

LTPP Predator Monitoring and Management Options for 2025

EXTENSION BIG QUESTIONS 8 AND 9: What is the impact of predation on PP productivity and how effective is Program management at mitigating those impacts?			
OPTIONS	IMPLEMENTATION	INFORMATION COST	INFORMATION BENEFIT
CONTINUE 2021-2025	Outside monitoring	No information on alternative methods	5yrs of data under same mgmt to compare to previous 10yrs prior to implementation. High annual variability in productivity and across sites.
	Site, shoreline, nest cameras and track surveys - inside		
	Maintain existing exclosure fencing		
	Maintain lights		
	Predator fence at peninsula entrance plus mammalian t		
STOP 2025	Outside monitoring only	Highly reduced ability to fate nests lost to predation vs. other causes (weather). Lack of further data to address EBQ8 and EBQ9.	
	No cameras or track surveys - no inside monitoring		
	No fence maintenance		
	No lights		
	Predator fence at peninsula entrance plus mammalian t		
REDUCE A 2025	Outside monitoring	Highly reduced ability to fate nests lost to predation vs. other causes (weather). Lack of further data to address EBQ8. More limited ability to address EBQ9, effectiveness of PRRIP mgmt to reduce predation.	Management design stays the same for comparability across 5 years. Can still address whether productivity is better at additional management sites, but not specifically because of reduced predation.
	No cameras or track surveys - no inside monitoring		
	Maintain existing exclosure fencing		
	Maintain lights		
	Predator fence at peninsula entrance plus mammalian t		
REDUCE B 2025		Less information about predator presence. Less information about effectiveness of management to reduce predator presence.	Most fating information from nest cameras. Continue to gather data to address EBQ 8 and 9.
	Outside monitoring		
	Nest cameras and track surveys - inside monitoring		
	No shoreline or site cameras		
	Maintain existing exclosure fencing		
	Maintain lights		
	Predator fence at peninsula entrance plus mammalian t		
ADAPT 2025		Evaluation of effectiveness of current management limited to 4 highly variable years.	Gather information on new predator management method.
	Try something different		
Notes from MRRP DAMCR: Low confidence that predator removal is effective for improving plover productivity when habitat is not limited. Concerns over immediate replacement of removed predators. No predator research over last few years. Unknown for 2025.			
Mixed effectiveness of nest caging for improvement of plover productivity. Concerns about impacts to adults. Nest caging study funded for 2025.			

Consider the options above in terms of information provided to GC for decision-making

EBQ Reframe for TAC & ISAC – to be discussed on Tuesday afternoon

Extension Big Question #8: How much of an effect does predation have on PP productivity (fledging)?
Learning Objective*₁: Quantify the impact of predation on PP productivity. Learning Objective₂: Identify predator species responsible for losses. Learning Objective₃: Determine when losses are incurred, at the nest or during brood rearing. Learning Objective₄: Utilize population viability models to predict what effect decreases in fledge ratios due to predation may mean in terms of future PP breeding pairs on the central Platte River.
Extension Big Question #9: How effective is Program management at mitigating losses of PP productivity due to predation?
Learning Objective₁: Evaluate effectiveness of trapping, fencing, and/or predator deterrent lighting at reducing nest/brood failure due to predation. Learning Objective₂: Develop predator management alternatives based upon learning through remote camera/video monitoring. Learning Objective₃: Evaluate the necessity for additional predator management based upon PP response to predation over time.
Implementation Notes: *Summarized for EBQ #8 and #9 are learning objectives for data collection necessary to answer these questions. They are written as learning objectives here rather than priority hypotheses to reflect that EBQ #8 and #9 are considered a lower tier of importance for science learning when compared to EQB #1-7. In connection with outside monitoring of plover habitat use and productivity, track surveys around nesting peninsulas and deployment of site- and nest-level trail and video cameras will provide documentation of predator presence, plover losses due to predation, and overall productivity at a site and system level. Losses of plover nests and chicks to predation and overall productivity at OCSW sites where baseline predator control includes trapping and fencing at land entrances to nesting peninsulas will be examined over the long term and compared to responses following implementation of additional predator management including predator exclosure fencing around entire nesting peninsulas and implementation of predator deterrent lighting. Information gathered will be used to develop novel and targeted strategies for mitigating losses due to predation. A Crystal Ball population model will help determine when losses to predation (number of losses over how many years) present greater risk to local population growth, warranting implementation of additional predator management. Further details in Attachment 3 Implementation Activities & Timeline and Attachment 4 Data Collection, Analysis, Synthesis, & Decision-Making Reference Materials

Second Increment management decision-making context

- The USFWS agreed that existing OCSW and MCA habitats are sufficient to meet the Program’s existing and future obligation to benefit the piping plover unless use and/or productivity drops below an acceptable level (undefined).
- At the end of the First Increment, piping plover productivity at OCSW sites was lower than expected for two years in a row, leading the Program to initiate additional monitoring to identify causes as well as additional predator management actions to evaluate our ability to reduce losses.

Extension research/monitoring was expected to address the following negotiation-related questions:

- What future patterns of use and productivity (through time) could be considered unacceptable and trigger additional scrutiny by the USFWS?
 - Can predation be reduced through implementation of additional/different predator controls?
 - How much does additional predator control cost (effort & \$) relative to potential benefits?

How is ongoing research intended to address these uncertainties?

- Quantify what we can expect in terms of periodicity and range of losses in plover productivity to predation.
- Predict what effect decreases in fledge ratios due to predation may mean in terms of future plover breeding population in the AHR.
- Evaluate the cost and effectiveness (through time) of predator control/management actions on plover productivity.

Do we know enough already to estimate relationships (with confidence) and stop focusing on this question?

- EDO assessment
 - Unclear. We have implemented three years of additional predator management and predator monitoring research and have just begun analyzing the data. Given high variability in productivity on an annual and site level, gut feeling two more years would likely reduce uncertainty to an acceptable level.
- TAC Assessment?
- ISAC Assessment?

Potential surprises:

- Habitat availability in other systems can strongly influence the number of breeding pairs that nest on Program OCSW habitat. Unmanageable environmental factors like weather can strongly influence plover productivity. Factors out of our control may drive use and productivity – need to be able to identify those situations.