Flagstaff Watershed Protection Project

Mexican Spotted Owl, *Strix occidentalis lucida*
Monitoring Report

USDA Forest Service-Coconino National Forest, Flagstaff Ranger District

2021

Introduction

Since 2015, the U.S. Forest Service Coconino National Forest and U.S. Fish and Wildlife Service (USFWS) are monitoring Mexican spotted owls as part of the Flagstaff Watershed Protection Project (FWPP). FWPP is the result of the 2012 passage of a bond measure by the voters of the City of Flagstaff (City) to fund fuels reduction work on National Forest System lands within the Coconino National Forest and Arizona State trust lands. The project involves work in the Rio de Flag watershed, north of Flagstaff, to reduce the risk of post-wildfire flooding into the City as well as work in the Mormon Mountain area to reduce the potential for post-fire sedimentation within the Lake Mary watershed. Project activities will occur over the next five to ten years.

The project proposes to conduct forest management activities (e.g., thinning, burning, etc.) that may affect up to nine designated Mexican Spotted Owl (MSO) protected activity centers (PACs). For more information about the MSO and recommended management, please refer to the 2012 Recovery plan for the Mexican Spotted Owl (*Strix occidentalis lucida*), First Revision (USFWS 2012, Recovery Plan). Included in this report are the results of the required 2018 MSO PAC monitoring for the FWPP MSO Management Experiment (USFWS 2015) and recovery habitat (inventory) surveys.

Methods

We used the USFWS 2012 Mexican Spotted Owl Survey Protocol (USFWS 2012, Appendix D).

PAC Monitoring Results

Per the FWPP Management Experiment, we are monitoring 12 PACs: six treatment and six reference in the Dry Lake Hills and Mormon Mountain project areas (Tables 1 & 2). Through the objection resolution process, the Forest Service also agreed to monitor three additional PACs. More information is in the FWPP Biological Opinion (USFWS 2015) and the FWPP Record of Decision (USFS 2015a). Due to the uncertainty of timing of treatments, we may monitor PACs annually until they occur.

Table 1. FWPP - Mormon Mountain Treatment and Reference PACs

Treatment	Reference	Requirement
Mormon Mountain North	Moore Well-Rock Dyke	Management Experiment
De Toros	Dairy Springs	Management Experiment
Weimer Spring	Red Raspberry	Management Experiment
Lockwood		Objection Resolution Agreement
Mormon Mountain		Objection Resolution Agreement

Table 2. FWPP - Dry Lake Hills Treatment and Reference PACs

Treatment	Reference	Requirement
Mt. Elden	Little Spring	Management Experiment
Orion Spring	Snowbowl Road	Management Experiment
Schultz Creek	East Bear Jaw	Management Experiment
Weatherford 2		Objection Resolution Agreement

In 2021, we monitored seven PACs in the Dry Lake Hills (Table 3). Surveys located owls in all the PACs except East Bear Jaw. Weatherford2 was the only pair to produce young. In addition, we informally monitored Peaks Crag PAC where a pair was observed but nesting status was unknown since they were found after June 1st.

Table 3. Survey Results for the Dry Lake Hills PACs from 2015-2021

Dry Lake Hills PACs	2015	2016	2017	2018	2019	2020	2021
East Bear Jaw	S-NY	O-NK	O-NF	O-NN	O-NN	O-1YD	A
Little Spring	O-NN	O-NK	O-1Y	O-NN	O-2Y	O-2Y	O-NK
Mt. Elden	O-NY	O-NK	O-2Y	O-NN	O-2Y	O-NF	O-NF
Oldham	-	-	-	O-NU	SM-NU	--[1]	-
Orion Spring	O-NY	O-NK	S-NK	O-NK	O-NU	O-NF	O-NK
Schultz Creek	O-NY	O-NN	O-2Y	O-NK	O-2Y	O-NN	O-NF
Snowbowl Road	O-NN	O-NK	O-NK	O-1Y	O-NU	O-2Y	O-NK
Weatherford 2	O-NN	O-NN	O-NF	O-NK	O-NN	O-1Y	O-1Y
Total Young Produced	**0**	**0**	**5**	**1**	**6**	**5**	**1**

[1] US Fish and Wildlife and Forest Service biologists analyzed the data we collected since 2013 in the Mt. Elden PAC and the information upon which we delineated the Oldham PAC. Based on the data, we determined that one pair of owls is using both areas. In 2021, biologists from the two agencies worked together to re-delineate the Mt. Elden PAC to include the best habitat from both PACs.

With the potential for operations to occur in the Mormon Mountain project area in the next few years, we formally monitored the eight PACs on Mormon Mountain (Table 4). There were five occupied PACs with three producing young. We did not detect owls in three PACs.

Table 4. Survey Results for the Mormon Mountain PACs from 2015-2021

Mormon Mt. PACs	2015	2016	2017	2018	2019	2020	2021
Dairy Spring	M-NY	O-NK	IM-NR	S-NU	O-NU	O-2Y	O-2Y
De Toros	NI	M-NK	IM-NR	O-NU	SU-NU	O-NU	A
Lockwood	O-NN	O-1Y	O-2Y	O-NU	O-1Y	O-NK	O-2Y
Moore Well-Rock Dike	O-1Y	O-NK	O-NU	M-NU	O-1Y	O-1Y	O-NF
Mormon Mountain	NI	A	IM-NR	IM-NR	IM-NR	A	--[1]
Mormon Mountain North	O-NY	O-NK	O-1Y	O-NU	IM-NR	A	A
Red Raspberry	O-NN	O-NK	O-1Y	O-NU	O-NU	O-NN	O-2Y
Weimer Springs	NI	O-NK	IM-NR	O-NU	O-NU	A	O-NF
Total Young Produced	**1**	**1**	**4**	**0**	**2**	**3**	

[1] US Fish and Wildlife and Forest Service biologists analyzed the data collected for the Mormon Mountain PAC since 2008. Based on the data, we determined that detections associated with this PAC were birds from surrounding PACs and, therefore, the Mormon Mountain PAC does not meet the definition of a PAC. The designation was removed in 2021.

Occupancy:	**Reproductive Status:**
A = Absent	#Y = Number of young fledged
O = Pair Occupancy inferred or confirmed	#YD = Number of young found dead
M = Male inferred or confirmed	NU = Nesting Unknown (NOT done to protocol)
F = Female inferred or confirmed	NK = Nesting Unknown (done to protocol)
S = Single (sex unknown) inferred or confirmed	NY = No Young produced nesting status undetermined
NI = No Information (PAC not monitored)	NN = Non-nesting/Non-reproduction confirmed

IM-NR = Informally Monitored, No Response	NF = Nest Failed

Inventory Survey Results

In 2021, protocol-level inventory surveys were conducted in the Mormon Mountain project areas. Inventory surveys on approximately 400 acres were completed to protocol on Mormon Mountain. This effort was focused on locating owls in potential habitat on the entire mountain. No owls were detected outside of currently delineated PAC boundaries.

Management Activities

Removal of logging slash out of the Dry Lake Hills project area to a staging area along Schultz Pass Road continued in Winter 2021 until the start of the MSO breeding season. Work resumed in September and is expected to be completed by March 2022. The Schultz Tank timber sale was awarded in May 2020 and the Dry Lake Hills Integrated Resource Service Contract was awarded in September 2021. Work is anticipated to begin on both projects in fall of 2021 or winter of 2022.

Literature Cited

U.S. Department of Agriculture, Forest Service. 2015a. Record of Decision for the Flagstaff Watershed Protection Project. MB-R3-04-29. Coconino National Forests. October 2015.

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