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## **CHAPTER 2: CASPIAN TERN MANAGEMENT IN THE COLUMBIA PLATEAU REGION**

Conclusions and considerations

# CONCLUSIONS

CHAPTER 2: Caspian tern management in the CPR

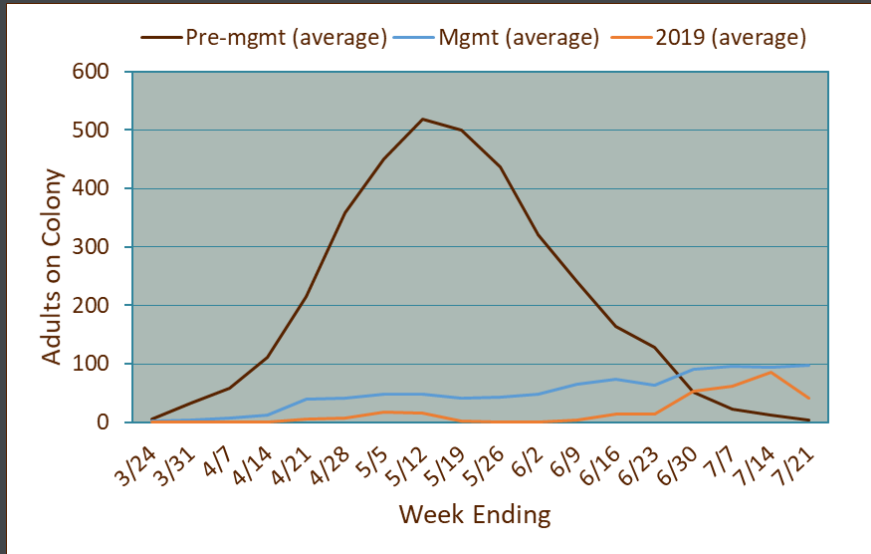


## NEST DISSUASION ACTIVITIES EFFECTIVE



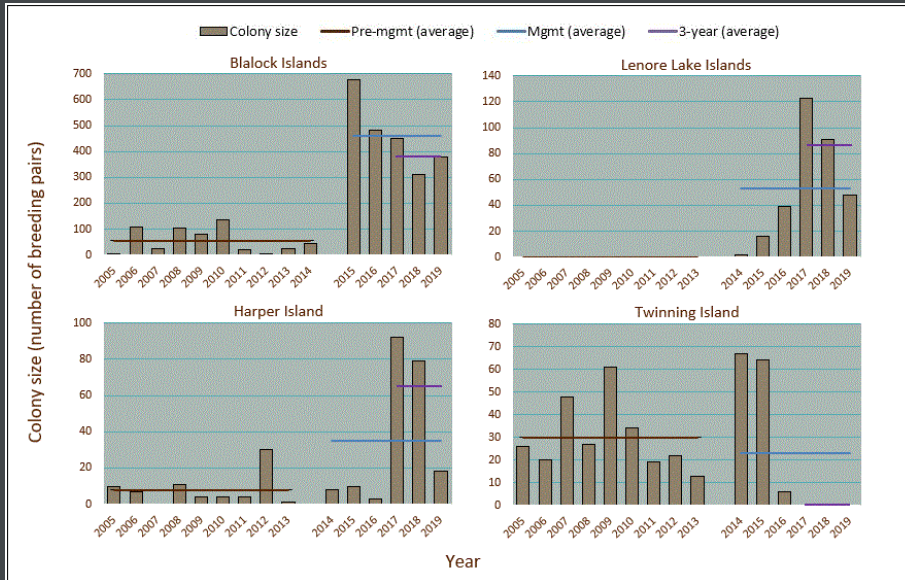
Passive and active nest dissuasion activities prevented colony formation at Goose Island and Crescent Island during 2016-2019

## CASPIAN TERNS HAVE STRONG FIDELITY TO REGION (Part 1)



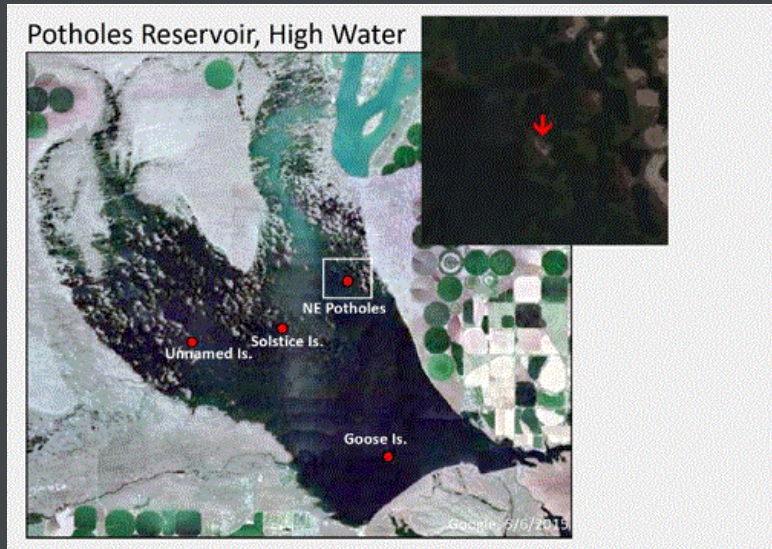
Despite not having an active colony at Goose Island since 2015, Caspian terns still returning to the site to nest

# CASPIAN TERNS HAVE STRONG FIDELITY TO REGION (Part 2)



Other Caspian tern colonies in the region grew after implementation of management

# ADAPTIVE MANAGEMENT EFFECTIVE WHEN IMPLEMENTED



Despite repeated attempts to nest in northern Potholes Reservoir, adaptive management effectivity prevented tern colony formation

## MANAGEMENT-RELATED DECLINE IN SMOLT PREDATION RATES

ESU/DPS	Pre-Management 2008–2013	Management 2014–2018
SR Sockeye	2.2% (1.6–2.8)	3.0% (1.9–4.3)
SR Sp/Su Chinook	1.0% (0.9–1.2)	0.7% (0.6–1.0)
UCR Spr Chinook	3.7% (2.7–4.8)	1.1% (0.7–1.7)
SR Fall Chinook	1.7% (1.5–2.0)	1.5% (1.1–2.0)
SR Steelhead	5.0% (4.4–5.8)	3.6% (3.1–4.4)
UCR Steelhead	20.0% (17.3–23.0)	7.6% (6.5–9.2)

Predation on Upper Columbia River Chinook and steelhead declined significantly during management, while there was little change in predation rates on Snake River populations

# CONSIDERATIONS

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## CONTINUE NEST DISSUASION EFFORTS AT GOOSE AND CRESCENT



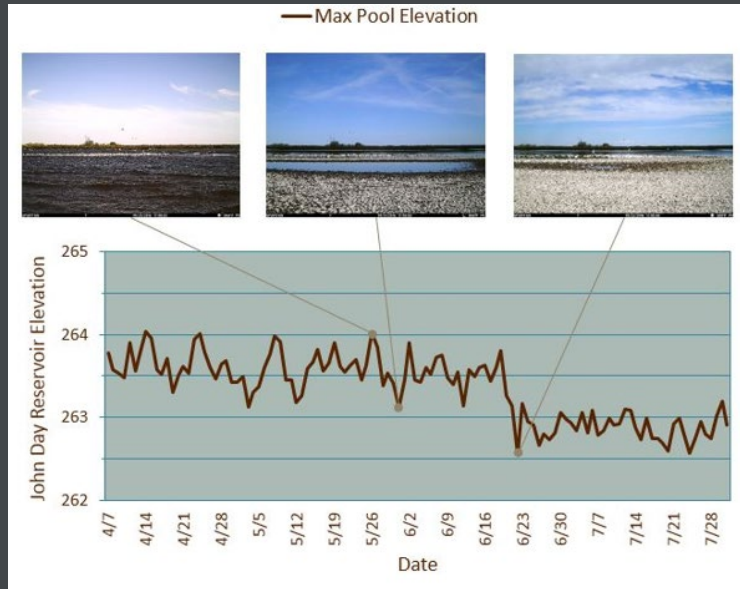
Make sure passive dissuasion adequate to prevent colony formation; if not, supplement with additional passive dissuasion and active hazing

## ADAPTIVE MANAGEMENT OF BLALOCK ISLAND COLONY

	Blalock Islands		
	Pre- Management 2007–2013	Management 2014–2019	Last 3-years 2017–2019
ESU/DPS			
SR Sockeye	0.2% (0.1–0.4)	1.6% (1.0–2.5)	1.8% (0.7–4.0)
SR Sp/Su Chinook	0.1% (0.1–0.2)	0.7% (0.5–0.9)	0.6% (0.4–0.9)
UCR Spr Chinook	< 0.1%	0.6% (0.5–0.9)	0.8% (0.5–1.3)
SR Fall Chinook	< 0.1%	0.7% (0.6–1.1)	0.9% (0.6–1.4)
SR Steelhead	0.5% (0.4–0.9)	3.7% (3.1–4.6)	3.1% (2.4–4.1)
UCR Steelhead	0.5% (0.3–0.7)	4.3% (3.6–5.6)	4.5% (3.4–6.1)

Predation rates by Blalock Island terns on steelhead smolts above the 2% threshold;  
consider adaptive management

# MANAGE TERN COLONIES BY RAISING POOL LEVELS



Blalock Islands tern colony underwater at pool levels above 264 ft. Low pool levels in Potholes Reservoir provides access to northern islands by mammalian predators

## ELIMINATE GOOSE ISLAND GULL COLONY



Gulls not dissuaded from nesting on Goose Island, provide strong social attraction to prospecting terns. Must consider possible change in gull predation rates

## CREATE HIGH QUALITY TERN NESTING HABITAT ALONG THE WA COAST



Tagging studies indicate high degree of connectivity between sites in the CPR and sites along the Washington Coast

Pictured here gull colony on Sand Island in Grays Harbor

# QUESTIONS

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