

# Flagstaff Watershed Protection Project

## Mexican Spotted Owl, *Strix occidentalis lucida*

### Monitoring Report

USDA Forest Service-Coconino National Forest, Flagstaff Ranger District

2022



## Introduction

Since 2015, the U.S. Forest Service Coconino National Forest and U.S. Fish and Wildlife Service (USFWS) are monitoring Mexican spotted owls (MSO) 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 MSO protected activity centers (PACs). For more information about the MSO and recommended management, please refer to the 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	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 2022, we monitored seven PACs in the Dry Lake Hills (Table 3). Surveys located MSOs in all the PACs except East Bear Jaw. MSO occupied six PACs with MSO in five PACs producing young. In addition, we informally monitored Peaks Crag PAC where we observed a single MSO in June and no additional surveys occurred because of the Pipeline Fire.

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

Dry Lake Hills PACs	2015	2016	2017	2018	2019	2020	2021	2022
East Bear Jaw	S-NU	O-NU	O-NF	O-NN	O-NN	O-1YD	A	A
Little Spring	O-NN	O-NU	O-1Y	O-NN	O-2Y	O-2Y	O-NU	O-1Y
Mt. Elden	O-NU	O-NU	O-2Y	O-NN	O-2Y	O-NF	O-NF	O-2Y
Oldham	-	-	-	O-NU	M-NU	-- <sup>1</sup>	--	--
Orion Spring	O-NU	O-NU	S-NU	O-NU	O-NU	O-NF	O-NU	O-NN
Schultz Creek	O-NU	O-NN	O-2Y	O-NU	O-2Y	O-NN	O-NF	O-1Y
Snowbowl Road	O-NN	O-NU	O-NU	O-1Y	O-NU	O-2Y	O-NU	O-1Y
Weatherford 2	O-NN	O-NN	O-NF	O-NU	O-NN	O-1Y	O-1Y	O-2Y

<sup>1</sup> 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 MSO pair is using both areas. In 2021, biologists from the two agencies worked together to re-delineate the Mt. Elden PAC to include the highest-quality habitat from both PACs.

Since operations began in the project area in 2021, we formally monitored the seven PACs on Mormon Mountain (Table 4). MSO occupied six PACs with four MSO pairs producing young. We did not detect MSO in Weimer Springs PAC.

**Table 4. Survey Results for the Mormon Mountain PACs from 2015-2022**

Mormon Mt. PACs	2015	2016	2017	2018	2019	2020	2021	2022
Dairy Spring	M-NU	O-NU	IM-NR	S	O	O-2Y	O-2Y	O-NN
De Toros	NI	M-NU	IM-NR	O-NU	S	O-NU	A	O-NF
Lockwood	O-NN	O-1Y	O-2Y	O-NU	O-1Y	O-NU	O-2Y	O-1Y
Moore Well	O-1Y	O-NU	O-NU	M-NU	O-1Y	O-1Y	O-NF	O-1Y
Mormon Mountain	NI	A	IM-NR	IM-NR	IM-NR	A	-- <sup>1</sup>	--
Mormon Mountain North	O-NU	O-NU	O-1Y	O-NU	IM-NR	A	A	O-1Y
Red Raspberry	O-NN	O-NU	O-1Y	O-NU	O-NU	O-NN	O-2Y	O-2Y
Weimer Springs	NI	O-NU	IM-NR	O-NU	O-NU	A	O-NF	A

<sup>1</sup> 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 MSO 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 O = Pair Occupancy inferred or confirmed M = Male inferred or confirmed F = Female inferred or confirmed S = Single (sex unknown) inferred or confirmed NI = No Information (PAC not monitored) IM-NR = Informally Monitored, No Response	#Y = Number of young fledged NU = Nesting Unknown (NOT done to protocol) NN = Non-nesting/Non-reproduction confirmed NF = Nest Failed

## Inventory Survey Results

In 2022, inventory surveys were conducted in the Mormon Mountain project areas on approximately 400 acres for a second year. 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

In 2022, units were harvested in the three active timber projects in FWPP: 132 acres in the Dry Lake Hills Integrated Resource Service Contract (IRSC), 270 acres in the Schultz Tank timber sale and 21 acres in the Mormon Mountain North timber sale. Operations on projects in the Dry Lake Hills were discontinued in June due to the Pipeline Fire and operations on the Dry Lake Hills IRSC resumed in the fall.

## 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.

\_\_\_\_\_. 2015b. [Final Environmental Impact Statement for the Flagstaff Watershed Protection Project](#). MB-R3-04-27. Coconino National Forests. June 2015.

U.S. Department of Interior, Fish and Wildlife Service. 2012. [Recovery plan for the Mexican spotted owl \(\*Strix occidentalis lucida\*\), First Revision](#). Albuquerque, NM. 413 pp.

\_\_\_\_\_. 2015. [Biological Opinion-Flagstaff Watershed Protection Project](#). Consultation # 02EAAZ00-2013-F-0190. June 5, 2015. Arizona Ecological Services Office, Phoenix, AZ. 50 pp.