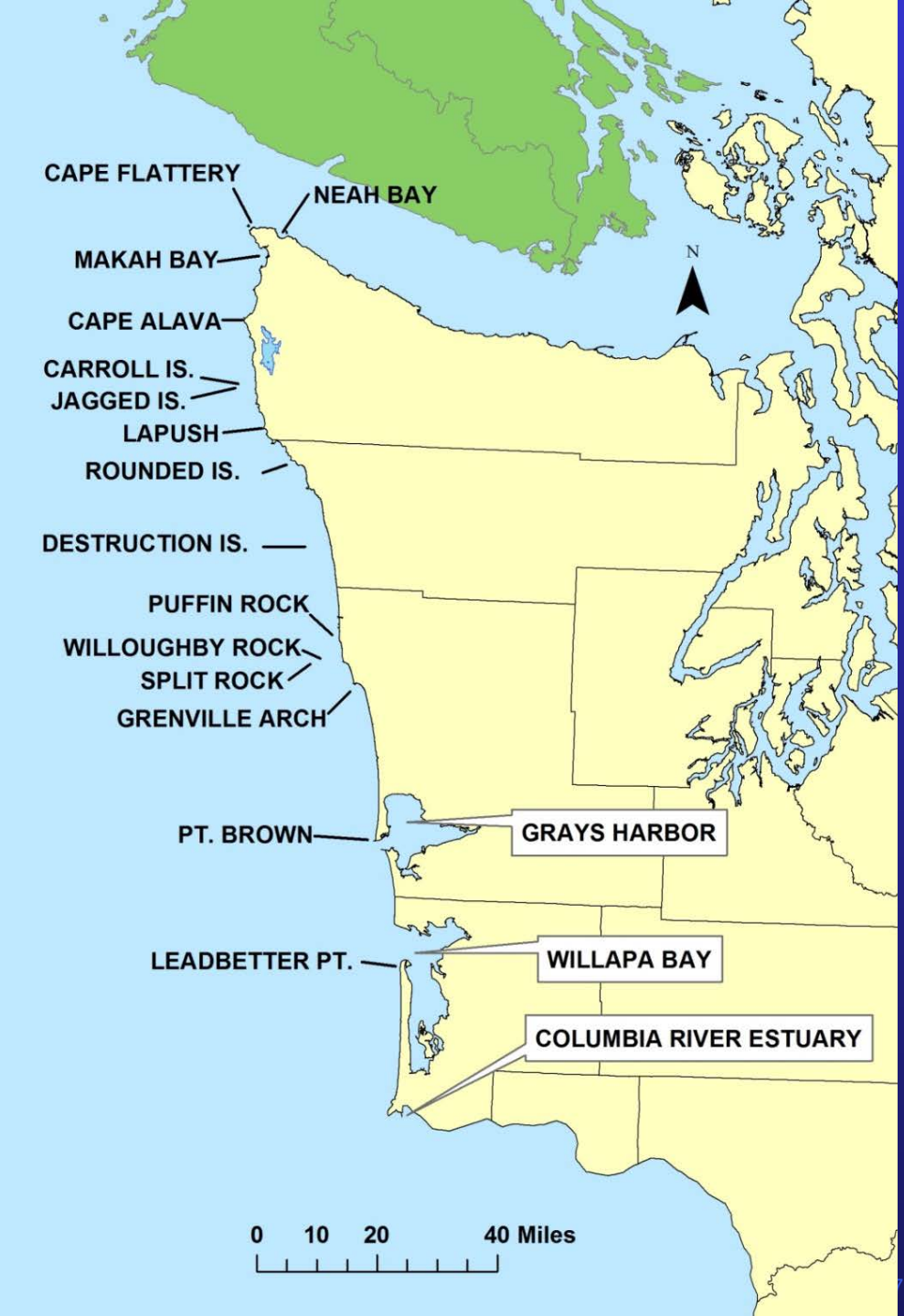
Natural History

- Large (4.4-11 lbs, 6 ½ ft. wingspan)
- Predominantly marine
- Long-lived (> 43 years)
- Colonial nesting--typically 3 eggs, incubate with their feet, often only 1st to hatch survives
- Feed on forage fishes, especially Pacific Sardines, Northern Anchovies, Pacific Mackerel

- Known for plunge diving while foraging (*see videos on Youtube*)
- Also known for roosting and loafing--on pilings, docks, etc.
  - Because feathers become wet, and need to be dried out

Pelecanus occidentalis californicus

- Nests in Channel Islands Nat. Park, along coast of Baja, on islands in Gulf of California
- After breeding they disperse north along Pacific coast
- Present seasonally in WA; small numbers reach southern BC



Brown Pelicans in WA

Roosts in:

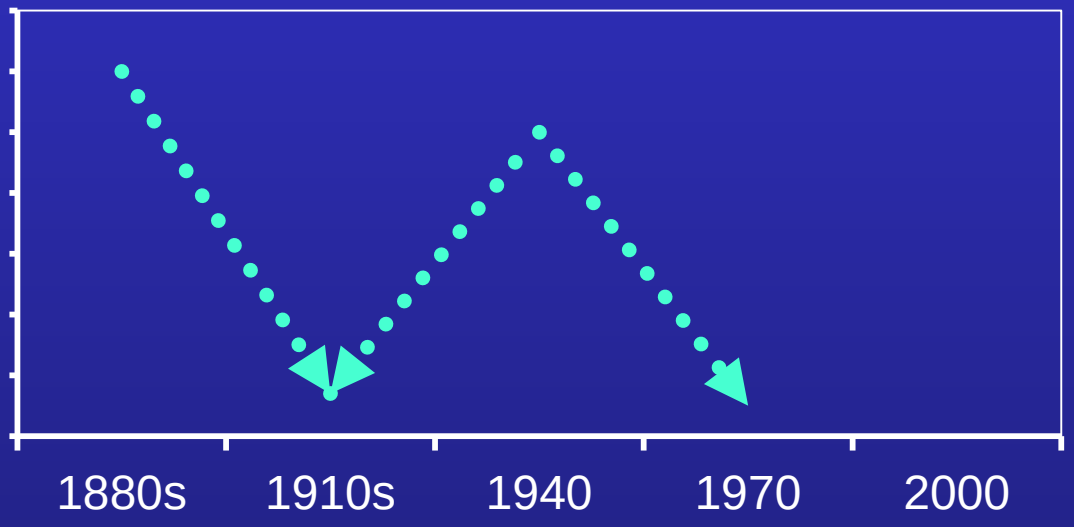
- Columbia estuary
- Willapa Bay
- Grays Harbor, and
- rocky islands, N to Cape Flattery

Examples (from eBird)

- 1,200 on Split Rock
- 800 on Destruction Island
- 2,700 on Carroll Island

Population Status

Brown Pelicans in Washington



Historically:

- 1930s-early 40s: increased
- After late 1940s, nonbreeding range retracted south
- By the 1960s, it was a “rare visitor” at Ocean Shores

- S. Cal. Bight down <1,000 pairs; production ~zero
- Listed as **Endangered** under the ESA in 1970
- State **Endangered** since 1980

Reasons for 20th Century Decline

- Feather fashion trade
- DDT: egg-shell thinning- reproductive failure

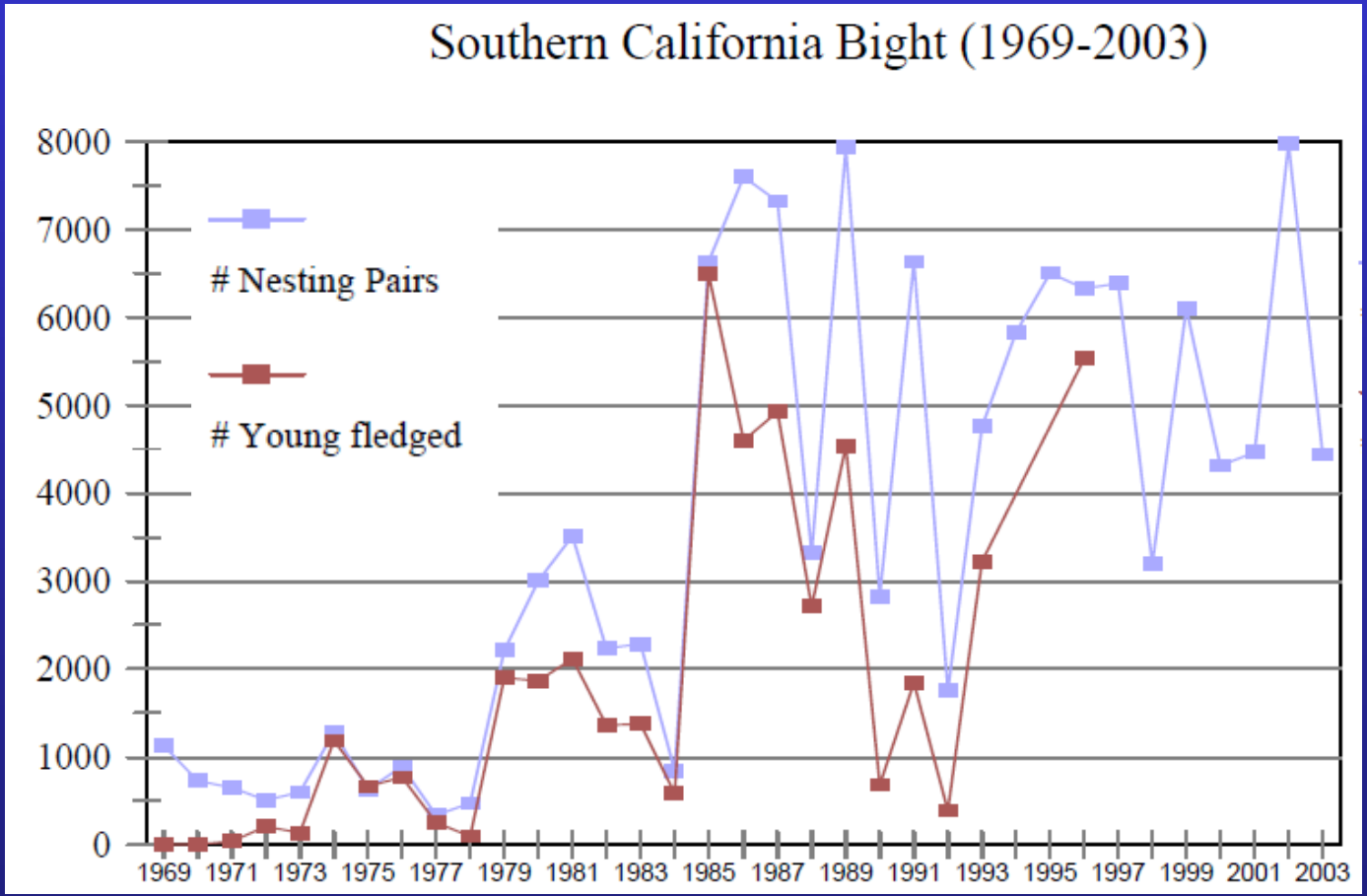




How Rachel Carson Helped Save The Brown Pelican

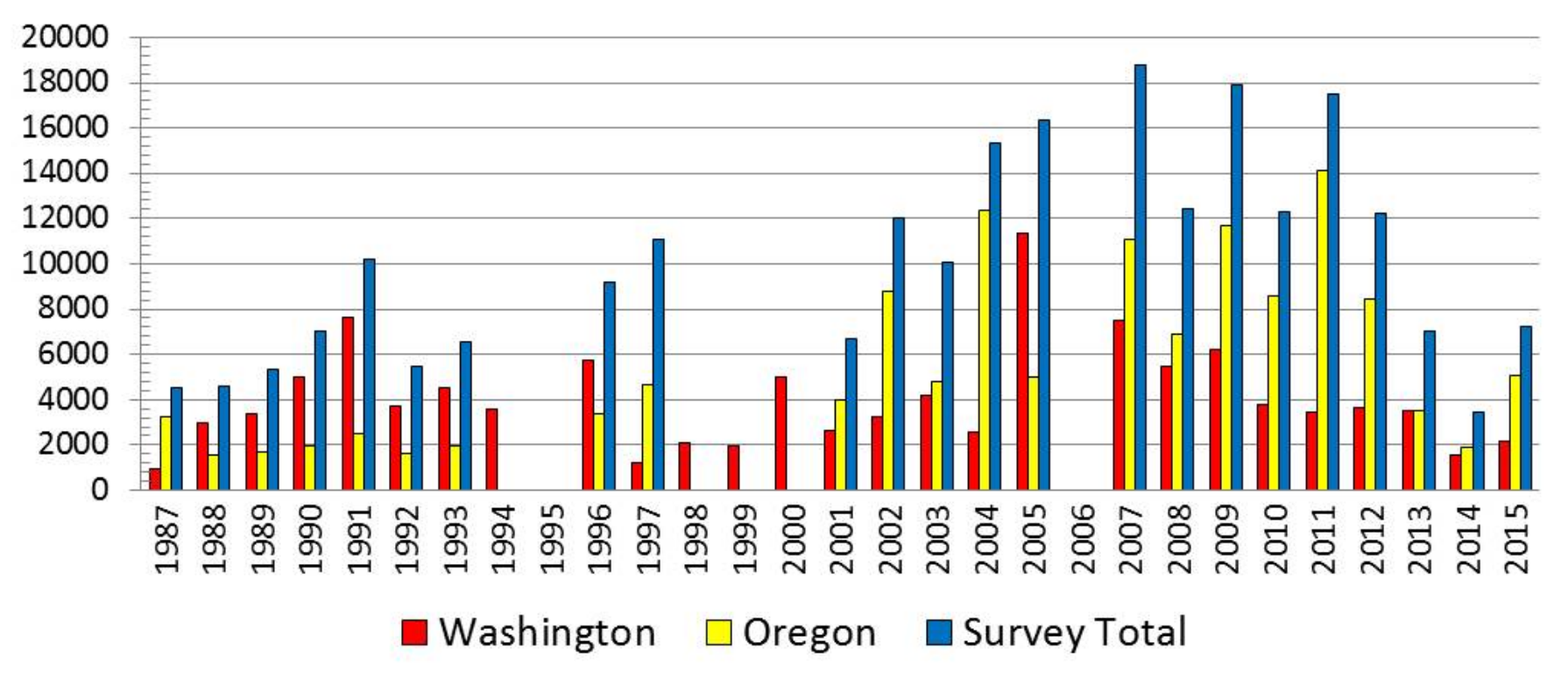
- 1970: California factory ceased discharge
- 1972: DDT banned, began recovering

Brown Pelicans on the Atlantic coast, Florida, and Alabama were delisted in 1985



- Federal recovery objective of ≥3,000 pairs
- 2009: FWS de-listed Pacific and Gulf Coast populations

- Began expanding N to Washington in late 1970s
- Annual influx of 1,000s began in 1985
- Today, substantial numbers seen late April-November

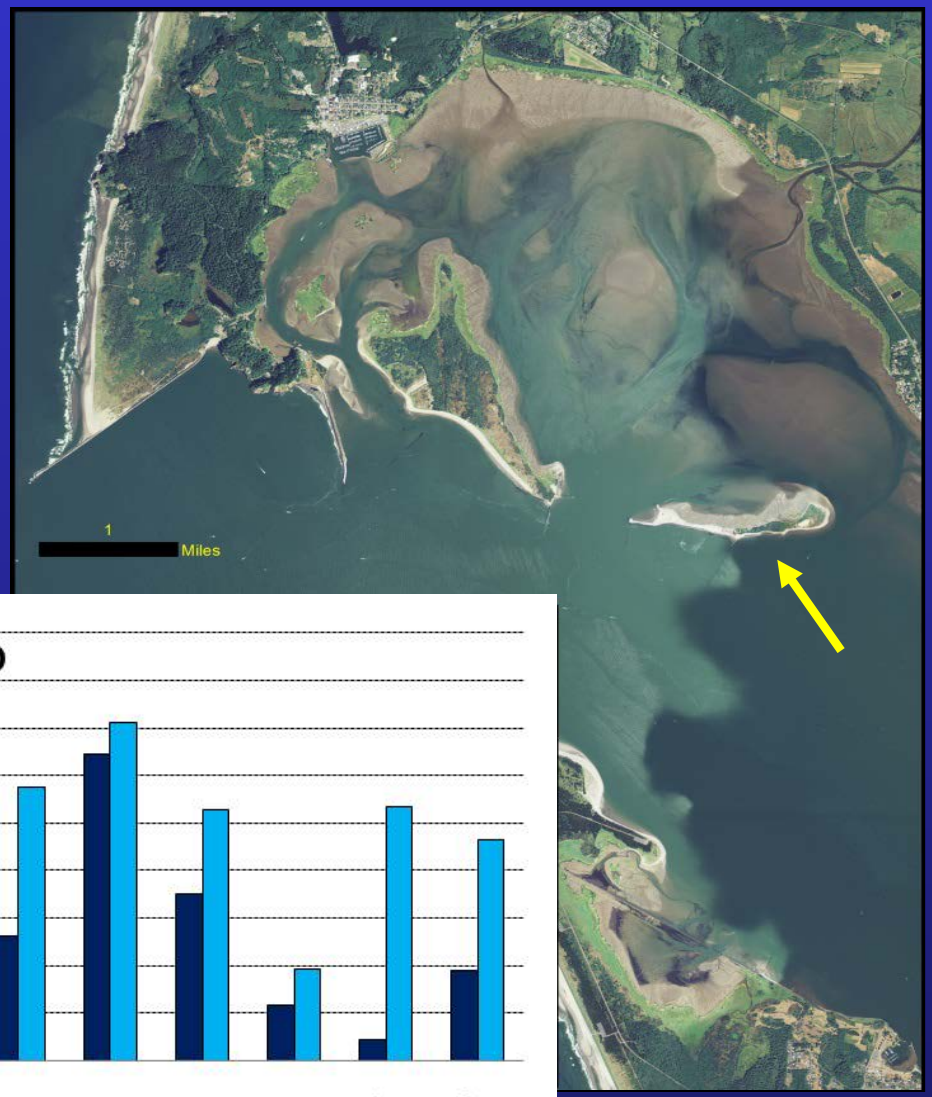


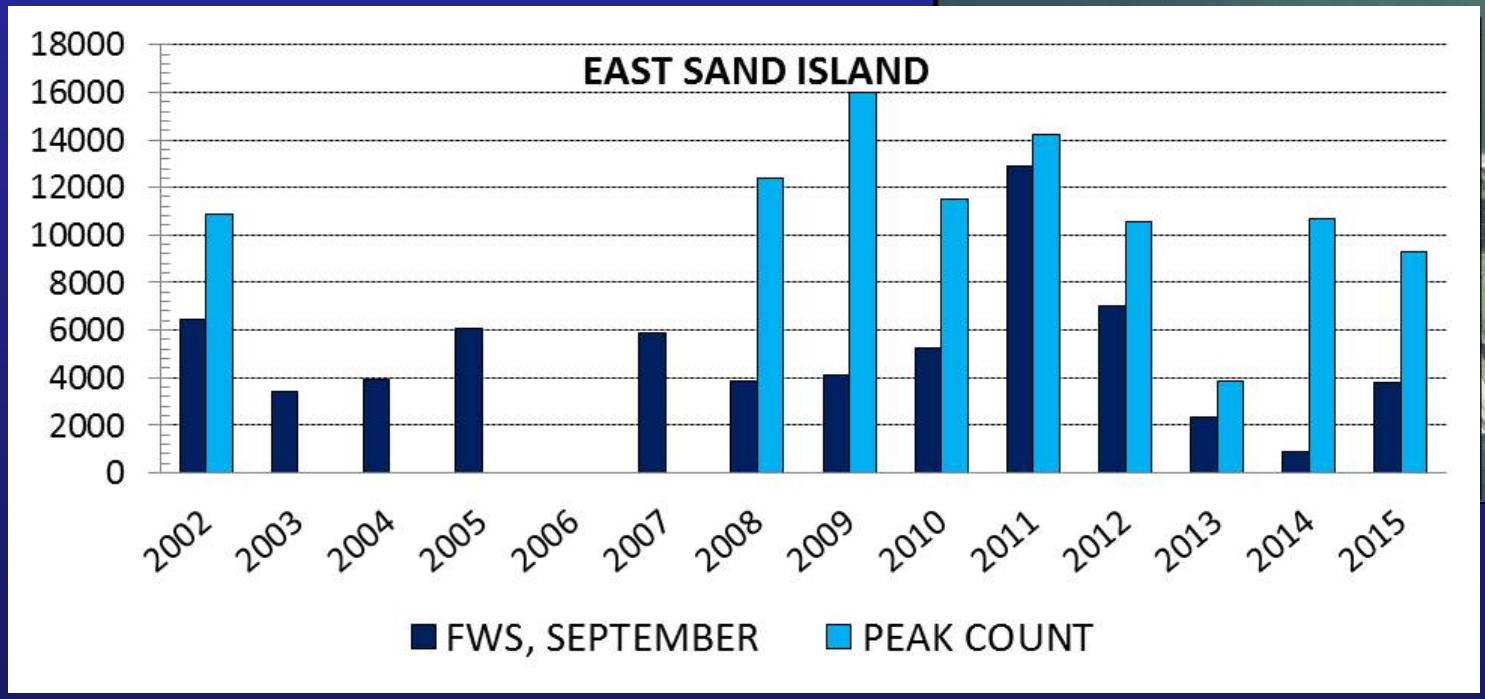
September Annual aerial coast survey (by USFWS)
Washington totals:

- 1987-91 increased from 922-7,613
- 2014: only 1,523 (June peaks: >10,000 2014, 9,290 in 2015)

East Sand Island (OR):

- Largest night roost in PNW
- 1979-1986: annual peak <100
- 2009: >16,000





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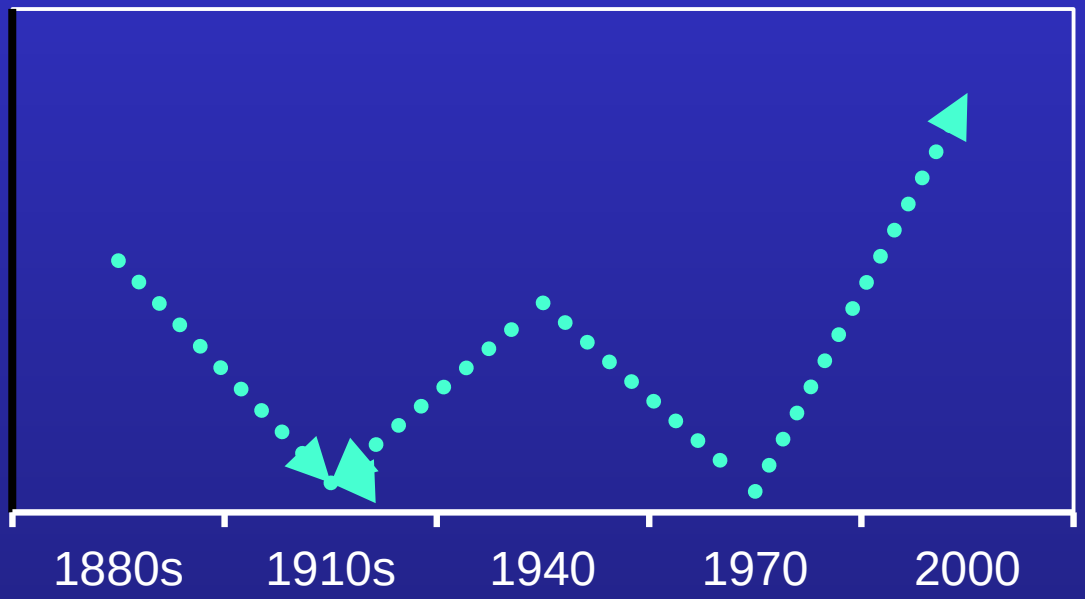


Rebound in WA due partly to DDT ban, but ...

- Historical retreat S began before DDT use common
- N expansion began before post-DDT increase

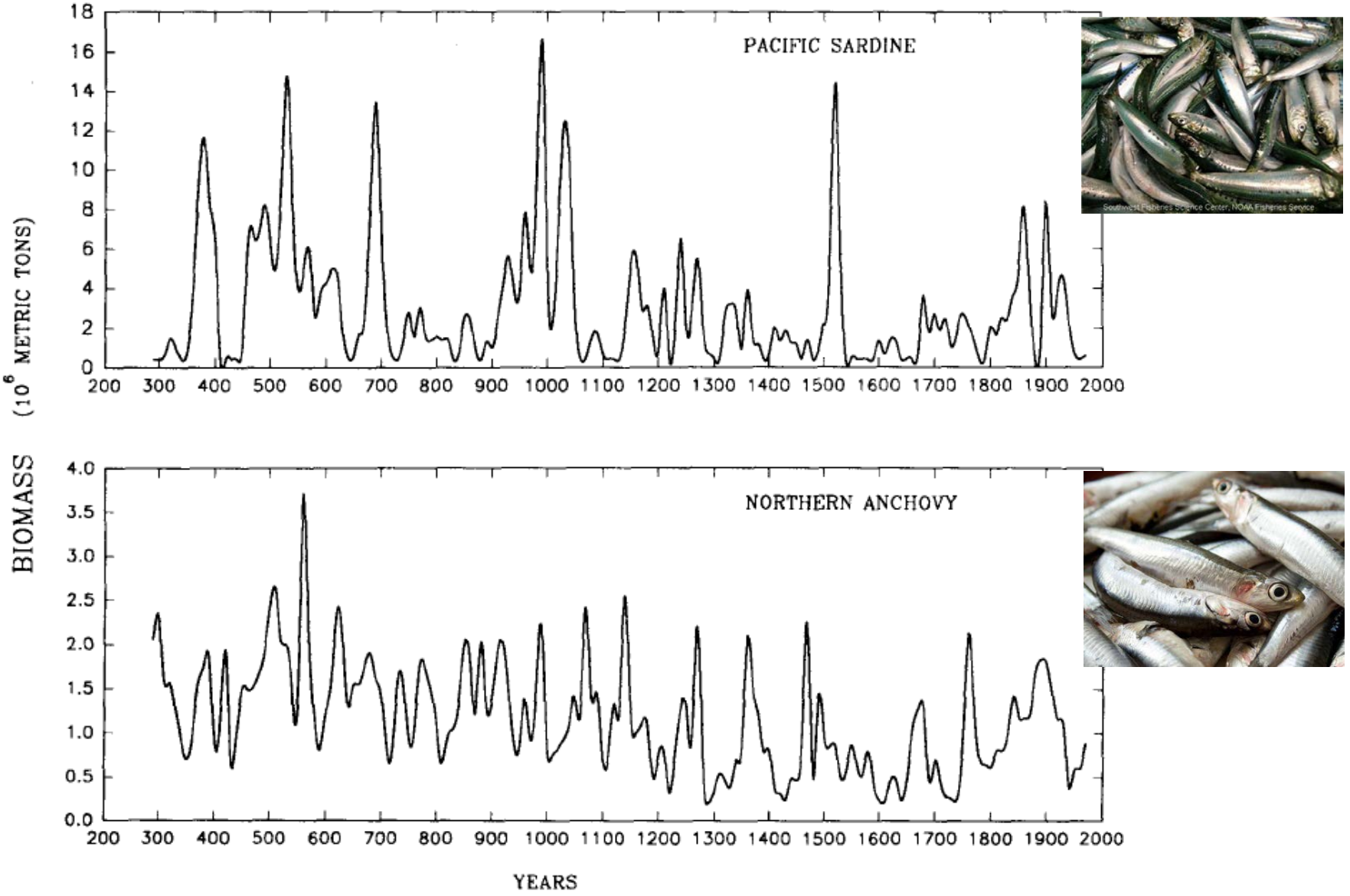
Other factors must be involved...

Factors Affecting Brown Pelicans

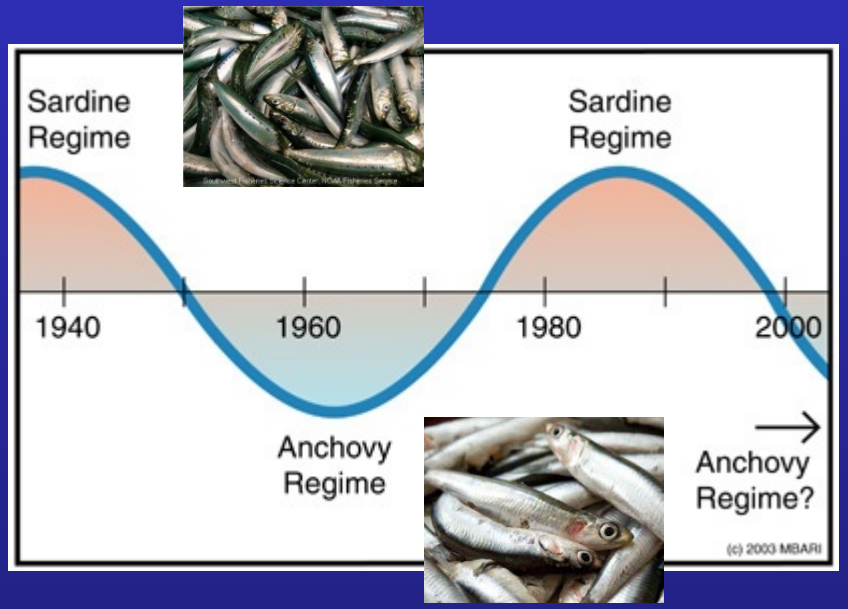
- California Brown Pelicans feed on sardines, anchovies, surf smelt, and mackerel.
  - Pacific Sardines supported the largest fishery in western hemisphere in the 1930s-40s

RECONSTRUCTION OF THE HISTORY OF PACIFIC SARDINE AND NORTHERN ANCHOVY POPULATIONS OVER THE PAST TWO MILLENNIA FROM SEDIMENTS OF THE SANTA BARBARA BASIN, CALIFORNIA

TIM R. BAUMGARTNER[1] ANDY SOUTAR VICENTE FERREIRA-BARTRINA



Forage fish abundance cycles in response to changes in ocean conditions (e.g. PDO)



- Anchovy and Sardine fluctuate out of phase
- Sardines up during warm regimes, anchovies up during cold

- Recently anchovies made modest comeback--- large fishery off of California and Mexico
- Washington: small fishery for bait off the Columbia, and small scale purse seine fishery out of Westport

Global Forage Fish Management

- Conventional management may not adequately account for wide population swings and high catchability (Pikitch et al. 2012, PEW Ocean Science 2013)

- Seabirds-reduced productivity when forage fish abundance drops below 1/3 of the maximum observed biomass (Cury et al. 2011)

Pacific Fishery Management Council (PFMC)

- Uses a conservative approach to forage fish harvest
- Annual harvest does not exceed 12% of the est. biomass
- PFMC recently criticized for delay in sardine closure (2015)
- WDFW in regional effort by PFMC to re-evaluate forage fish mgmt.

USFWS (2009) concluded current levels of fishing not likely to endanger the Brown Pelican.

- 1976: warm water regime began
- 1992: sardines reappeared in BC waters, after 45 yr absence
- 2010: return of cooler regime; decline in sardine, herring, and whitebait smelt (sardines declined ~90% since 2007)

Sudden disappearance of sardines has serious economic and ecological effects on the B.C. coast

BY LARRY PYNN, VANCOUVER SUN OCTOBER 14, 2013

THE SPOKESMAN-REVIEW November 29, 2013

Brown pelican may be feeling impact of sardine crash

West Coast sardine collapse leads to July fishing closure

Originally published April 13, 2015 at 5:58 pm

- 2013: fewer pelicans in PNW (large numbers feeding on anchovies in Monterey Bay, CA)
- Winter of 2013/2014, return to a warm regime
  sardines may rebound

Recent Productivity at Breeding Colonies

Channel Islands and Gulf of California

Decline in reproduction, near-total failure in 2012-2015

- 2015: El Nino (historically poor reproduction, WA sees influx of pelicans that forego breeding)

Other factors that affect Brown Pelicans

- Oil spills
- Harmful algae blooms
  - Pseudonitzchia sp.- domoic acid toxin
  - Akashio sanguinea- surfactant-like, fouls plumage
- Disturbance of roosts
- Pesticides
- Entanglement with fishing gear

But none are a major threat to the species in Washington

Review

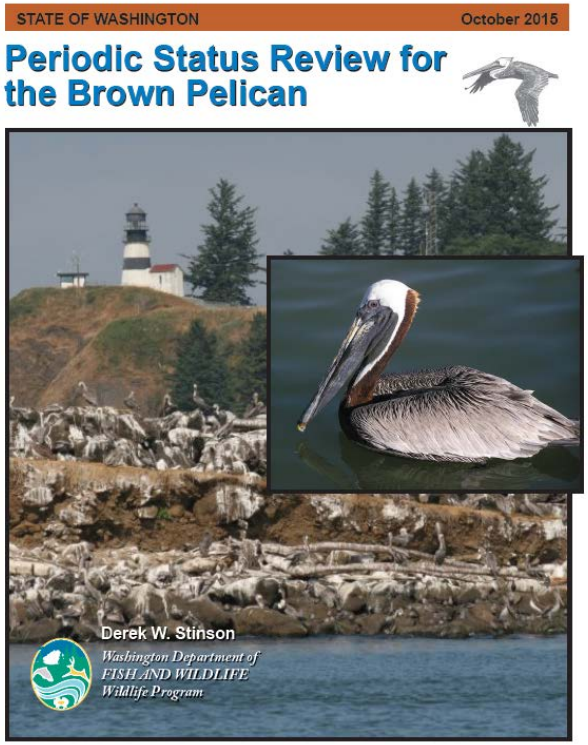
- 1985-2009, Brown Pelicans increased markedly in Washington due to:
  - Abundance of forage fish
  - Post-DDT recovery
- But recent pelican breeding failures due to sardine collapse, and climate change create some uncertainty about future
- Pelican numbers vary with forage fish abundance and ocean conditions
- Fluctuations in ocean conditions can't be manipulated by management (but forage fish can)

Recommendation

We recommend de-listing the Brown Pelican in Washington

- It would remain 'protected wildlife' under state law (RCW 77.15.130)
- It would remain a Priority Habitat Species due to 'vulnerable aggregations'
- Protected by the federal Migratory Bird Treaty Act

If delisted, a review will be performed again in 5 years, which would consider any dramatic changes in status



Public Comments

4 public comments:

- 2 supported de-listing
- 1 opposed de-listing
- 1 recounted enjoying watching the species' annual appearance

Questions?

Acknowledgements

Photos by many known and unknown, but including:

- Joe Higbee
- Deb Jaques
- Derek Stinson

Data from:

- Shawn Stephensen, Oregon Coast NWR complex
- Dan Anderson, U. Calif-Davis
- eBird

Defined in WAC 232-12-297

- **Endangered** : “seriously threatened with extinction throughout all or a significant portion of its range within the state”.
- **Threatened**: “likely to become an endangered species within the foreseeable future throughout a significant portion of its range within the state without cooperative management or removal of threats.”
- **Sensitive**: “vulnerable or declining and is likely to become endangered or threatened in a significant portion of its range within the state without cooperative management or removal of threats.”