

Piscivorous Waterbirds in Washington

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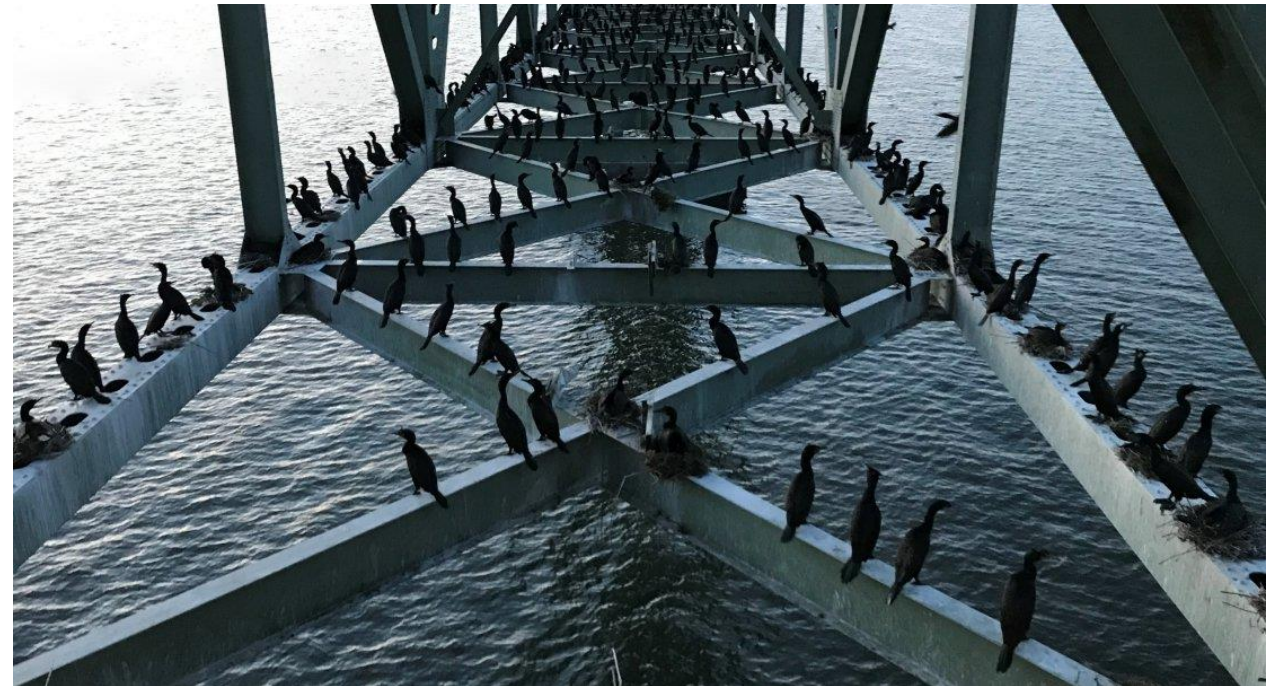


Species	Statewide trend	Time present	Peak (% pop)	Waters inhabited	Diet	Conservation Status
Pelagic Cormorant	-5.49	breeding	2.45%	marine	Fish only	None
Double-crested cormorant	-5.42	Year-round	1.67%	both	Fish only	None
Brandt's Cormorant	unk.	Year-round	unk.	marine	Fish only	None

Pelagic Cormorant



Double-crested Cormorant



Species	Statewide trend	Time present	Peak (% pop)	Waters inhabited	Diet	Conservation Status
American White Pelican	+8.3%	breeding	1.2%	Freshwater, estuarine	Fish (variety)	State sensitive
Brown Pelican	-38%	Post-breeding	2.3%	Marine- outer coast only	Marine fish	None

American White Pelican



Brown Pelican



Species	Statewide trend	Time present	Peak (% pop)	Waters inhabited	Piscivory	Conservation Status
Common Loon	-13.7%	Year-round	2.9%	lakes, marine	primarily	State sensitive, SGCN
Pacific Loon	unk.	non-breeding	10.99%	marine	primarily	none
Red-throated loon	unk.	Winter	8.7%	marine	All fish	none

Common Loon



Credit: USFWS

Pacific Loon

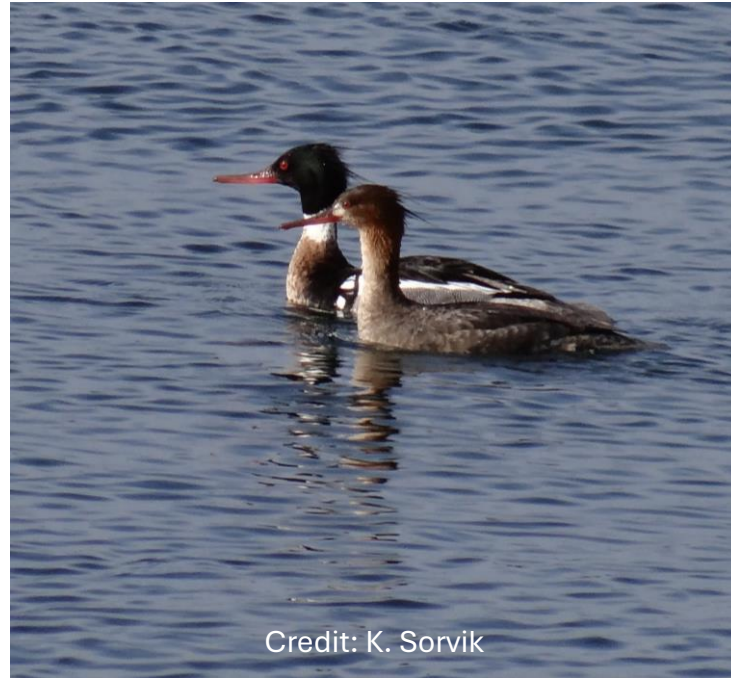


Species	Statewide trend	Time present	Peak (% pop)	Waters inhabited	Diet	Conservation Status
Common Merganser	-1.76	Year-round	1.4%	Freshwater- larger rivers, lakes	“primarily” fish	None
Red-breasted merganser	-0.68*	winter	2.4%	marine	majority fish	None
Hooded merganser	-5.76	Year-round	3.75%	freshwater	44% fish	none

Common Merganser



Red-breasted Merganser



Hooded Merganser



Species	Statewide trend	Time present	Peak (% pop)	Waters inhabited	Diet	Conservation Status
Western grebe	-11%	Year-round	17.55%	both	80-100% fish	SGCN
Clark's grebe	unk.	Year-round	0.84%	both	unknown	SGCN
Red-necked grebe	+17.3%	winter	13.88%	both	~55% fish	SGCN
Horned grebe	-28.6%	winter	15.22%	marine	Fish, inverts	none
Pied-billed grebe	-2.46%	Year-round	2.15%	freshwater	generalist	none

Clark's Grebe



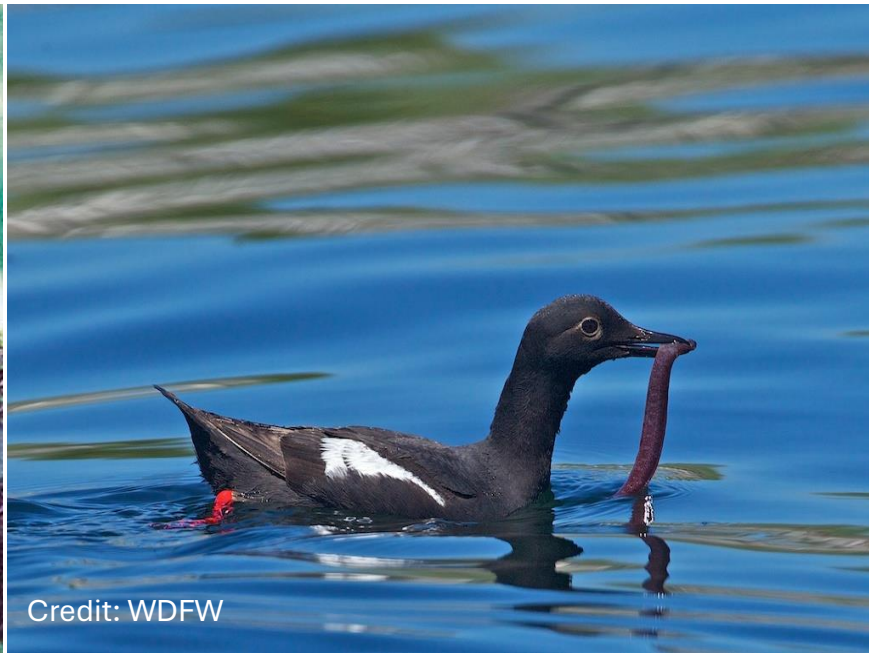
Horned Grebe



Species	Statewide trend	Time of year present	Peak (% pop)	Waters inhabited	Diet	Conservation Status
Common murre	unk.	Year-round	unk.	Marine	Fish, inverts	None
Rhinoceros auklet	unk.	Year-round	unk.	Marine	Fish, inverts	None
Pigeon guillemot	-3.16%	Year-round	59.4%	Marine	Fish, inverts	None
Marbled murrelet	-23.7%	Year-round	1.2%	Marine/occasionally freshwater	fish	Federally threatened, state endangered, SGCN



Credit: NPS



Credit: WDFW



Credit: WDFW

Species	Statewide trend	Time of year present	Peak (% pop)	Waters inhabited	Diet	Conservation Status
Caspian Tern	+6.6%	breeding	15.93%	Both	Fish	None
Forster's Tern	+2.37%	breeding	0.89%	Freshwater	Fish	None
California Gull	-21.3%	Year-round	12.36%	Both	generalist	None
Ring-billed Gull	-17.5%	Year-round	1.08%	Freshwater	generalist	None
Western Gull	-22.8%	Year-round	2.26%	Marine (outer coast)	generalist	None
"Olympic" Gull	-33.4%	Year-round	3.85%	Marine (sound)	generalist	None

Caspian Tern and Ring-billed Gull



Credit: C. Cox

Species	Statewide trend	Time of year present	Peak (% pop)	Waters inhabited	Diet	Conservation Status
Belted Kingfisher	-18%	breeding	1.7%	both	Mostly fish	None
Osprey	+0.16%	breeding	5.16%	both	Fish	None
Great Blue Heron	-4.1%	breeding	1.4%	freshwater	generalist	None
Black-crowned Night Heron	-26.2%	Year-round	.02%	freshwater	generalist	None
Great Egret	-12.3%	Year-round	.01%	freshwater	generalist	None

Great Blue Heron



Osprey



Great Egret





Caspian Terns

Photo: Caspian Tern, Cameron Cox

Caspian Tern Ecology

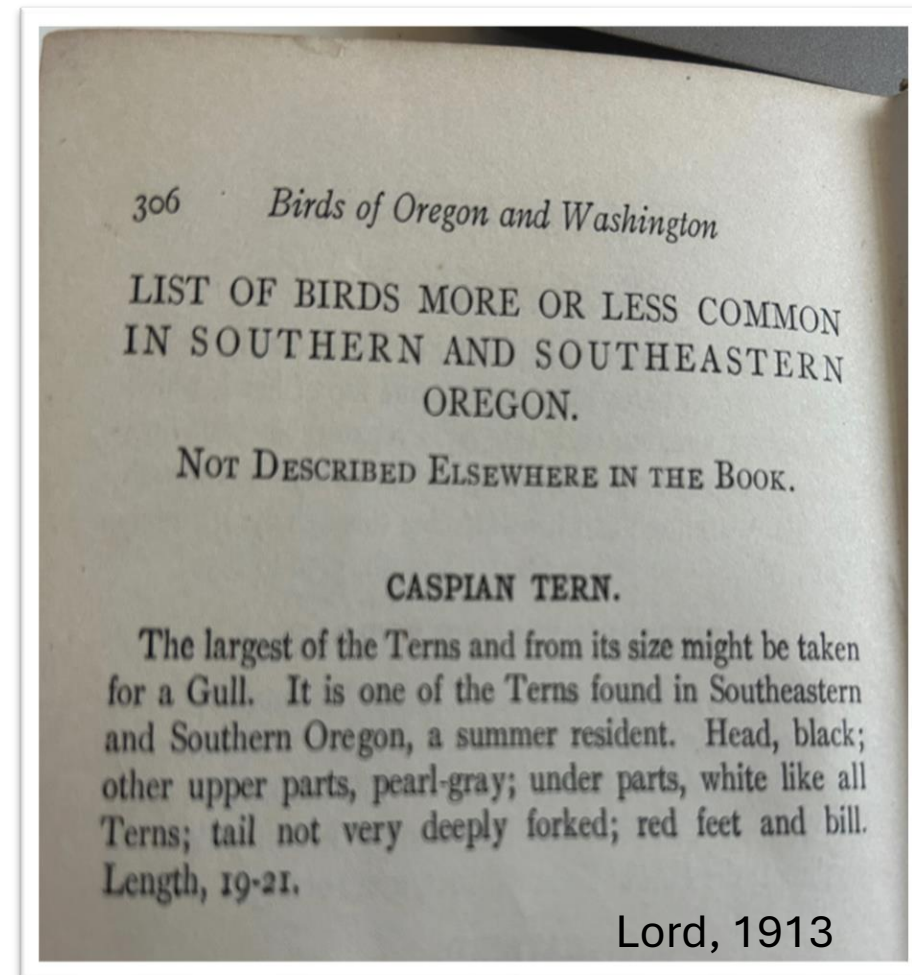
- Long-lived
- Nest in colonies
- Lay 1-3 eggs/year directly in the sand
- Require open sandy or rocky habitat
- Predator-free islands



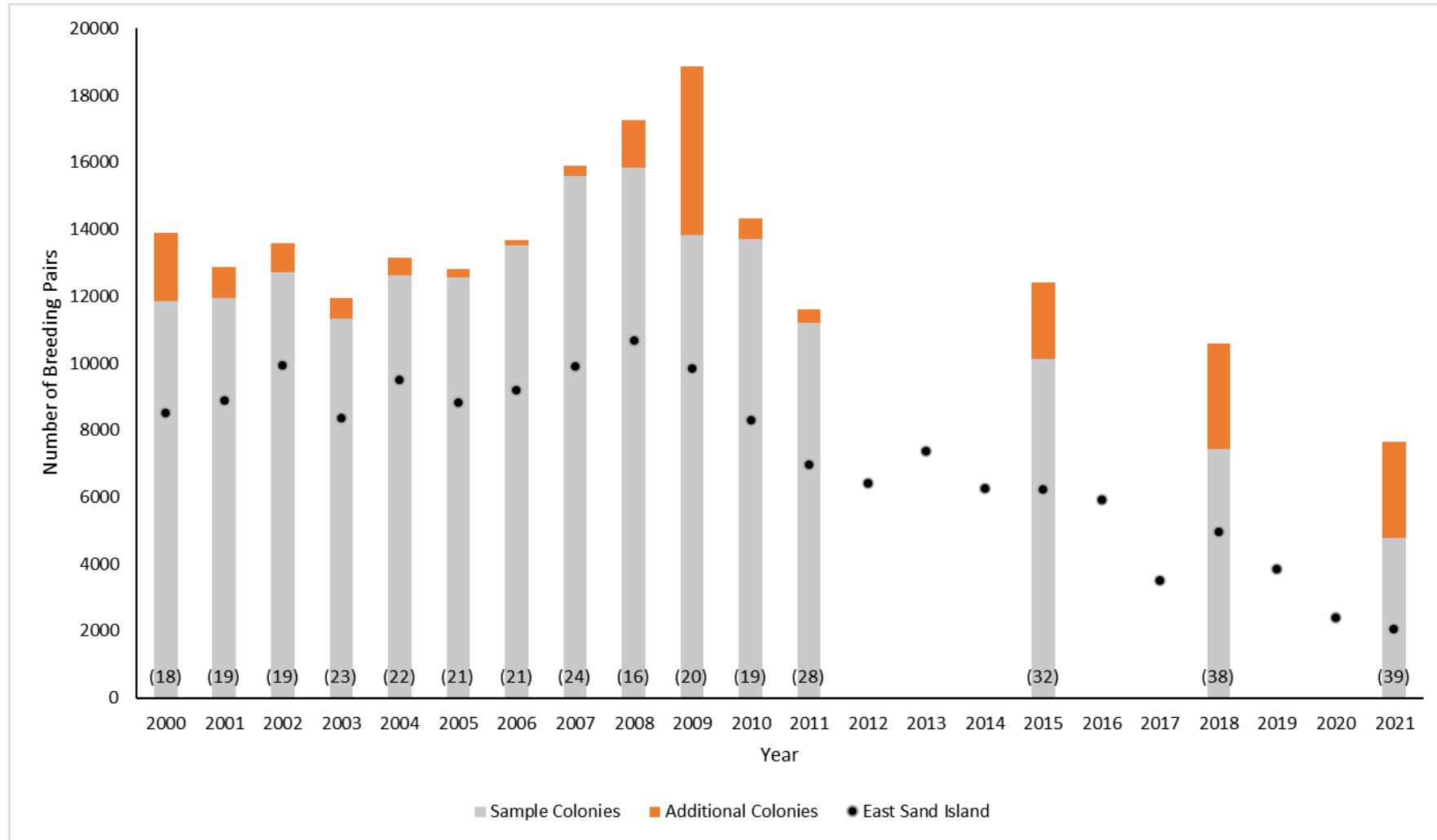
Caspian Tern Egg Allison Anholt, WDFW

Pacific Flyway population

- 1960-1980- 70% increase in Pacific Flyway population
- In mid-2000s, the Columbia River hosted the largest tern colony in the world at East Sand Island (12,000 breeding pairs)
- Habitat shifts from inland → coastal → river
- Numbers declining south and inland, range shift to Alaska in recent years



Pacific Flyway Population



From: Lawes et. al 2021

Why the Columbia?

- Dredge spoil Islands
- Fish
- Decrease in water further south and inland
- Displacement from coastal islands
- Eagles



Studies on the Columbia

- Banding studies
- Colony displacement
- Decoys
- Predation studies
- Population Studies

- OSU, Real Time Research, Bird Research Northwest

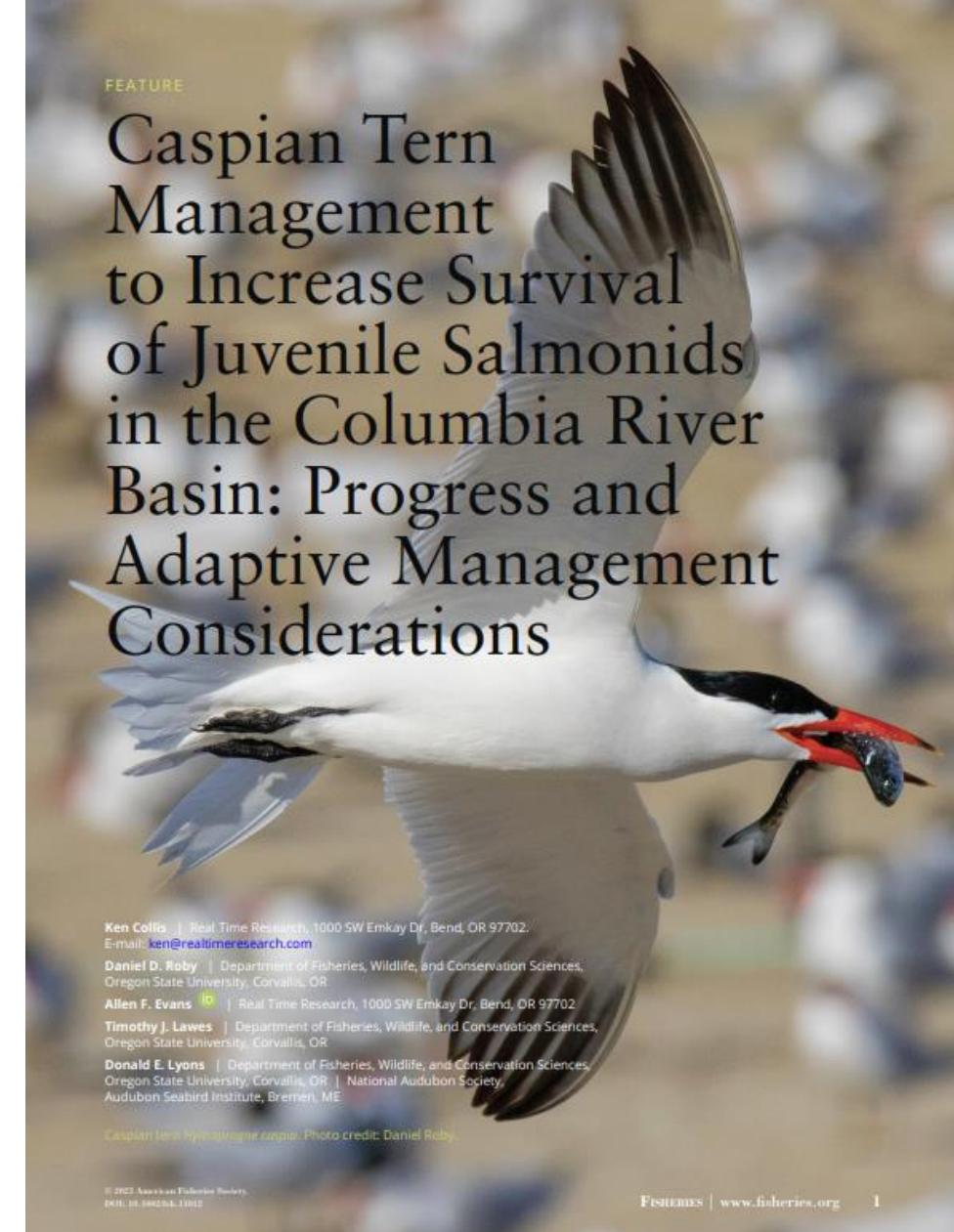


Caspian terns (*Hydroprogne caspia*) with field readable, alphanumeric and color bands

Photo: Oregon State University

Studies on the Columbia: Result

- Caspian Tern Management Plan (2007), assessment 2023
- Inland Avian Predation Management Plan
- Caspian Tern Pacific Flyway Populations have declined by 50% since plans enacted



Avian Influenza- 2023

Table by Scott Pearson, WDFW

Estimated Flyway-level
Caspian Tern HPAI mortality (May – Sept 2023)

Mortality	Adults	Chicks
Washington	1,179	525
Oregon	350	
Total	1,529	
Population Estimate		
2021 flyway census pop est ¹	15,316	
2021 flyway posteriori pop est ¹	10,862	
Proportion lost		
Flyway	10 – 14%	

¹ Lawes et al. 2022. Final Annual Report: 2021 Pacific Flyway Caspian Tern Population Monitoring.
Department of Fisheries, Wildlife, and Conservation Sciences, Oregon State University, Corvallis, Oregon US

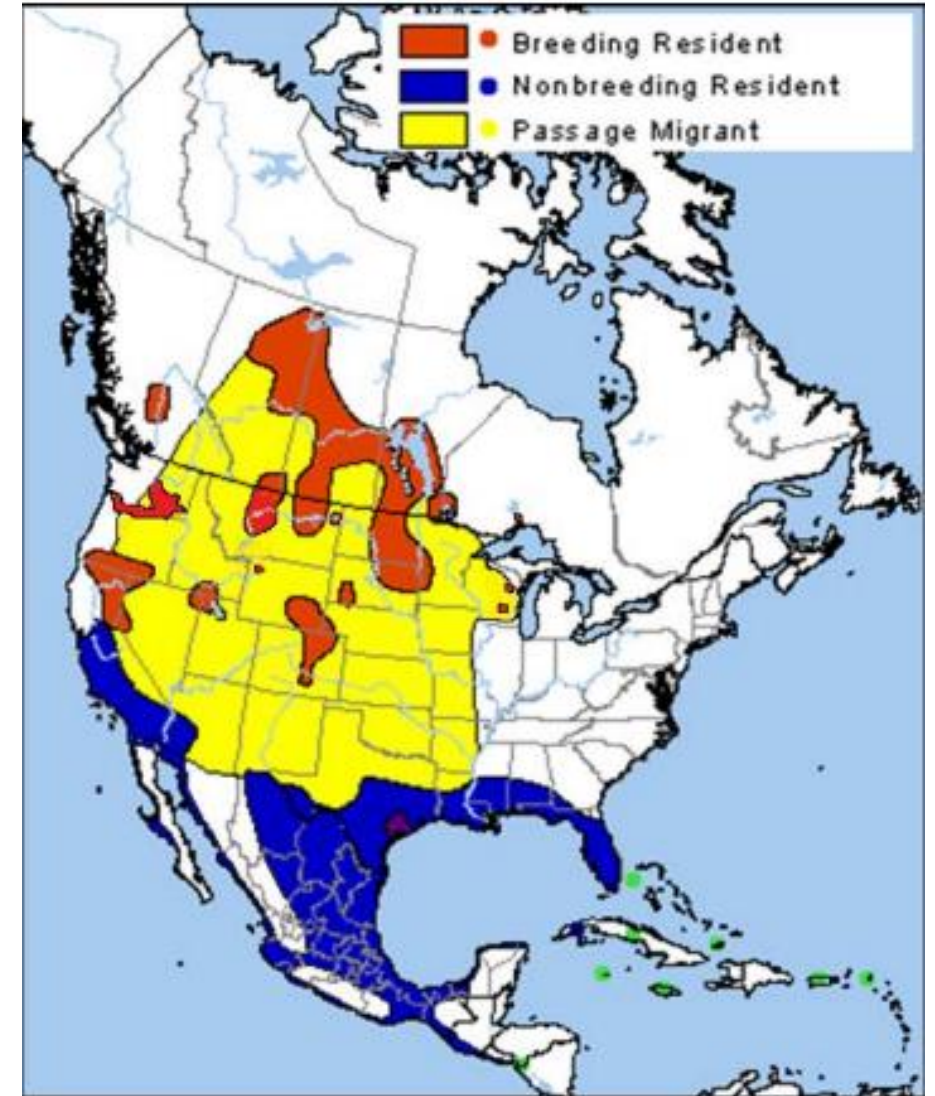
American White Pelicans



Photo: White Pelican, Anthony Maestas

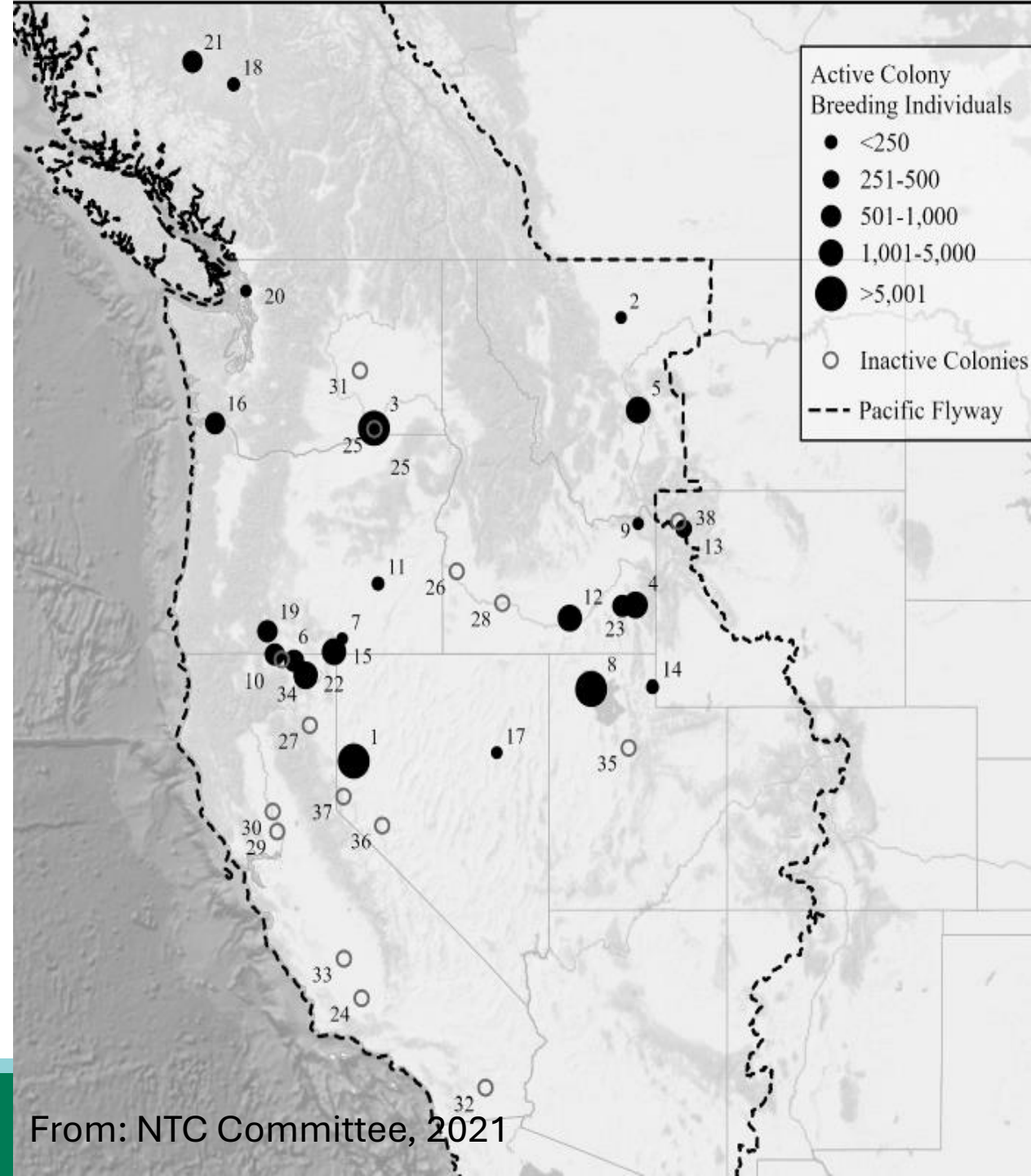
White Pelican Ecology

- Long-lived
- Nest in colonies
- Lay 2 eggs/year
- Predator-free islands on freshwater rivers, lakes, reservoirs
- Winter estuarine habitats
- Forage in shallows



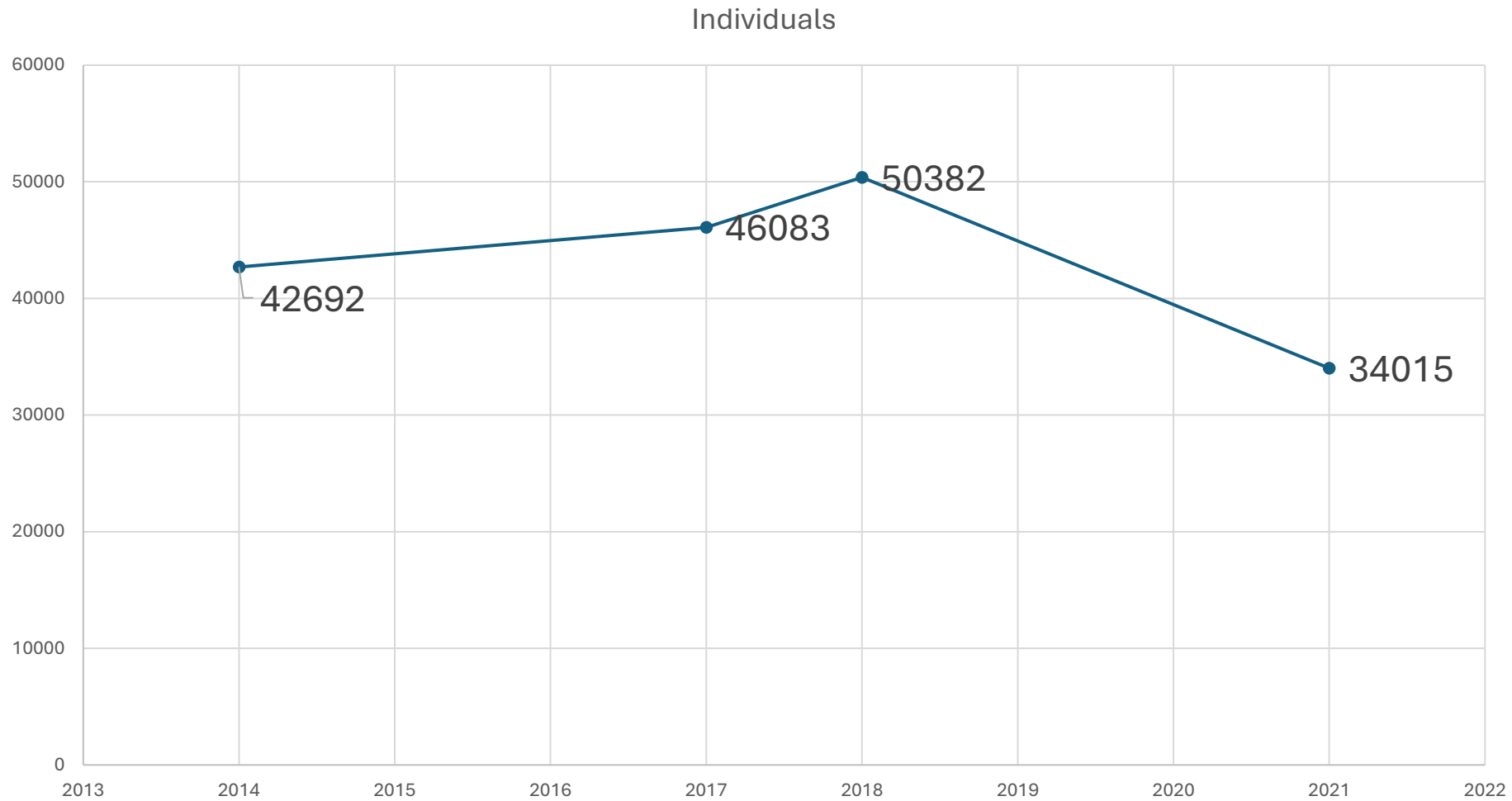
Pacific Flyway population

- Late 19th c: ~60,000 pairs, 24 colonies
- 1970s- 16,000 pairs, 5-8 colonies
- 2021 estimate: 34,015 individuals
- MOTUS studies, productivity monitoring



From: NTC Committee, 2021

Pacific Flyway population



Washington population

- Downlisted from Endangered to Sensitive in 2022
- Recorded on Columbia by Lewis and Clark in 1805
- Historically bred in E. WA, none past 1940 until 1994
- ~2 colonies
 - Badger Island: 3,624 individuals
 - Padilla Bay: 36 in 2017
- Diet Study- Yakama
- No productivity studies





Photo: Double-crested Cormorant, Real Time Research

Double-crested Cormorants

Double-Crested Cormorant Ecology

- Long-lived
- Nest in colonies
- Flexible: manmade, trees, ground, rocks
- Freshwater, saltwater, estuarine
- Year-round
- Dive and swim for fish



Photo: Bird Alliance of Oregon

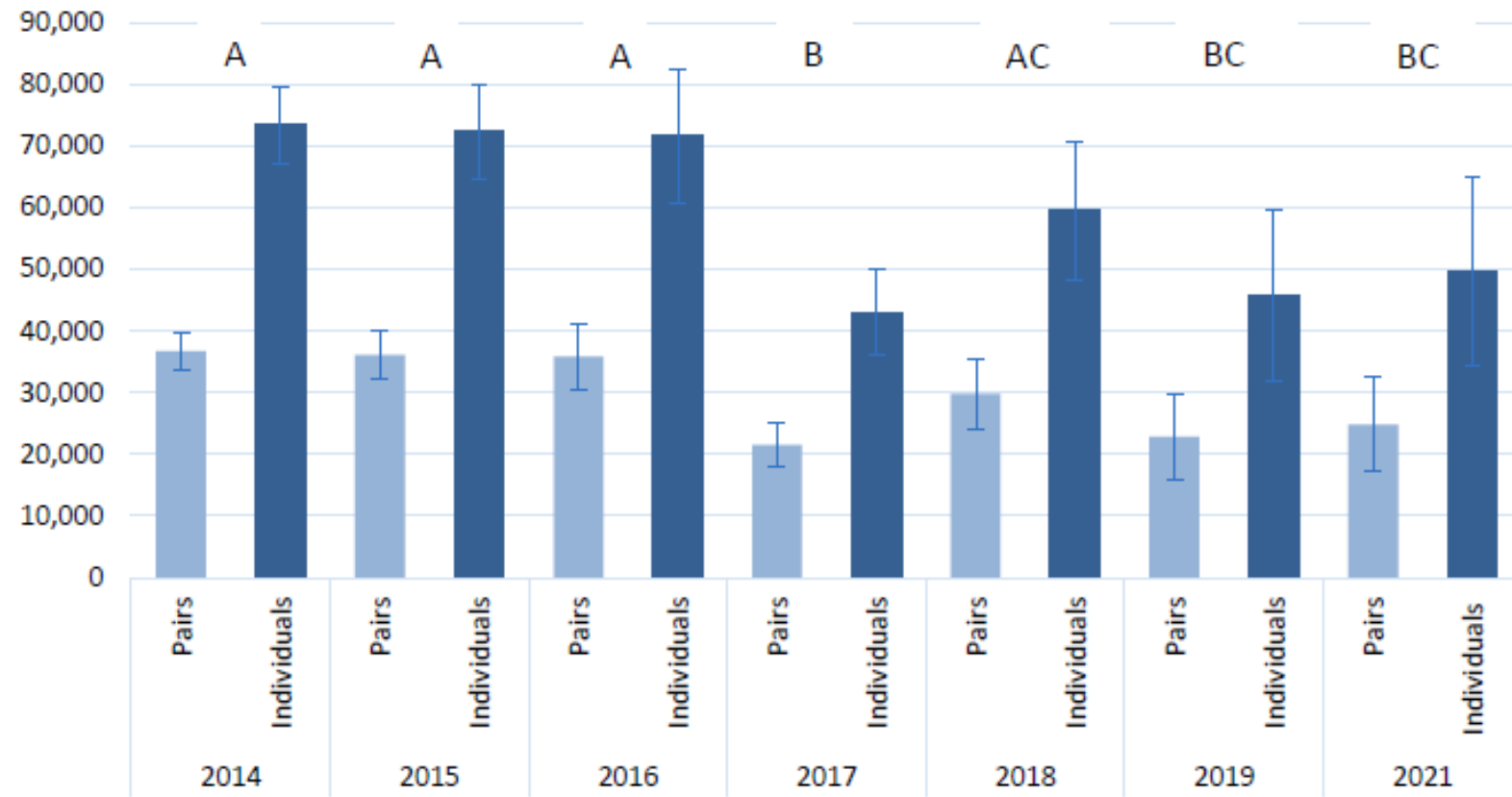
Pacific Flyway population

- Historic to region
- Major population declines due to DDT
- East Sand Island (OR) hosted largest colony in the world. 2014: 13,626 breeding pairs
- Currently: Astoria-Megler Bridge (WA/OR) hosted largest colony in 2021 (4,151 breeding pairs)



Pacific Flyway population

**DOUBLE-CRESTED CORMORANT WESTERN
POPULATION ESTIMATES**



		Population estimate
2014	Pairs	36,719
	Individuals	73,437
2015	Pairs	36,152
	Individuals	72,304
2016	Pairs	35,792
	Individuals	71,585
2017 ^a	Pairs	21,537
	Individuals	43,074
2018	Pairs	29,785
	Individuals	59,571
2019 ^b	Pairs	22,889
	Individuals	45,778
2021 ^b	Pairs	24,849
	Individuals	49,698

Washington population

- No conservation status
- Historically in Washington in all water habitats
- 93 known colonies in WA (historic or current)
- Population assessment 2024



Studies on the Columbia

- Banding studies
- Colony displacement
- Decoys
- Predation studies
- Double-crested Cormorant Management Plan (2015)

Double-crested Cormorant Management Plan to Reduce Predation of Juvenile Salmonids in the Columbia River Estuary

Final Environmental Impact Statement





Questions?



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