

U.S. Fish & Wildlife Service

Recovery Implementation Strategy for Desert yellowhead (*Yermo xanthocephalus*)

FINAL



Photo credit: Genevieve Skora, USFWS

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Desert yellowhead Recovery Implementation Strategy

This Recovery Implementation Strategy (RIS) supplements the desert yellowhead (*Yermo xanthocephalus*) final recovery plan (Recovery Plan, U.S. Fish and Wildlife Service [USFWS] 2022), describes in greater detail how the site-specific, prioritized actions outlined in the recovery plan will be implemented, and estimates the time and costs to complete recovery. The RIS may be revised at any time during the recovery process, whenever experience and information gained call for a change in tactics, therefore maximizing flexibility of recovery implementation. As used here, “actions” are broad measures that clearly describe what needs to be done to accomplish the goal of long-term viability. “Activities” are the detailed, on-the-ground tactical steps needed to implement the higher-level recovery actions.

Prioritized recovery actions from the Recovery Plan and their associated activities are listed below (Table 1). Priority 1 actions and activities are defined as those that must be taken to prevent extinction or to prevent the subspecies from declining irreversibly in the foreseeable future. Priority 2 actions and activities are those that must be taken to prevent a significant decline in population size or habitat quality or some other significant negative impact. Priority 3 actions and activities are all other measures that are necessary to provide for full recovery of the species. The assignment of priorities does not imply that some actions and activities are of low importance, but instead implies that lower priority items may be deferred while higher priority items are being implemented. Please refer to Table 2 for a clear association among recovery actions, activities, and the threats they address. Table 3 shows an estimated schedule and projected cost for each activity. These cost estimates are intended as a planning aid only. The “responsible parties” listed are not obligated to expend the amounts shown.

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Acronyms Used:

BLM	Bureau of Land Management
CPC	Center for Plant Conservation
ESA	Endangered Species Act
FR	Federal Register
RIS	Recovery Implementation Strategy
RMP	Resource Management Plan
SSA	Species Status Assessment
USFWS	U.S. Fish and Wildlife Service
WYNDD	Wyoming Natural Diversity Database

Table 1. Recovery actions and activities for the recovery of the desert yellowhead.

Priority	Action	Activity	Description
1	1	1.1	Submit Cedar Rim withdrawal application to BLM Lander Field Office demarking specific area to be withdrawn from mineral development for Cedar Rim.
		1.2	Kickoff, Notice of Intent/Notice of Proposed Withdrawal, EA & Draft FONSI, Protest & DR, Final Withdrawal
		1.3	Provide technical and/or financial assistance, as needed, to support the BLM's mineral withdrawal process through to the Federal Register and Congressional approval.
		1.4	Publish BLM RMP Amendment and submit withdrawal petition
	2	2.1	Renew Sand Draw protections from disturbance: Renew the existing protections in place for Sand Draw that match the existing mineral withdrawal and critical habitat boundaries when the mineral withdrawal expires in 2028 (and continue to renew as needed thereafter)
		2.2	Provide technical and/or financial assistance, as needed, to support the BLM's mineral withdrawal renewal process for Sand Draw through to the Federal Register and Congressional approval.
2	3	3.1	Annually monitor the abundance of individual plants at both the Sand Draw and Cedar Rim populations using quadrat and transect methodologies, and use these data to track population trends and lambda (λ). Monitoring will be conducted following the historical average abundance protocols for a period of 10 years.
		3.2	Prepare a post-delisting monitoring plan.
	4	4.1	Annually monitor the viability of seeds in both populations by visual examination on the plant. As soon as evidence of successful sexual reproduction exists, this monitoring can move to every 3 years to focus efforts on other recovery actions. The presence of a large number of viable seeds at either population in any given year will enable seed banking (Action 6).
	5	5.1	Annually monitor potential stressors range-wide so that their influence on each population, if any, can be tracked. This includes the potential stressors identified in the SSA: invasive species; grazing and trampling by livestock, wild horses, and native ungulates; off-road vehicle recreation; and wildfire.
		5.2	Continue to implement Lander RMP measures for reducing ORV use, grazing and trampling pressure, and wildfire within and around desert yellowhead habitats, and so routine monitoring of the populations will indicate whether any of these threats have begun to negatively affect the population.

Priority	Action	Activity	Description
		5.3	In subsequent updates, the Lander RMP will continue to consider specific measures for minimizing the effect of these threats on desert yellowhead populations.
		5.4	If a stressor is identified in Activity 5.1 as posing a current or imminent impact to desert yellowhead, develop and implement management appropriate to reduce the threat.
	6	6.1	Identify appropriate CPC-affiliated seed storage facility to protect the species against a catastrophic event. Establish an <i>ex situ</i> collection of seeds from both populations.
		6.2	Collect seeds according to the CPC best practices for collecting seeds from wild rare plant populations (CPC 2020).
		6.3	Transfer seeds to CPC-affiliated seed storage facility.
3	7	7.1	Maintain consistency and momentum of conservation efforts for desert yellowhead rangewide through communication and collaboration across jurisdictions and agencies with partners and stakeholders.
		7.2	Complete and share annual status report with partners.

Table 2. Factors affecting the survival of desert yellowhead and associated recovery actions, activities, and criteria.

Listing Factors Under the ESA	Threats Description	Recovery		
		Actions	Activities	Criteria
Factor A The present or threatened destruction, modification, or curtailment of its habitat or range	Mineral resources extraction	1, 2, 7	1.1, 1.2, 1.3, 1.4, 2.1, 2.2, 7.1, 7.2	1
	Grazing and trampling by livestock, horses, and native ungulates	3, 5, 7	3.1, 3.2, 5.1, 5.2, 5.3, 5.4, 7.1, 7.2	2
	Off-road vehicle recreation and deliberate damage and destruction	3, 5, 7	3.1, 3.2, 5.1, 5.2, 5.3, 5.4, 7.1, 7.2	2
	Invasive plant encroachment and displacement	3, 5, 7	3.1, 3.2, 5.1, 5.2, 5.3, 5.4, 7.1, 7.2	2
	Wildfire adverse impacts to habitat and plants	3, 5, 7	3.1, 3.2, 5.1, 5.2, 5.3, 5.4, 7.1, 7.2	2
Factor D The inadequacy of regulatory mechanisms	Regulatory mechanisms and conservation measures that reduce future impacts from energy and mineral development	1, 2, 3, 5, 7	1.1, 1.2, 1.3, 1.4, 2.1, 2.2, 3.1, 3.2, 5.1, 5.2, 5.3, 7.1, 7.2	1
Factor E Other natural or manmade factors	Global changes	3, 4, 5, 6, 7	3.1, 3.2, 4.1, 5.1, 5.2, 5.3, 5.4, 6.1, 6.2, 6.3, 7.1, 7.2	2
	Low redundancy and representation	3, 4, 6	3.1, 3.2, 4.1, 6.1, 6.2, 6.3, 7.1, 7.2	3, 4

Table 3. Recovery Implementation Schedule and projected costs for the recovery of the desert yellowhead. These cost estimates are intended as a planning aid only. The “responsible parties” listed are not obligated to expend the amounts shown.

Priority	Activity	Description	Threat Factor(s)	Duration (years)	Responsible Parties	Cost (\$1,000s) and Time Frame (Years)						
						1	2	3	4	5	5 thru 10	Total
1	1.1	Submit Cedar Rim withdrawal application to BLM Lander Field Office demarking specific area to be withdrawn from mineral development for Cedar Rim.	A	2	USFWS	3	1	0	0	0	0	4
1	1.2	Kickoff, Notice of Intent/Notice of Proposed Withdrawal, EA & Draft FONSI, Protest & DR, Final Withdrawal for Cedar Rim.	A	1	BLM	33	0	0	0	0	0	33
1	1.3	Provide technical and/or financial assistance, as needed, to support the BLM’s Cedar Rim mineral withdrawal process through to the Federal Register and Congressional approval.	A	2	USFWS	3	1	0	0	0	0	4
1	1.4	Publish BLM RMP Amendment and submit withdrawal petition for Cedar Rim.	A	2	BLM	0	3	0	0	0	0	3
1	2.1	Renew the existing mineral withdrawal for Sand Draw that matches the existing mineral withdrawal boundaries when it expires in 2028 (et al.).	A	10	BLM	0	0	0	0	0	33	33

Priority	Activity	Description	Threat Factor(s)	Duration (years)	Responsible Parties	Cost (\$1,000s) and Time Frame (Years)						
						1	2	3	4	5	5 thru 10	Total
1	2.2	Provide technical and/or financial assistance, as needed, to support the BLM's mineral withdrawal renewal process for Sand Draw through to the Federal Register and Congressional approval.	A	10	USFWS	0	0	0	0	0	4	4
2	3.1	Annually monitor the abundance of individual plants at both the Sand Draw and Cedar Rim populations using quadrats and transects methodologies, and use these data to track population trends and lambda (λ). Monitoring will be conducted following the historical average abundance protocols for a period of 10 years.	A, E	10	USFWS	10	10	10	10	10	50	100
2	3.2	Prepare a post-delisting monitoring plan.	A,D, E	1	USFWS	0	0	0	0	0	2	2
2	4.1	Annually monitor the viability of seeds in both populations by visual examination on the plant. As soon as evidence of successful sexual reproduction exists, this monitoring can move to every-3-years to focus efforts on other recovery actions. The presence of a large number of viable seeds at either population in any given year will enable seed baking (Action 6).	E	10	USFWS	1	1	1	1	1	2	7

Priority	Activity	Description	Threat Factor(s)	Duration (years)	Responsible Parties	Cost (\$1,000s) and Time Frame (Years)						
						1	2	3	4	5	5 thru 10	Total
2	5.1	Annually monitor potential stressors range-wide so that their influence on each population, if any, can be tracked. This includes the potential stressors identified in the SSA: invasive species; grazing and trampling by livestock, wild horses, and native ungulates; off-road vehicle recreation; and wildfire.	A, D, E	10	USFWS	1	1	1	1	1	2	7
2	5.2	Continue to implement Lander RMP measures for reducing ORV use, grazing and trampling pressure, and wildfire within and around desert yellowhead habitats, and so routine monitoring of the populations will indicate whether any of these threats have begun to negatively affect the population.	A, D	10	BLM	1	1	1	1	1	2	7
2	5.3	In subsequent updates, the Lander RMP will continue to consider specific measures for minimizing the effect of these threats on desert yellowhead populations.	D	10	BLM	0	0	0	0	0	1	1
2	5.4	If a stressor is identified in Activity 5.1 as posing a current or imminent impact to desert yellowhead, develop and implement management appropriate to reduce the threat.	A, D, E	10	USFWS, BLM	7	7	7	7	7	35	70

Priority	Activity	Description	Threat Factor(s)	Duration (years)	Responsible Parties	Cost (\$1,000s) and Time Frame (Years)						
						1	2	3	4	5	5 thru 10	Total
2	6.1	Identify appropriate CPC-affiliated seed storage facility to protect the species against a catastrophic event. Establish an <i>ex situ</i> collection of seeds from both populations.	E	1	USFWS	1	0	0	0	0	0	1
2	6.2	Collect seeds according to the CPC best practices for collecting seeds from wild rare plant populations (CPC 2020).	E	1	USFWS	0	0	0	1	0	0	1
2	6.3	Transfer seeds to CPC-affiliated seed storage facility.	E	1	USFWS	0	0	0	1	0	0	1
3	7.1	Maintain consistency and momentum of conservation efforts for desert yellowhead rangewide through communication and collaboration across jurisdictions and agencies with partners and stakeholders.	D	10	USFWS	1	1	1	1	1	5	10
3	7.3	Complete and share annual status report with partners.	D	10	USFWS	3	3	3	3	3	15	30