

Finding of No Significant Impact

for the Issuance of a Long-Term Incidental Eagle Take Permit for
the Nevada Gold Mines LLC Goldrush Mine Project

Nevada

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Introduction

The United States Fish and Wildlife Service (Service) received an application from Nevada Gold Mines LLC (NGM) (Applicant) requesting eagle take coverage under the Bald and Golden Eagle Protection Act (Eagle Act) (16 United States Code [U.S.C.] §§ 668–668d and 50 Code of Federal Regulations [CFR] § 22.26) for incidental take of eagles at the Goldrush Mine Project (Project). The Project includes 1,626 acres of new surface disturbance on public land administered by the Bureau of Land Management (BLM), including approximately 210 acres of exploration disturbance that could occur anywhere within the proposed Goldrush Mine Plan boundary. In addition, approximately 1,027 acres of existing authorized disturbance would be within the Project footprint, and approximately five acres of existing authorized disturbance would be reclassified as part of the Project. Disturbance to eagles could occur from the visual and audible events associated with underground mining; including the presence of people, mining equipment, waste rock and ore hauling, and other activities associated with subterranean mining. The Project is located approximately 30 miles south of Beowawe, Nevada, in both Lander and Eureka counties, Nevada. The Applicant requested a long-term (24-year) incidental eagle take permit (permit) for disturbance to, and the reoccurring loss of annual productivity from, eight breeding golden eagle (*Aquila chrysaetos*) pairs in the vicinity of the Project (one mile from surface-disturbing activities); which includes 14 current nests associated with the eight territories.

Issuance of a permit by the Service for take that is incidental to otherwise lawful activities under the Eagle Act constitutes a discretionary Federal action that is subject to the National Environmental Policy Act (NEPA) (42 U.S.C. §§ 4321–4347). In accordance with NEPA, the Service prepared an Environmental Assessment (EA) analyzing the environmental consequences of issuing a permit for the disturbance take of golden eagles associated with the Project. This EA assists the Service in ensuring compliance with NEPA and in making a determination as to whether any “significant” impacts to the environment not previously analyzed under the Service’s Programmatic Environmental Impact Statement for the Eagle Rule Revision, December 2016 (PEIS) (USFWS 2016) could result from the analyzed actions, which would require preparation of an Environmental Impact Statement (EIS). Considering “significance” under NEPA is addressed by regulation 40 CFR § 1501.3(b), and requires short- and long-term consideration and beneficial and adverse effects, as well as considering the affected area and its resources. Effects of the action may be direct, indirect, or cumulative (40 CFR 1508.1(g)).

The Service’s purpose in considering the proposed action of issuing an eagle incidental take permit is to fulfill our authority under the Eagle Act (16 U.S.C. §§ 668-668d) and its regulations (50 CFR § 22). Applicants whose otherwise lawful activities may result in take of eagles can apply for incidental eagle take permits so that their projects may proceed without potential violations of the Eagle Act. We may issue permits for eagle take that is associated with, but not the purpose of, an activity. Such permits can be issued by us when the take that is authorized is compatible with the Eagle Act preservation standard; it is necessary to protect an interest in a particular locality; and it is associated with, but not the purpose of, the activity; and it cannot be practicably avoided (50 CFR § 22.80 and 81 Federal Register [FR] 91494).

The need for this federal action is a decision on an eagle incidental take permit application from NGM that is in compliance with all applicable regulatory requirements set forth under the Eagle Act in 50 CFR § 22.

Proposed Action and Alternative Considered

In the EA, the Service fully analyzed two potential courses of action, summarized below, to respond to the Applicant's request for an incidental eagle take permit.

Proposed Action

The Service proposed to issue an incidental eagle take permit, with associated conditions, to NGM for disturbance take of up to eight golden eagle breeding pair territories, which currently contain 14 nests, for 24 years. The permit would require implementation of all conservation measures and commitments described in the Applicant's submitted permit application.

Alternative 1: No Action

Under the No-Action Alternative, the Service would take no further action on NGM's eagle take permit application.

Public Comment and Tribal Coordination

Scoping regarding issuance of eagle take permits was performed for the PEIS (USFWS 2016). This Finding of No Significant Impact and attached EA is being made public on the Service's regional webpage for at least 30 days prior to the Service considering issuance of the permit.

To notify Tribes regarding potential issuance of the permit, the Service sent letters to 14 federally recognized tribal governments located within the vicinity of the Project, informing them of the received permit application and the preparation of the EA, and offering the opportunity for formal consultation regarding potential issuance of the permit. Two tribes responded with correspondence dated February 21, 2023 and March 16, 2023. One tribe requested an informal meeting to discuss the permit application and terms of the project. The meeting occurred via video-call on March 27, 2023. Based on discussions during that call the tribal Chairwoman determined formal Government-to-Government consultation was not necessary. The second tribe expressed the cultural and religious significance of eagles to their community and requested information on the compensatory mitigation associated with an incidental take permit. The Service responded with a letter dated April 20, 2023, explaining the mitigation process and re-emphasizing the opportunity to meet or enter into formal consultation. There was no additional correspondence received from these two tribes and the Service received no responses from any of the other Tribes contacted.

Selected Alternative

Based on review of the analyses detailed in the EA, the Service selected the Proposed Action of issuing an incidental eagle take permit to NGM for disturbance take of eight golden eagle breeding pairs, for 24 years.

Disturbance take of golden eagles is predicted to occur under both alternatives; however, the Proposed Action fully offsets the take with required compensatory mitigation, which would not occur under the No-Action Alternative.

The Proposed Action is consistent with the purpose and need for this Federal action and is in compliance with all statutory (16 U.S.C. §§ 668) and regulatory requirements (50 CFR § 22.80 and 50 CFR § 13.21), including the criteria codified for permit issuance (50 CFR § 22.80(f)).

Determining Significance

When considering whether the effects of the Proposed Action are significant, regulations of the NEPA require agencies to “analyze the potentially affected environment and degree of the effects of the action” (40 CFR § 1501.3(b)). This includes considering the extent of the potentially affected area (national, regional, or local) and its resources, as appropriate to the specific action. Further considerations for the degree of the effects include both short- and long-term effects, both beneficial and adverse effects, effects on public health and safety, and effects that would violate Federal, State, Tribal, or local law protecting the environment (40 CFR § 1501.3(b)). Below we examine these considerations for the selected Proposed Action.

Potentially Affected Environment

For purposes of analyzing the selected Proposed Action, the appropriate affected environment associated with the Proposed Action is local and regional, because the Proposed Action does not affect statewide or national resource values. Analyses of effects at the local and regional scale are provided in the EA.

Golden eagles are the resource in the affected area most likely to be affected by the Proposed Action of issuance of the requested eagle take permit. Eight golden eagle pairs nesting in the vicinity of the Project may be disturbed by these activities. However, as discussed in the EA and below, the Applicant will implement conservation measures to minimize the risk to eagles and will offset golden eagle take through compensatory mitigation.

Bald eagles (*Haliaeetus leucocephalus*) are known to occur in the region but have not been documented within a 10-mile radius of the Plan boundary and are thus not expected to be affected by activities associated with the Project. However, bald eagles in the region may benefit from avoidance and minimization measures established to reduce the risk to golden eagles. For example, bald eagles may benefit from reduced electrocution risk due to the power pole retrofitting to be done as offsetting compensatory mitigation for the authorized golden eagle take.

Migratory birds are not expected to be negatively affected by the Proposed Action of issuing an eagle take permit to the Applicant, however migratory birds may incidentally benefit from reduced electrocution risk due to the power pole retrofitting to be done for the eagle take permit.

Authorizing incidental eagle take is not expected to have effects to species protected by the Endangered Species Act (ESA) at the Project facility. Furthermore, no species listed under the ESA, or potential critical habitat, were found to be present within the Plan boundary.

Eagles and their feathers are revered and considered sacred in many Native American traditions. Issuing a permit for disturbance take of eagles, is not expected to interfere with cultural practices and ceremonies related to eagles or to affect Native Americans' ability to obtain or use eagle feathers. Moreover, the Service requests any eagle feathers that are found be sent to our repository and, if in good condition, will be made available for these practices. Therefore, we do not anticipate any adverse effect on cultural resources from the Proposed Action.

Degree of the Effects

We have considered the following in evaluating the degree of the effects (40 CFR 1501.3(b)(2)), as appropriate, of the Proposed Action:

1) Both short- and long-term effects.

Issuance of an eagle take permit for the Project does not set precedent for, or automatically apply, to other eagle take permit applications the Service is reviewing or could review in the future. Each permit request will be evaluated on a case-by-case basis. Therefore, the Proposed Action does not establish precedents for future actions or represent a decision in principle about a future action. Moreover, this Project will not limit the Service's discretion when processing future eagle take permit applications under the Eagle Act's permitting regulations.

The analyses in the EA considered effects to golden eagles at varying temporal scales and considered effects to both local and regional golden eagle populations.

Short-Term Effects. Under the Proposed Action, issuance of an eagle take permit would authorize disturbance take of up to eight golden eagle breeding pair territories, which currently contain 14 nests, for 24 years. However, as described in the EA, the Applicant will implement measures to minimize disturbance to the eagles and decrease the chance of take and will fully offset the estimated take with compensatory mitigation. Analyses provided in the EA indicate the authorized take will have no significant effect on the local eagle population, and as the take will be fully offset with compensatory mitigation, the take will also have no significant effect on regional eagle populations.

Long-Term Effects. Despite disturbance to the eagle pairs the project activities are not expected to have long-term effects to eagles as no golden eagle nests would be physically removed because of the Proposed Action, and the take will be fully offset with compensatory mitigation.

The analyses in the Service's PEIS on issuing incidental eagle take permits provides information and greater certainty in understanding the risks and effects to eagles of issuing incidental eagle take permits now and into the future. Furthermore, surveying and monitoring of eagles that would be required under the Proposed Action provides information and increased certainty in our future assessments of risk to eagles from similar projects and human activities.

2) Both beneficial and adverse effects.

Beneficial Effects. As described in the EA, the Proposed Action includes power pole retrofitting as mitigation for take of eagles. Such retrofits are anticipated to protect eagles from electrocution. As the number of retrofits to be done for mitigation is calculated at a 1.2 to 1 ratio, these avoided eagle electrocutions will more than offset Project-related take of eagles, thereby benefiting the eagle population as a whole. Pole retrofits are also expected to benefit bald eagles and other raptors that may be susceptible to electrocution. Required monitoring of eagle territories and nesting will also be beneficial as it will support the Service's understanding of impacts from similar projects and human activities in the vicinity of nesting golden eagles. Furthermore, issuance of an incidental eagle take permit will allow the Applicant to operate in compliance with the Eagle Act.

Adverse Effects. As described in the EA, under the Proposed Action the Applicant would implement conservation measures to minimize the risk to eagles. However, loss of annual productivity of up to eight golden eagle breeding pairs, including 14 nests currently associated with the eight territories, in the vicinity of Project activities may occur due to disturbance from these activities over the 24 years of the Project. The Applicant will offset this eagle take through compensatory mitigation. This will ensure that the impacts of issuing an eagle take permit on the local and regional golden populations will not be significant.

3) Effects on public health or safety.

The Proposed Action would include mitigating eagle take by retrofitting power poles to prevent eagle electrocutions. As eagle and other raptor electrocutions on power poles can start fires, decreasing eagle and other raptor electrocutions could benefit human safety by reducing fire risk.

4) Effects that would violate Federal, State, Tribal, or local law protecting the environment.

The Proposed Action, issuance of an incidental take permit under the Eagle Act, does not violate any known Federal, State, Tribal, or local law or requirement imposed for the protection of the environment. In addition, the Proposed Action is consistent with applicable Eagle Act, Migratory Bird Treaty Act, and ESA regulations, policies, and programs.

Finding of No Significant Impact

The Service's Migratory Bird Program concludes, based on the analyses outlined in the EA and the information provided above, that the Proposed Action would not cause significant effects on the environment based on criteria established by regulations, policy, and analysis. We conducted analyses of effects at the Project, local area eagle population, and regional Eagle Management Unit scales, as well as the degree of these effects. The selected Proposed Action is unlikely to have significant impacts on eagles because a significant population-level effect for golden eagles is not expected, all reasonably foreseeable take of golden eagles will be fully offset, cumulative effects do not exceed levels deemed to be incompatible with the preservation of eagle populations, and the Proposed Action meets the Eagle Act's preservation standard and all regulatory requirements (16 U.S.C. §§ 668-668d, 50 CFR § 22.6, 50 CFR § 22.80).

Based on the findings discussed herein, we conclude that the Proposed Action is not a major federal action and will result in no significant impacts to the environment, individually or cumulatively with other actions in the general area. No environmental effects meet the definition of significance in 40 CFR 1501.3. Therefore, preparation of an EIS to further analyze possible effects is not required pursuant to NEPA Section 102(2)(c), and our environmental review under NEPA is concluded with this finding of no significant impact.

Daniel Blake
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U.S. Fish and Wildlife Service

References

- 16 United States Code (U.S.C.) § 668. Title 16 - Conservation; Chapter 5a - Protection and Conservation of Wildlife; Subchapter II - Protection of Bald and Golden Eagles; Section (§) 668 - Bald and Golden Eagles. Available online: <http://uscode.house.gov>
- 40 Code of Federal Regulations (CFR) § 1508.27. Title 40 - Protection of Environment; Chapter V - Council on Environmental Quality; Part 1508 - Terminology and Index; Section (§) 1508.27 - Significantly. Available online: <https://www.ecfr.gov>
- 42 United States Code (U.S.C.) §§ 4321-4347. Title 42 - the Public Health and Welfare; Chapter 55 - National Environmental Policy; Subchapters I (Policies and Goals) and II (Council on Environmental Quality); Sections (§§) 4321-4347. Available online: <http://uscode.house.gov>
- 43 Code of Federal Regulations (CFR) 46. 2008. Title 43 - Public Lands: Interior; Part 46 - Implementation of the National Environmental Policy Act of 1969. 43 CFR 46. [73 Federal Register (FR) 61314, October 15, 2008, unless otherwise noted.]. Available online: <http://www.gpo.gov/fdsys/pkg/CFR-2011-title43-vol1/pdf/CFR-2011-title43-vol1-part46.pdf>
- 50 Code of Federal Regulations (CFR) § 13.21. Title 50 - Wildlife and Fisheries; Chapter I - United States Fish and Wildlife Service, Department of the Interior; Subchapter B - Taking, Possession, Transportation, Sale, Purchase, Barter, Exportation, and Importation of Wildlife and Plants; Part 13 - General Permit Procedures; Section (§) 13.21 – Issuance of permits. Available online: <https://www.ecfr.gov>
- 50 Code of Federal Regulations (CFR) § 22. Title 50 - Wildlife and Fisheries; Chapter I - United States Fish and Wildlife Service, Department of the Interior; Subchapter B - Taking, Possession, Transportation, Sale, Purchase, Barter, Exportation, and Importation of Wildlife and Plants; Part 22 - Eagle Permits. Available online: <https://www.ecfr.gov>
- 81 Federal Register (FR) 91494. 2016. Eagle Permits; Revisions to Regulations for Eagle Incidental Take and Take of Eagle Nests. Vol. 81, No. 242. December 16, 2016. pp 91494-91554. Available online: <https://www.federalregister.gov/>
- Bureau of Land Management (BLM). 2023. Goldrush Mine Project Final Environmental Impact Statement. DOI-BLM-NV-B010-2021-0006-EIS. October 2023.
- U.S. Fish and Wildlife Service (USFWS). 2013. Eagle Conservation Plan Guidance. Module 1 – Land-based Wind Energy, Version 2. U.S. Fish and Wildlife Service Division of Migratory Bird Management. April 2013. Available online: <https://www.fws.gov/migratorybirds/pdf/management/eagleconservationplanguidance.pdf>
- U.S. Fish and Wildlife Service (USFWS). 2016. Programmatic Environmental Impact Statement for the Eagle Rule Revision. December 2016. Available online: <https://www.fws.gov/migratorybirds/pdf/management/FINAL-PEIS-Permits-to-Incidentally-Take-Eagles.pdf>

Environmental Assessment

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This document is a working draft. We anticipate it will evolve and improve over the course of applying it to tier from the Programmatic Environmental Impact Statement. Accordingly, the contents of these instructions should not be viewed as binding or official U.S. Fish and Wildlife Service policy.

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1.0 Introduction

This Environmental Assessment (EA) has been prepared to analyze the environmental consequences of the U.S. Fish and Wildlife Service (Service) issuing an incidental take permit for the take of golden eagles (*Aquila chrysaetos*) to the Applicant, Nevada Gold Mines LLC (NGM), associated with their proposed Goldrush Mine Project (Project) pursuant to the National Environmental Policy Act (NEPA) (42 United States Code [U.S.C.] §§ 4321–4347). Issuance of an eagle take permit by the Service for take that is incidental to otherwise lawful activities under the Bald and Golden Eagle Protection Act (Eagle Act) (16 U.S.C. §§ 668–668d and 50 Code of Federal Regulations [C.F.R.] §§ 22.80¹) constitutes a discretionary federal action that is subject to NEPA. This EA assists the Service in ensuring compliance with NEPA and in making a determination as to whether any significant impacts could result from the analyzed actions that would require preparation of an Environmental Impact Statement (EIS). This EA evaluates the effects of alternatives for the Service’s decision whether to issue an eagle take permit.

The Eagle Act authorizes the Service to issue eagle take permits only when the take is compatible with the preservation of each eagle species, defined as “consistent with the goals of maintaining stable or increasing breeding populations in all eagle management units and the persistence of local populations throughout the geographic range of each species” (50 CFR § 22.6).

The Applicant is requesting Eagle Act take coverage for the development of a new underground mine, as authorized by the Bureau of Land Management (BLM) Battle Mountain District Office. Proposed facilities at the Project would include an underground mine and surface support features; a dewatering system, including rapid infiltration basins; two new powerlines; and continued surface and underground exploration. The Applicant’s Eagle Conservation Plan (ECP) (**Appendix A**) is the foundation of the application from NGM.

The Applicant is requesting a permit for reoccurring disturbance to and loss of annual productivity from eight golden eagle breeding pairs, encompassing 14 known nest locations associated with the eight territories, over the 24-year life of the Project. This EA evaluates whether issuance of this incidental eagle take permit would have significant impacts on the existing human environment. “Significance” under NEPA is defined by regulation at 40 CFR 1508.27 and requires the NEPA analysis to take into account the short- and long-term considerations of both the context of the Project and its intensity.

This proposal conforms with, and carries out, the management approach analyzed in, and adopted subsequent to, the Service’s Programmatic Environmental Impact Statement (PEIS) for the Eagle Rule Revision, December 2016 (USFWS, 2016a). Project-specific information not considered in

¹. Effective February 7, 2022, 50 CFR § 22.26 was renumbered to 50 CFR § 22.80 (87 Federal Register 876, Migratory Bird Permits: Administrative Updates).

the PEIS has been considered in this EA as described below. Based on this Project-specific analysis and application of the criteria provided in the PEIS, the Service has determined that an EA is the appropriate level of review.

1.1 Purpose and Need

The Service's purpose in considering the Proposed Action is to fulfill their authority under the Eagle Act (16 U.S.C. §§ 668–668d) and its regulations (50 CFR § 22). Applicants whose otherwise lawful activities may result in take of eagles can apply for eagle incidental take permits so that their projects may proceed without potential violations of the Eagle Act. The Service may issue eagle take permits for eagle take that is associated with, but not the purpose of, an activity. Such permits can be issued by the Service when the take that is authorized is compatible with the Eagle Act preservation standard; it is necessary to protect an interest in a particular locality; it is associated with, but not the purpose of, the activity; and it cannot be practicably avoided (50 CFR § 22 and 81 Federal Register 91494).

The need for this action is a decision on an eagle incidental take permit application from NGM. The decision must comply with all applicable regulatory requirements and be compatible with the preservation of eagles.

1.2 Authorities

Service authorities are codified under multiple statutes that address management and conservation of natural resources from many perspectives, including but not limited to the effects of land, water, and energy development on fish, wildlife, plants, and their habitats. This analysis is based on the Eagle Act (16 USC §§ 668–668d) and its regulations (50 CFR § 22). The PEIS (USFWS, 2016a) has a full list of authorities that apply to this action (USFWS, 2016a: Section 1.6, pages 7–12), which are incorporated by reference here.

1.3 Background

In June 2021, NGM submitted the Goldrush Mine Plan of Operations and Reclamation Permit Application (Plan) (NVN-97532) to the Mount Lewis Field Office of the Battle Mountain District, BLM. Under the Plan, NGM would construct, operate, reclaim, and close a new underground mining Project within the 19,871-acre Plan boundary in the Cortez Mining District of Lander and Eureka counties, Nevada (**Figure 1**). The Goldrush Mine is located approximately 30 miles south of Beowawe, Nevada, in both Lander and Eureka counties, Nevada, on public land managed by the BLM and private land. The Project can be accessed from Interstate 80 by taking Exit 261 toward Beowawe/Crescent Valley and following Nevada State Route 306 for approximately 43 miles, then turning south on Cortez Canyon Road (County Road 225) and traveling approximately 20 miles to the Project. The Project is located in the Cortez Mountains with elevations ranging from 4,744 feet to 9,135 feet above mean sea level.

Most of the Project area is within other existing exploration and mine plans previously approved by the BLM and includes facilities and surface disturbance associated with the authorized Horse Canyon Mine Plan (NVN-66896), Horse Canyon/Cortez Unified Exploration Project Plan (N-66621), West Pine Valley Exploration Project Plan (NVN-77213), and Cortez Mine (NVN-67575). Portions of these existing plans would be incorporated into the new Goldrush Mine. The Project would create an additional 1,626 acres of new surface disturbance on public land administered by the BLM, including approximately 210 acres of exploration disturbance that could occur anywhere within the proposed Goldrush Mine Plan boundary. In addition, approximately 1,027 acres of existing authorized disturbance would be within the Project footprint, and approximately five acres of existing authorized disturbance would be reclassified as part of the Project.

The proposed underground mining and surface support activities for the Goldrush Mine would include a materials handling system for transporting ore and waste rock from the underground workings to the surface and for transporting aggregate and supplies to the underground workings and surface backfill plant; a dewatering system including wells, pipelines and pipeline corridors, and rapid infiltration basins; a contact water pipeline; ventilation raises; a shotcrete/cemented rockfill plant and secondary cemented rockfill plant; two new power lines including a 120-kV power line with two switching stations and a 13.8-kV power line; new ancillary surface facilities including bulk material storage, access roads, power supply, stormwater controls, laydown and parking areas, lighting, growth media stockpiles, dewatering and monitoring wells, gravel pit expansion, potable water and septic systems, dry facilities (change rooms), service boreholes for electrical and fuel delivery, a fire suppression system, water truck refill stations, emergency helipads, fencing, and modular information technology and communications buildings; dual use of authorized facilities within the close-by Cortez Mine Plan boundary; and continued surface and underground exploration activities. No surface blasting would occur at the Goldrush Mine Project. Underground mining activities would require subterranean blasting techniques, which would include monitoring with blasting seismographs, and using acceptable vibration standards and techniques to predict and control blast vibrations that reduce the risk of off-site damage.

Over the 10 years of surveys conducted in the area, 81 raptor nests comprising 38 territories have been documented within a 10-mile radius of the Goldrush Mine Plan boundary (study area) (**Figure 2**). Fourteen golden eagle nests (FC-01, FC-08, FC-09, HC-02, HC-03, HC-08, MC-01, MC-02, MT-01, MT 02, MT-03, WC-02, WC-03, and WC-04) constituting eight individual golden eagle territories have been documented within one mile of the proposed Project surface disturbance and are therefore proposed for disturbance take. The Project could have an impact to the eight golden eagle breeding pairs through the presence of mining and exploration activities in close proximity to their nests, thus causing potential negative impacts to golden eagle breeding and nesting activities. The eight territories listed in **Table 1-1** with bold font and their associated nests are those subject to disturbance take under the Proposed Action. The applicable nests and territories are also shown on **Figure 3**.

Table 1-1 Goldrush Mine Project Golden Eagle Nest Territories Within One-Mile Radius of Proposed Surface Disturbance

Territory	Nest ID	Within One Mile of Proposed Surface Disturbance	Territory with Nest(s) Outside of One-Mile Radii	Nest Distance Specifics
1	FC-01	Yes	No	The closest adjacent golden eagle nests are WC-04 at 1.2 miles to the southeast and two nests (i.e., MC-01 and MC-02) at 1.2 miles to the north. Based on the data gathered and the locations of the adjacent nests relative to the FC-01 nest, it is assumed this nest represents its own territory.
2	FC-08	Yes	Yes	The three nests in this territory are all within 1.1 miles of each other. FC-08 is the only nest within the plan boundary. The closest nest to this group is MC-01 located 1.0 mile to the southwest of FC-08 but this nest has not been found since the 2017 survey. The second closest nest, CM-01, is 1.2 miles to the northeast of FC-10. Both adjacent nests are thought to be associated with separate territories.
	FC-09	Yes		
	FC-10	No		
3	HC-02	Yes	No	The two nests are within 0.8 miles of each other and occur within the same drainage. The closest nest (HC-08) is 3.2 miles to the northwest of HC-02, and the next closest nest (WC-03) is 3.4 miles to the north; both are thought to be part of separate territories
	HC-03	Yes		
4	HC-08	Yes	No	The two nests are within 0.8 miles of each other. Both are in Horse/Mt. Tenabo area and are within one mile of disturbed disturbance. The closest nest (FC-01) is 1.4 miles to the northeast of MT-01. The next closest (MT-02) is 1.6 miles to the southwest of MT-01.
	MT-01	Yes		
5	MC-01	Yes	No	The two nests are within 0.25 mile of each other and occur within the same drainage. The closest nest (FC-08) is 1.0 mile to the north of MC-01, the next closest nest (MC-3) was 1.1 miles from MC-02.
	MC-02	Yes		
6	MT-02	Yes	No	The closest nest (MT-03) is 1.5 miles to the north, and the next closest (MT-01) is 1.6 miles to the northeast. MT-02 and MT-01 have been in-use simultaneously by golden eagles; and thus, are assumed to be separate territories. There is insufficient data to justify associating this nest with the adjacent nest to the north (MT 03), which is 1.5 miles away.

Territory	Nest ID	Within One Mile of Proposed Surface Disturbance	Territory with Nest(s) Outside of One-Mile Radii	Nest Distance Specifics
7	WC-02	Yes	No	These nests are within 0.1 mile of each other and have alternated breeding effort with nesting golden eagles. The closest nest (WC-04) is 0.4 mile to the west of this pair and has twice been used simultaneously with nests WC-02 and WC-03. The next closest is 1.7 miles to the northwest (FC-01) and is thought to be associated with a separate territory given the distance and site topography.
	WC-03	Yes		
8	WC-04	Yes	No	WC-04 is 0.4 mile to the west of WC-02 and WC-03. WC-04 has twice been simultaneously in-use by nesting golden eagles with these two adjacent nests (WC-02 and WC-03) confirming territory 8 as separate from territory 7. The next closest nest (FC-01) is 1.2 miles to the northwest.

The study area consists of various rock outcrops and pit highwalls that are identified as potential eagle nesting areas. Shrub communities north of the Project and in valleys surrounding the Project provide valuable foraging habitat. Limited water sources and very little riparian habitat are present in the study area.

1.4 Scoping, Consultation, and Coordination

This EA incorporates by reference the scoping performed for the PEIS (USFWS, 2016a: Chapter 6, page 175). The EA will be made public on the Service's website (<https://www.fws.gov/library/collections/pacific-southwest-region-nepa-documents-eagle-permits>).

1.5 Tribal Coordination

Tribal participation is an integral part of the NEPA and National Historic Preservation Act (NHPA) process, as well as a key component of determining whether to issue an eagle take permit. Cultural and religious concerns regarding eagles were analyzed in the PEIS, and tribal consultation was conducted for the PEIS (USFWS, 2016a). The PEIS (USFWS, 2016a) identified tribal coordination as an important issue for subsequent analysis, given the cultural importance of eagles to the tribes. In accordance with Executive Order 13175, Consultation and Coordination with Indian Tribal Governments (65 Federal Register 67249, November 9, 2000), NHPA Section 106 (36 CFR § 800), and the Service's Native American Policy, the Service consults with Native American tribal governments whenever actions taken under the authority of the Eagle Act may affect tribal lands, resources, or the ability to self-govern. This coordination process is also intended to ensure compliance with the American Indian Religious Freedom Act.

To notify Tribes regarding potential issuance of the permit, the Service sent letters to 14 federally recognized tribal governments within 109 miles (the natal dispersal distance of golden eagles, thought to adequately define the species local area population [LAP]) of the Project, informing them of the received permit application and the preparation of the EA, and offering the opportunity for formal consultation regarding potential issuance of the permit. Two tribes responded with correspondence dated February 21, 2023 and March 16, 2023. One tribe requested an informal meeting to discuss the permit application and terms of the Project. The meeting occurred via video-call on March 27, 2023. Based on discussions during that call the tribal Chairwoman determined formal Government-to-Government consultation was not necessary. The second tribe expressed the cultural and religious significance of eagles to their community and requested information on the compensatory mitigation associated with an incidental take permit. The Service responded with a letter dated April 20, 2023, explaining the mitigation process and re-emphasizing the opportunity to meet or enter into formal consultation. There was no additional correspondence received from these two tribes and the Service received no responses from any of the other Tribes contacted. In addition, comments from tribes are also encouraged and welcomed during the 30-day public posting of the EA.

2.0 Proposed Action and Alternatives

In this analysis, and in consideration of take authorization to the Applicant, each incident of take is expected to be in the form of disturbance to a golden eagle breeding pair resulting in loss of breeding productivity for a single breeding season for the single golden eagle breeding pair. Take that may result in injury or mortality of golden eagles is not expected or would not be authorized under this permit.

2.1 Proposed Action

Under the Proposed Action, the Service proposes to issue an incidental eagle take permit, with associated conditions, to the Applicant for the reoccurring disturbance to and loss of annual productivity of eight golden eagle breeding pair territories each year, as allowed by regulation. The duration of the permit would be up to 24 years, during which the Project's eagle take and take authorization would be re-evaluated at five-year intervals. Unless the Service determines any lack of nesting and/or loss of productivity is definitively caused by other means, all lack of nesting and/or loss of productivity of up the eight golden eagle breeding pair territories would be attributed to disturbance from the Project's activities.

Under this alternative, all monitoring and adaptive management measures, minimization measures, and detection and reporting measures outlined in **Section 2** would be permit requirements.

The Applicant would implement all measures required by other agencies and jurisdictions to conduct the activity at this site including Environmental Protection Measures (EPMs) and the conservation commitments described in the Applicant's ECP.

2.1.1 *Compensatory Mitigation*

Compensatory mitigation would be conducted within the Pacific Flyway Eagle Management Unit (EMU). The Applicant would provide compensatory mitigation at the required 1.2:1 ratio by retrofitting electric utility poles, as discussed in the 2016 PEIS. The intent would be to minimize the potential for golden eagle electrocutions and ensure that the effects of golden eagle incidental take are offset at the EMU population level. The amount of compensatory mitigation required for the lost productivity has been determined through the Service's Golden Eagle Resource Equivalency Analysis (REA) (USFWS, 2013). The permit would require mitigation for the annual disturbance take of eight golden eagle breeding territories for up to 24 years at the Goldrush Mine. However, the mitigation could be paid in five-year cycles, with the first payment occurring within 30 days of permit issuance.

Long-term eagle incidental take permits require the USFWS to conduct five-year reviews. During the 5-year review process, the USFWS would evaluate if take occurred for each known breeding territory in each year. After assessing how many take incidents occurred during the first five years,

the USFWS would then evaluate how much compensatory mitigation might be either credited or owed for the next five-year cycle, or remainder of the permit duration.

Currently, the estimated number of retrofits for the first five-year cycle range from 387 to 889 poles, depending on the type and duration of the retrofits. The Service and NGM would continue to consult and evaluate the amount of mitigation owed or credited throughout the permit authorization period.

2.1.2 Adaptive Management

Continued monitoring will inform the Applicant on the status of existing nests as well as if new nests are being constructed near the Project and its associated activities. First, if new nests are encountered within one mile of mining activity, either incidentally by mine staff/contractors or during annual surveys, the Applicant would notify the Service within 72 hours. Coordination would then occur to determine if avoidance (no surface-disturbing activities within one mile of an in-use/occupied nest during breeding season) and/or mitigation are required, based on permit conditions, and site specifics. If the nest is associated with the breeding pair covered under the permit, then no further action would be necessary, as the nest would be including in the breeding territory of that pair. Also, if monitoring determines that the applicant is approaching their take permit limits, adaptive management would be implemented. First, the applicant would apply avoidance buffers on in-use/occupied nests to prevent incidental take. If avoidance is not practicable, the applicant may request a permit amendment from the Service. Additionally, at the five-year review of the permit, the Service may consider additional adaptive management strategies if necessary.

2.1.3 Eagle Nest Monitoring

Golden eagle surveys have been conducted annually in the vicinity of the Plan boundary since 2013. Surveys focus on completing a thorough inventory of nests within a recommended 10-mile radius and capturing information regarding territory breeding effort, nest use rate, productivity, and success. At least two surveys are conducted annually during the golden eagle breeding season for the Project (January 15-July 31), with the surveys conducted at least one month apart. Early season surveys are usually conducted between January to mid-March, with follow-up surveys ideally conducted between March to mid-April. A final ground-based survey may also be conducted late in the breeding season to assess golden eagle breeding success. The Project area eagle nest monitoring will inform the Applicant and agencies when golden eagle nests are in-use in the Project area in order to validate the number of take incidents that occur and ensure compliance with the permit authorization. Monitoring associated with the permit would be conducted as outlined in Table 2 1 and by a third-party monitor as required by regulations.

2.2 Alternative 1: No Action Alternative

Under the No Action Alternative, the Service would take no further action on NGM's permit application. However, the Service must act on the permit application, determining whether to deny or issue the permit. Accordingly, this alternative is considered because Service policy requires evaluation of a No Action Alternative, and it provides a clear comparison of any potential impacts to the human environment from the Proposed Action.

The No Action Alternative in this context analyzes predictable outcomes of the Service not issuing a permit. Under the No Action Alternative, the Project would likely be constructed and operate without an eagle take permit being issued. Thus, for purposes of analyzing the No Action Alternative, the Service assumes that the Applicant will implement all measures required by other agencies and jurisdictions to conduct the activity at this site, including Applicant-Committed Environmental Protection Measure (ACEPMs) outlined in the Final EIS (BLM, 2023), but the conservation measures proposed in the eagle incidental take permit application would not be required. The Applicant may choose to implement some, none, or all of those conservation measures. Under this alternative, it is assumed that the Applicant would take reasonable steps to avoid taking golden eagles, but NGM would not be protected from enforcement for violating the Eagle Act should disturbance and loss of breeding productivity of a golden eagle pair occur.

2.3 Common to All Alternatives

This section describes elements of the Proposed Action and the NoAction Alternative that are the same. Under the No-Action Alternative, these elements are voluntary or required by other authorizations or entities, however if an incidental eagle take permit is issued, these measures would become requirements of this permit.

2.3.1 *Monitoring*

The Applicant will implement all measures required by other agencies and jurisdictions to conduct the activity at this site, including ACEPMs. The applicant will implement all conservation measures and commitments summarized below. Monitoring will be implemented over the life of the Project. **Table 2-1** presents a summary of the EPMs with monitoring and a schedule for implementation per coordination with the Service, which have been revised since the BLM's finalization of the Project's NEPA document (BLM, 2023).

Table 2-1 Goldrush Mine Golden Eagle EPM Monitoring Schedule

Number	Conservation Measure	Duration
EPM 1	Territory occupancy ground surveys will be conducted for nests within the eight golden eagle territories within one-mile of surface disturbance from the Goldrush Mine that are part of the disturbance take permit in January or mid-March (i.e., the preferred survey window) to assess golden eagle territory occupancy and document in-use nests as appropriate. Every attempt will be made to conduct the ground surveys mid-to-late-February. NGM will coordinate with the USFWS prior to the ground surveys occurring to communicate existing conditions on the ground that may prohibit ground surveys to some nest sites (e.g., heavy snow, access concerns, golden eagle disturbance, etc.). This communication prior to ground surveys being conducted will allow for flexibility in the monitoring requirements based on conditions at the site during the preferred survey window. NGM would coordinate with the USFWS and the BLM to discuss monitoring as the season progresses and assess if monitoring requirements need to be modified based on site conditions, access concerns, or potential disturbance to nesting golden eagles. Ground survey observations will focus in the areas around nests, nest cliffs, and other suitable nesting habitat. Specific observation criteria used for the ground survey establishing golden eagle territory occupancy include: a. An adult eagle within 500 meters of a nest within the territory, when the bird is clearly in view of the nest, and when the eagle's presence is clearly not a rapid pass-over of the nest. b. Two adults, or an adult and a sub-adult bird paired within the territory. c. Reproductive or territorial behavior within the territory: i. Courtship behavior, undulating flight, copulation ii. Territorial defense iii. Nest building behaviors (stick carrying, nest maintenance). A follow up ground survey will be conducted for those nests that were determined to contain breeding attempts during the above discussed surveys. Success at golden eagle nests is determined by nestlings greater than 51 days old, which is primarily late-May and peaking mid-June. Aerial surveys will be conducted later during the breeding season following Goldrush Mine Conservation Measure 3 (CM-3) and complying with the protocol outlined in Pagel et al. (2010). Every attempt will be made to conduct the first aerial survey in mid-March and the follow up aerial survey in mid-April.	Annually until Permit Expiration.
EPM 2	If new nests are identified within the territories that are part of the disturbance take permit, NGM will coordinate with the USFWS regarding the new nest, and these new nests will be monitored as discussed above, concurrently with the other nests within the territories that are part of the disturbance take permit. Goldrush Mine CM-3 would apply to nests within a territory that have a disturbance take permit, and in compliance with Pagel et al (2010) protocol. If new nests are identified within one mile of disturbance, or two miles of blasting, that are outside of a territory with a disturbance take permit, NGM will inform and coordinate with the USFWS and the BLM regarding the new nest sites that are outside the territories with a disturbance take permit. Goldrush Mine CM-1 and Goldrush Mine CM-3 would apply for new nests identified outside of a territory with a disturbance take permit, in coordination with USFWS and the BLM.	Annually until Permit Expiration.

Number	Conservation Measure	Duration
	The golden eagle breeding season for Goldrush Mine Project is considered January 15 through July 31. Unless a disturbance take permit is in place, golden eagle nests with concern for potential disturbance should be considered not in-use for a given breeding season if nests are confirmed not in-use on April 15 or later. Prior to April 15, nests are considered potentially in-use unless an alternate nest within the same territory is already confirmed in-use. Spatial disturbance buffers (one-mile for surface disturbance or two-miles for blasting) would be adhered to until nests are confirmed not in-use, after July 31, or 4 weeks after nestlings fledge (if monitoring confirms approximate fledging date).	

Source: Stantec, 2023

2.3.2 *Minimization Measures*

The Applicant is currently implementing the following measures that minimize impacts to golden eagles (Stantec, 2023):

- NGM will continue its mandatory employee education program for all personnel to minimize wildlife/vehicle-related impacts during operations.
- NGM currently has a monitoring and reporting system for incidents related to wildlife fatality. Any incident that results in wildlife fatality or death, including golden eagles, must be reported immediately and included in quarterly NDOW reporting.
- Although not specific to golden eagle protection, the implementation and continuation of the following plans will continue to benefit golden eagle conservation: 1) Noxious Weed Control Plans; 2) Fire Control Plans; 3) Solid and Hazardous Waste Management Plans; and 4) Reclamation Plans.
- Speed limits of not more than 35 miles per hour will be posted on the Horse Canyon Haul Road to minimize the potential for fugitive dust emissions, to protect wildlife and livestock, and to maintain operational safety (BLM, 2023).

Additionally, NGM currently employs conservation measures associated with current authorized activities at the Cortez Mine and has committed to continuing to employ the relevant measures at the Goldrush Mine Project. Applicant-committed conservation measures that contribute to the conservation of golden eagles at the Goldrush Mine Project are provided in **Table 2-2**. As detailed in Section 2.1.3, golden eagle nest monitoring will occur during the golden eagle nesting season that is recognized by the Service for the Goldrush Mine Project as January 15 through July 31; this is clarified in the table below for CM-1 and CM-3.

Table 2-2 Existing NGM Conservation Measures for Implementation at the Goldrush Mine Project

Number	Conservation Measure	Sources
CM-1	In the event that initiation of the Project should occur during the raptor nesting season (March 1 through July 31, April 1 through July 31 for burrowing owls, and January 15 through July 31 [for the Goldrush Mine Project] for golden eagles), a raptor survey will be conducted. Project-related disturbance for a specific location will be conducted within 14 days of the survey, or another survey will be conducted. If active nests are located, or if other evidence of nesting (i.e., mated pairs, territorial defense, carrying nesting material, transporting food) is observed, a protective buffer (the size depending on the habitat requirements of the species and location of the nest) will be established around the nests following consultation with the BLM resource specialist. No construction will occur within the avoidance buffer until the birds are no longer actively breeding or rearing young, or until the young have fledged.	BLM, 2008a; updated in BLM, 2015; BLM, 2019; Stantec, 2019b
CM-2	To protect nesting birds, removal of migratory bird habitat on currently undisturbed lands in the NGM Goldrush Operations Area will be avoided to the extent possible between March 1 and July 31. Should removal of habitat be required during this period, NGM will coordinate with the BLM and the Nevada Department of Wildlife (NDOW) to conduct migratory bird nesting surveys and implement appropriate mitigation, such as buffer zones around occupied nests, as needed. Project-related disturbance for a specific location will be conducted within 14 days of the survey, or another survey will be conducted.	BLM, 2008a; updated in BLM, 2015; BLM, 2019; Stantec, 2019b
CM-3	Raptor surveys will be conducted annually during the raptor breeding season (March 1 through July 31, January 15 through July 31 for the Goldrush Mine Project for golden eagles) utilizing the methods outlined in Pagel et al. (2010). The survey area will include the NGM Cortez Mine and Goldrush Mine Project Areas plus a 10-mile buffer. Two rotor-wing (up to three helicopter) aerial surveys and subsequent ground surveys of occupied nests will be conducted. The annual survey report will be provided to the BLM.	BLM, 2015; BLM, 2019
CM-4	Transmission lines will be designed and constructed in accordance with applicable regulations to minimize raptor electrocution and collision potential. To minimize the collision potential for foraging raptors and other birds, standard safe designs as outlined in Reducing Avian Collisions with Power Lines (APLIC, 2012) will be incorporated, as applicable. To minimize the potential for electrocution of raptor species attempting to perch on the lines in areas of identified avian concern, standard safe designs as outlined in Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006 (APLIC, 2006) and Avian Protection Plan Guidelines (APLIC and USFWS, 2005) will be incorporated, as applicable.	BLM, 2008a; updated in BLM, 2015; BLM, 2019; Stantec, 2019b
CM-5	To minimize potential mine-related effects to perennial surface waters, the site-specific contingency mitigation measures developed for identified perennial waters within the currently authorized operations' modeled groundwater drawdown area will be implemented if monitoring data indicate that an observed reduction in flow is attributable to mine-induced groundwater drawdown.	BLM 2011a; BLM 2011b; updated in BLM, 2019
CM-9	NGM will voluntarily coordinate with the BLM and NDOW to develop new wetland/riparian areas and/or enhance existing wetland/riparian areas at off-site locations to address the direct loss of wetland/riparian	BLM, 2008b; updated in BLM, 2019 Stantec, 2019b

Number	Conservation Measure	Sources
	vegetation. The loss of wetland/riparian vegetation will be replaced at a 2:1 ratio (i.e., for every acre of wetland/riparian vegetation removed or disturbed by mine development or groundwater drawdown, two acres of wetland/riparian vegetation will be created and/or enhanced). NGM in coordination with a BLM botanist and NDOW will identify appropriate wetland/riparian species to be seeded or transplanted in these locations. Alternately, local existing areas of wetland/riparian vegetation unaffected by mine-related groundwater drawdown will be identified in coordination with the BLM and NDOW for enhancement. Enhancement methods could include, but will not be limited to, the use of BLM-approved fencing to minimize livestock impacts, implementation of weed controls, and/or supplemental planting or seeding, as appropriate.	
CM-10	NGM will continue its mandatory employee education program for all personnel to minimize wildlife/vehicle-related impacts during operation.	BLM, 2008b; Stantec, 2019b

2.3.3 *Detection and Reporting Measures*

Eagle injuries, mortalities, and previously undocumented golden eagle nests may be detected through incidental observations by NGM personnel and contractors. To improve the probability that injuries and mortalities do not go undetected, NGM field staff will be advised to always remain alert for golden eagles within exploration areas and access roads. Any new nest site detection will also occur through incidental observations and any monitoring that occurs.

In the event that a new nest is detected within proximity to exploration activities, the NGM Environmental Department or designee will record the circumstances and conditions associated with the observation. Among the information recorded and reported to the Service will be the date and time of the detection, the Global Positioning System location (North American Datum 83), the status of the nest, and if possible, the species.

If NGM personnel or their contractors encounter a golden eagle injury or mortality within the Plan boundary, they must report the incident to the NGM Environmental Representative. Personnel must not handle dead or injured golden eagles unless specifically directed to do so by the Service. In the event of a golden eagle injury, NGM will notify the Service and NDOW immediately (the same business day), and in the event of mortality, notification will occur by the next business day.

2.4 Other Alternatives Considered but Not Evaluated in this Environmental Assessment

The Service considered an additional alternative to the Proposed Action, but concluded that this alternative did not meet the purpose and need underlying the action because it was not consistent with the Eagle Act and its regulations or did not adequately address the risk of take at the Project. Therefore, the Service did not assess the potential environmental impacts of this alternative. Below is a summary of the alternative considered but eliminated from further review.

2.4.1 *Alternative 2: Deny Permit*

Under this alternative, the Service would deny the permit application because the Applicant falls under one of the disqualifying factors and circumstances denoted in 50 CFR § 13.21, the application fails to meet all regulatory permit issuance criteria and required determinations listed in 50 CFR §22.80, or the Service determines that the risk to golden eagles is so low that a take permit is unnecessary.

Permit issuance regulations in 50 CFR § 13.21(b) set forth a variety of circumstances that disqualify an applicant from obtaining a permit. None of the disqualifying factors or circumstances denoted in 50 CFR § 13.21 apply to NGM. We next considered whether the Applicant meets all issuance criteria for the type of permit being issued. For eagle incidental take permits, those issuance criteria are found in 50 CFR § 22.80(f). NGM's application meets all the regulatory issuance criteria and required determinations (50 CFR § 22.80) for eagle take permits. When an applicant for an eagle incidental take permit is not disqualified under 50 CFR § 13.21 and meets all the issuance criteria of 50 CFR § 22.80, denial of the permit is not a reasonable option. Therefore, this alternative, denial of the permit, was eliminated from further consideration.

3.0 Affected Environment

This section describes the current status of the environmental resources and values that are affected by the Proposed Action and alternatives.

3.1 Golden Eagles

General information on the population trends, distribution, and habitat of golden eagles are detailed in the PEIS (USFWS, 2016a: Sections 3.3 and 3.4). This section more specifically describes the golden eagle population in the Project Area.

3.1.1 *Project Area Habitat*

Foraging Habitat

Vegetation communities in the study area have been mapped by the Southwest Regional Gap Analysis Project (SWReGAP) in land cover types for the study area (USGS, 2011). The SWReGAP mapping shows 27 vegetation communities occurring within the study area (**Table 3-1**). Golden eagle prey species, such as black-tailed jackrabbits (*Lepus californicus*), mountain cottontails (*Sylvilagus nuttallii*), larger diurnal rodents, and snakes are commonly found in many of the vegetation communities present in the Project Area.

Table 3-1 SWReGAP Vegetation Communities within the Study Area

Vegetation Community	Acres	Percent
Agriculture	673	0.15
Barren Lands, Non-specific	848	0.19
Great Basin Foothill and Lower Montane Riparian Woodland and Shrubland	1,019	0.23
Great Basin Piñon–Juniper Woodland	44,929	10.20
Great Basin Semi-Desert Chaparral	2	< 0.01
Great Basin Xeric Mixed Sagebrush Shrubland	41,886	9.51
Inter-Mountain Basins Big Sagebrush Shrubland	189,932	43.13
Inter-Mountain Basins Big Sagebrush Steppe	917	0.21
Inter-Mountain Basins Cliff and Canyon	4,600	1.04
Inter-Mountain Basins Greasewood Flat	32,740	7.44
Inter-Mountain Basins Mixed Salt Desert Scrub	18,050	4.1
Inter-Mountain Basins Montane Sagebrush Steppe	41,344	9.39
Inter-Mountain Basins Mountain Mahogany Woodland and Shrubland	454	0.10
Inter-Mountain Basins Playa	17,215	3.91
Inter-Mountain Basins Semi-Desert Grassland	8,186	1.86
Inter-Mountain Basins Semi-Desert Shrub Steppe	1,090	0.25
Inter-Mountain Basins Subalpine Limber-Bristlecone Pine Woodland	22	< 0.01
Invasive Annual and Biennial Forbland	3,374	0.77
Invasive Annual Grassland	13,264	3.01

Vegetation Community	Acres	Percent
Invasive Perennial Grassland	1,159	0.26
North American Arid West Emergent Marsh	39	0.01
Open Water	117	0.03
Recently Burned	12,489	2.84
Recently Mined or Quarried	5,917	1.34
Rocky Mountain Aspen Forest and Woodland	18	< 0.01
Rocky Mountain Subalpine Dry-Mesic Spruce-Fir Forest and Woodland	28	< 0.01
Rocky Mountain Subalpine Mesic Spruce-Fir Forest and Woodland	16	< 0.01
Total	440,327	100

Source: Stantec, 2023

Other habitat types that are believed to represent important golden eagle foraging habitats in the region include wetlands, natural water sources, and meadows. Wetlands and springs provide a reliable water source for eagle prey and, therefore, allow higher concentrations of eagle prey. There are multiple seeps, springs, stock troughs, and intermittent and ephemeral drainages throughout the study area. Meadow habitats, agricultural alfalfa pivots, and pastures in the study area support large populations of rodents and lagomorphs. These habitats occur at ranches in Crescent Valley, Grass Valley, and Pine Valley.

Nesting Habitat

Within the study area, various rock outcrops and mine highwalls were identified as areas with nesting golden eagles. Cliff and rock outcrops exist in the Shoshone Mountains to the west, the Cortez Mountains, which contain the Project Area, and the Toiyabe Mountains to the south. There are multiple open pits throughout the study area, primarily within the Cortez and Shoshone mountains.

Other Topographic Features Attractive to Eagles

Habitat features occurring in the vicinity of the Project that are attractive to eagles include the tops of slopes oriented perpendicular to prevailing winds or near ridge crests of cliff edges, mountainous areas that include ridgelines and slopes with a variety of aspects such that winds from multiple directions which are suitable for soaring, and saddles or low points on ridgelines or near riparian corridors which may serve as flight paths. Nearby perch and roost sites may also attract eagles.

3.1.2 Project Area Golden Eagle Population

The golden eagle nesting territories within the vicinity of the project area were delineated based on surveys conducted from 2013 to 2022 (Stantec, 2023), with all inventory and monitoring effects following golden eagle survey protocols accepted by the Service (Pagel et al., 2010). Over the 10

years of surveys, 83 golden eagle nest sites comprising 38 territories have been documented within 10 miles of the Goldrush Mine Plan boundary (**Figure 2**). **Appendix A** summarizes the golden eagle territories and breeding effort status within the vicinity of the project area.

3.1.3 *Territories Proposed for Take*

Territories within the Plan Boundary

Five known golden eagle territories overlap with the Plan boundary (**Figure 3**). There are 10 nest sites within these five territories (Nest IDs: FC-01, FC-08, FC-09, FC-10, HC-02, HC-03, HC-08, MT-01, MC-01, and MC-02), and all nests are located within, or within one mile of, the Plan boundary, with the exception of FC-10.

Territories outside of the Plan Boundary within One Mile of Proposed Surface Disturbance

Three known territories occur outside the Plan boundary but within one mile of proposed surface disturbance (**Figure 3**). There are four nest sites within the three territories (MT-02, WC-02, WC-03, and WC-04), and all are located within one mile of the Plan boundary.

Information regarding these eight territories proposed for take, and their associated nests, can be found in Appendix A.

3.1.4 *Project Golden Eagle Population Stressors*

Habitat

Reduction of habitat as a result of direct mining disturbance has the potential to impact golden eagles. Specifically, impacts to functional shrublands could influence prey populations and their availability to golden eagles, especially during the breeding season when adults are foraging routinely to provide adequate food for their young.

Mining Activities

Active mining operations in the vicinity include exploration, drilling, subterranean blasting, excavation, and hauling. Risks to golden eagles include unintentional disturbance from activity near nest sites, such as noise and visual irritation from mining and exploration activities and vehicular traffic on roads. Other risks include nesting on highwalls of active pits, which may cause nest abandonment due to the mining operations within the pit.

Mining processes and facilities that use hazardous materials and chemicals pose a risk to wildlife species, including golden eagles. NGM uses a variety of hazardous materials, such as fuels and reagents, in mining and processing activities. NGM has the appropriate permits, and Solid and

Hazardous Waste Management Plans in place to manage the transport and use of hazardous chemicals on site.

Utilities

Utility structures pose a risk to perching birds, including raptors such as golden eagles, and may cause mortality through accidental collisions and electrocutions. Larger birds that inhabit open habitat appear to be at greater risk for electrocution due to the lack of natural perches and nesting sites (APLIC and USFWS, 2005). Electrocution occurs when a bird completes an electric circuit by simultaneously touching two energized parts, or an energized part and a grounded part, of the electrical structure. Inadequate conductor and/or phase spacing may allow birds to bridge electrical parts, which results in electrocution. Birds of all sizes are at risk, especially on utility hardware such as transformers, which have many energized parts near one another (APLIC and USFWS, 2005). Risk for avian electrocution on distribution lines increases when the distance between conductors is less than the wingspan or height of a landing or perching bird, or hardware or equipment cases are grounded and near energized conductors, parts, or jumper wires (APLIC and USFWS, 2005). In order to reduce impacts, NGM has committed to designing and constructing transmission lines in accordance with applicable regulations to minimize raptor electrocution and collision potential, as outlined in **Section 2.3.3**.

Vehicle Collisions

Mobile equipment (i.e., vehicles) used in operations at the mine or traveling to or from the mine could strike and injure or kill wildlife. Road-killed wildlife may attract scavenging eagles, which in turn could be injured or killed by vehicle collision. In addition to the immediate removal of roadkill from roadways, NGM currently implements conservation measures associated with reducing road mortality risk, thus minimizing the potential for eagle mortality due to vehicle collision at the Goldrush Mine. Additional traffic controls can be implemented by NGM as necessary through direct communication regarding road hazards.

3.2 Bald Eagles

Bald eagles (*Haliaeetus leucocephalus*) are known to occur in the region, but no nests or individuals have been documented within the study area during all years that surveys have occurred. Therefore bald eagles are not expected to be affected by activities associated with the Project (BLM, 2023).

3.3 Migratory Birds

Effects to migratory birds have been analyzed in the PEIS (USFWS, 2016a). A variety of migratory birds have been identified in the Project Area; however, issuance of the proposed permit is not anticipated to affect one or more species of migratory birds. Additionally, NGM has ACEPMs to reduce potential impacts to migratory birds within the Plan boundary (BLM, 2023).

3.4 Species Listed under the Endangered Species Act

There are no federally threatened or endangered species listed under the Endangered Species Act of 1973 (ESA), as amended (16 U.S.C. §§ 1531–1544), or designated or potential critical habitat within the Plan boundary (BLM, 2023).

3.5 Cultural and Socioeconomic Interests

Bald and golden eagles are important symbols of U.S. history and are sacred to many Native American cultures. Some Native American cultures utilize eagles, eagle feathers, and other eagle parts for religious practices and cultural ceremonies. Outside of rituals and practices, wild eagles as live beings are deeply important to many tribes (Lawrence, 1990, as cited by USFWS, 2016a). Numerous tribes confirmed the importance of wild eagles during scoping and tribal consultation for the PEIS.

Two tribal governments contacted the Service regarding the potential issuance of the permit, as discussed in Section 1.5, one of which expressed the cultural and religious significance of eagles to their community and requested information on the compensatory mitigation associated with an incidental take permit. The Service responded to one tribe with written correspondence and engaged in informal meetings with the other, as detailed in Section 1.5; no further correspondence was received from any of the tribes regarding the proposed take permit. The Proposed Action or considered alternatives would not impact cultural or socioeconomic interests beyond the impacts already discussed in the PEIS. Therefore, cultural and socioeconomic interests have not been analyzed further in this EA.

3.6 Climate Change

Climate change was considered in the PEIS (USFWS, 2016a: Section 3.9, page 144) and is incorporated by reference here.

4.0 Environmental Consequences

This section summarizes the effects on the environment of implementing the Proposed Action or alternatives to the action. The discussion of overall effects to the environment of the eagle incidental take permit program is provided in the PEIS (USFWS, 2016a). This section of the EA analyzes only the effects that were not analyzed in the PEIS (USFWS, 2016a) that may result from the issuance of an eagle take permit for the Project.

4.1 Proposed Action

In determining the significance of effects of the Project on golden eagles, we confirmed the Proposed Action of issuing an eagle take permit for the take of golden eagles does not deviate from the analysis provided in the PEIS (USFWS 2016a) and the Service's 2016 report *Bald and Golden Eagles Population Demographics and Estimation of Sustainable Take in the United States, 2016 Update* (USFWS, 2016b). We also assessed Project-specific effects to eagles that were not covered in the PEIS analyses. These effects may occur at the project scale, at the local area eagle population scale, and/or at the regional EMU scale.

4.1.1 *Direct and Indirect Effects*

Golden Eagles

Under the Proposed Action, the Service is considering authorization for disturbance to and loss of annual productivity from breeding golden eagles in up to eight golden eagle territories each year over a 24-year period. The Proposed Action would permit the Project for 24 years with a re-evaluation occurring at each five-year interval during the life of the permit. The Project would have a direct impact to the golden eagles through the presence of mining and exploration activities in close proximity to their nests, thus causing potential negative impacts to golden eagle breeding and nesting activities. There are currently 14 nest sites, associated with eight unique golden eagle territories, within one mile of proposed Project activities. When considering the potential for effects to eagles from the Project, we also took into account the possibility for golden eagle pairs to build nests in new locations that may be both closer or farther away from Project activities, as well as the knowledge that eagle territory boundaries can be dynamic over time, with shifts in territory arrangement possible. Disturbance take authorization would only be necessary when breeding eagles have an in-use nest (see 50 CFR § 22.6 for "in-use nest" definition) within one mile of Project activities, as nesting eagles within this distance have increased likelihood of disturbance. The Proposed Action therefore includes conservative estimates for quantifying and authorizing potential take with the maximum amount of take that may occur in each eagle territory being analyzed. As such, the potential impacts of the Project are expected to include the disturbance take of up to eight breeding golden eagle pairs each year.

Disturbance of an occupied golden eagle territory is assumed to result in loss of annual productivity (i.e., number of young reared) from that territory. The Service uses an estimate of 0.59 golden eagle young fledged per occupied nesting territory per year (USFWS, 2016c) to estimate loss of annual productivity.

The Proposed Action incorporates measures to avoid and minimize eagle take to the maximum degree practicable, as required by regulation. These measures are outlined in Section 2.3.

Additionally, the Proposed Action incorporates adaptive management as described in Section 2.1.2. Also the ACEPMs, as outlined in the Final EIS (BLM, 2023), would continue to be implemented as permit stipulations to further reduce the risk of Project-related injury or mortality hazards to eagles within the Project boundary.

Along with the monitoring and minimization measures outlined in Section 2, the Applicant would provide compensatory mitigation to offset the expected take. The Service uses electric utility power pole retrofitting to offset authorized take of golden eagles. Electrocutions from power poles are known to be a major cause of eagle mortality. Power poles can be retrofitted by verified methods (such as insulating or covering electrical components or modifying pole elements to increase the distance between electrical components) to reduce the risk of electrocution to eagles, with the maintenance and efficacy of retrofits confirmed through post-installation inspections and monitoring. The effects of retrofitting power poles have been quantified “per eagle,” allowing use of the Golden Eagle REA to calculate the number of power pole retrofits needed to offset the authorized take of golden eagles (USFWS, 2018).

The Service’s REA was used (USFWS, 2018) to calculate the required compensatory mitigation to offset disturbance of eight breeding golden eagle territories for up to 24 years. Based on the updated Eagle Act permit regulations, a compensatory mitigation ratio of 1.2:1 is used. The 1.2:1 ratio for compensatory mitigation achieves a net benefit to golden eagle populations, ensuring that regional eagle populations are maintained consistent with the preservation standard of the Eagle Act (USFWS, 2016a).

As described in Section 2.1.1, the applicant would be providing compensatory mitigation in five-year intervals. Thus, the Service ran the REA to determine the number of power poles that would need to be retrofit for the first five-year cycle of the project. Incorporating the 1.2 to 1 compensatory mitigation ratio required under the Eagle Act regulations, the Applicant would need to retrofit approximately 387 to 889 power poles to offset the take of eight golden eagle breeding pairs over the first five years of the Project. The final number of poles retrofitted will depend on several factors, including the type and expected longevity of each retrofit once the actual poles have been identified. To complete the required compensatory mitigation, the Applicant would either work directly with a utility company to complete the required power pole retrofits, with Service approval of the developed plan; or would work with an in-lieu fee program to purchase

credits to fulfill the required retrofits to be completed. Additionally, the Service and NGM would continue to consult and evaluate the amount of mitigation owed or credited throughout the permit authorization period. Along with the benefit to eagles of reducing mortalities by electrocution, retrofitting of power poles to prevent eagle and other bird electrocutions also increases public safety by reducing the risk of wildfires. Bird electrocution events may ignite fires in the vegetation surrounding and below the site of electrocution, so decreasing electrocution risk also reduces the risk of fire.

As the implementation of compensatory mitigation would fully offset the estimated take for the Project and would provide additional net benefit to eagle populations, there would be no significant negative impacts to eagle populations from issuing an eagle take permit under the Proposed Action.

The Eagle Act regulations require compensatory mitigation to be conducted in the same EMU in which the take occurs (50 CFR § 22.80(c)(1)(iii)(B)). The Project is located in the Pacific Flyway EMU. The exact site of power poles to be retrofitted has not yet been determined but would be in the Pacific Flyway.

The Proposed Action meets the purpose and need, as it is consistent with the Eagle Act and its regulations and adequately addresses the risk of take at the Project.

Bald Eagles

No significant adverse effects are foreseen to bald eagles as a result of the Project (BLM, 2023). Although take of bald eagles is not expected to occur at this Project and take of bald eagles would not be permitted, bald eagles in the region may benefit from avoidance and minimization measures established to reduce the risk to golden eagles. Bald eagles may benefit from compensatory mitigation actions provided to offset the take of golden eagles under the Proposed Action.

Migratory Birds

Issuance of the Permit to the Project may provide benefits to migratory birds. In addition to project ACEPMs, power pole retrofits done as compensatory mitigation for the eagle take authorized under the Permit may minimize electrocution risk for raptors and other migratory birds, just as with eagles.

Impacts to migratory birds from the issuance of incidental eagle take permits were fully analyzed in the PEIS (USFWS, 2016a); no further adverse effects to migratory bird populations are expected as a result of the Project (BLM, 2023).

Species Listed under the Endangered Species Act

No species listed under the ESA (16 U.S.C. §§ 1531–1544) nor designated critical habitat were found to be present in or near the Project Area; therefore, disturbance and loss of species or

individuals listed under the ESA is not expected to result from the Project (BLM, 2023). The Service's decision regarding an eagle take permit would not alter the physical footprint of the Project; therefore, it would not alter the Project's impacts to any identified federally threatened or endangered species within the Plan boundary.

4.1.2 *Cumulative Effects*

The purpose of this cumulative effects evaluation is to identify situations where the golden eagle take proposed under the Proposed Action, combined with take from other present or foreseeable future actions and sources, may be approaching levels that are biologically problematic or that cannot reasonably be offset through compensatory mitigation. Effects of take may be cumulative at the Project scale, at the LAP scale, and at the EMU scale.

At the Project scale, the alteration of the golden eagle habitat from Project development could cause a shift in golden eagle breeding pair territory boundaries in the vicinity of the Project, which could cause increased antagonistic interactions with surrounding golden eagle breeding pairs in areas surrounding the Project.

To ensure that golden eagle populations at the local scale are not depleted by cumulative take in the local area, the Service analyzed in the PEIS (USFWS, 2016a) the amount of take that can be authorized while still maintaining the LAP of golden eagles. The LAP scale is defined for eagles as the median natal dispersal distance for the given species, which for golden eagles is a 109-mile radius (USFWS, 2016b). In order to issue a permit, cumulative authorized take must not exceed five percent of a LAP unless the Service can demonstrate why allowing take to exceed that limit is still compatible with the preservation of golden eagles. The Service must also assess any available data to determine if there is any indication that unauthorized take (human-caused take that has not been permitted by the Service) in the LAP may exceed ten percent, as this is roughly the average background level of anthropogenic mortality of eagles (USFWS 2016a). The eagle take permit regulations require the Service to conduct an individual LAP analysis for each permit application as part of the application review.

Therefore, the Service considered cumulative effects to the LAP surrounding the Project boundary (**Figure 4**) to evaluate whether the take to be authorized under this permit, together with other sources of permitted take and unpermitted golden eagle mortality, may be incompatible with the persistence of the Project's LAP. Data provided by NGM, data on other golden eagle take authorized and permitted by the Service, and other reliably documented unauthorized golden eagle mortalities have been incorporated to estimate cumulative impacts to the LAP. The cumulative effects analysis was conducted as described in the Service's Eagle Conservation Plan Guidance (USFWS, 2013). Results from this analysis can be found in Appendix B and are summarized below.

The LAP for the Project was estimated to be 860.1 golden eagles. The five-percent benchmark for authorized take of that LAP is 43 golden eagles per year. Current authorized take in the LAP, including permitted take at six other projects and the disturbance take that is estimated to occur at the Goldrush Project, is 5.76 golden eagles per year, which equates to 0.67 percent of the LAP per year. This is well below the five percent sustainable take benchmark determined by the Service to maintain the local area population of golden eagles. The Service also does not have any indication that unauthorized take may exceed ten percent of the LAP. Available data of unauthorized take suggests that unauthorized take of eagles in the LAP may be around 5.13 percent of the LAP per year. Therefore, effects of take at the local scale would not be significant and would therefore be compatible with the preservation of golden eagles.

Additionally, take of golden eagles has the potential to affect the larger golden eagle population. Accordingly, the 2016 PEIS (USFWS, 2016a) analyzed the cumulative effects of permitting take of golden eagles in combination with ongoing unauthorized sources of human-caused golden eagle mortality and other present or foreseeable future actions affecting golden eagle populations. As part of the analysis, the Service determined sustainable limits to permitted take within each EMU. The take that would be authorized by this permit would be offset by compensatory mitigation that would be provided by the Applicant, so it would not significantly impact the EMU golden eagle population. The minimization measures that would be required under the permit, along with the additional adaptive management measures, are designed to further ensure that the permit is compatible with the preservation of golden eagles at the regional EMU population scale.

As the estimated take of golden eagles by this Project, and the potential for the take to compound with other sources of eagle take and affect larger eagle populations, is either below Service-determined sustainable benchmarks or will be addressed by mitigation measures provided by the Applicant such as fully-offsetting compensatory mitigation, the Proposed Action of issuance of the requested incidental eagle take Permit would cause no significant adverse effects on golden eagle populations and is compatible with the preservation of golden eagles.

4.2 Alternative 1: No-Action Alternative

4.2.1 *Direct and Indirect Effects*

Golden Eagles

The Service assumes the level of golden eagle disturbance take is the same under the Proposed Action and No-Action Alternative, but under the No-Action Alternative, the Service would take no action on the permit application. A permit would not be issued, and compensatory mitigation to offset the expected take would not be required. Under this alternative, direct impacts of the Project on the golden eagle population would be assumed to be disturbance and the loss of

productivity of eight golden eagle breeding pair for a period of 24 years, and this take would not be offset by compensatory mitigation. The Applicant would continue to implement the monitoring and avoidance measures for the Project as described in **Section 2**; however, additional measures, including compensatory mitigation, would not be implemented.

This alternative does not meet the purpose and need for the action because, by regulation (50 CFR § 13.21), when in receipt of a completed application, the Service must either issue or deny a permit to the Applicant. The No Action Alternative also does not meet the purpose of and need for the action because it would result in the adverse, unmitigated effects to golden eagles described above, and these effects are not compatible with the preservation of golden eagles.

Bald Eagles

Under the No Action Alternative, benefits that bald eagles might also incur from avoidance and minimization measures established under a golden eagle take permit, as well as from compensatory mitigation actions provided to offset the take of golden eagles, would not occur.

Migratory Birds

Any incidental benefits to migratory birds from minimization measures and compensatory mitigation required under an eagle take permit would not be realized under the No Action Alternative.

Species Listed under the Endangered Species Act

As the Service would be taking no action under this alternative, there would be no effects to ESA-listed species under this No-Action alternative.

4.3 Comparison of Effects of Alternatives

The main differences between the Proposed Action and No-Action Alternative are the issuing of a permit with compensatory mitigation requirements to offset the permitted take under the Proposed Action and the level of concurrent and post-construction monitoring that would occur (**Table 4-1**). The Service assumes the level of take is the same under the Proposed Action and No-Action Alternative, however, under the No-Action Alternative, compensatory mitigation would not be required.

The Proposed Action is likely to have no significant impacts on golden eagles as there is no unmitigated take, and it meets all regulatory requirements and the conservation standard set forth in the 2016 PEIS (USFWS, 2016a).

Table 4-1 Comparison of the Proposed Action and No Action Alternative

Parameter	Proposed Action	Alternative 1: No Action Alternative
Eagle Take Levels	Annual loss of productivity from breeding golden eagles at up to eight territories over a 24-year period.	Annual loss of productivity from breeding golden eagles at up to eight territories over a 24-year period.
Avoidance and Minimization	Applicant will continue to implement the measures to minimize impacts to golden eagles (Section 2) at the Project, including transmission line design features, surface water site mitigation, wetland/riparian habitat enhancement, employee education, and carcass reporting.	Same as detailed under the Proposed Action, as the Applicant is committed to these measures even without issuance of a permit.
Compensatory Mitigation	Retrofitting of power poles to offset the loss of annual productivity from breeding golden eagles for up to eight territories over a 24-year period from the date of the issuance of the permit.	None.
Detection and Reporting	Applicant will continue to meet their BLM requirements from the ongoing 2022 EIS and implement the measures to minimize impacts to golden eagles (Section 2), including the reporting and detection system to ensure that personnel adhere to the appropriate actions should a previously unidentified nest, injured golden eagle, or deceased golden eagle be identified. NGM will implement EPM-1, as specified in Section 2.3.1.	Same as detailed under the Proposed Action, as the Applicant is committed to these measures even without issuance of a permit.
Unmitigated Eagle Take	None.	Annual loss of productivity from breeding golden eagles at up to eight territories over a 24-year period.
Adaptive Management	Conditions of the Permit would require annual reporting of methods and results of the eagle monitoring. The Service would use this information to assure the permittee remained compliant with the Permit, assess if there were any needed adjustments to the Permit. If continued monitoring determines that there are multiple takes occurring in a given year and that the proponent is approaching their take permit limits, adaptive management would be implemented. First, the Applicant would apply avoidance buffers on in-use/occupied nests to prevent incidental take. If avoidance is not practicable, the proponent may request a permit amendment from the Service.	None.
Data Collection / Monitoring	Fourteen days prior to ground disturbance, NGM would conduct ground surveys for surface disturbance occurring during raptor nesting season (January 15 through July 31). NGM would conduct annual breeding effort monitoring of golden eagle nests within 10 miles of the Plan boundary. NGM will implement EPM-1, as specified in Section 2.3.1.	Same as detailed under the Proposed Action, as the Applicant is committed to these measures even without issuance of a permit.

Parameter	Proposed Action	Alternative 1: No Action Alternative
Company Liability for Eagle Take	None, if NGM is in compliance with permit conditions.	Yes
Meets Eagle Act Regulatory Requirements	Yes	No

5.0 Mitigation

The Proposed Action incorporate measures to minimize and avoid impacts to the maximum degree practicable, as required by regulation. To ensure that regional golden eagle populations are maintained consistent with the preservation standard, regulations require that any golden eagle take that cannot practicably be avoided and is above EMU take limits must be offset by compensatory mitigation at a 1.2:1 ratio. As golden eagle take limits for all EMUs were determined to be zero (USFWS, 2016a), compensatory mitigation is necessary to offset any authorized take of golden eagles. The 1.2:1 ratio for compensatory mitigation achieves a net benefit to golden eagle populations, ensuring that regional golden eagle populations are maintained consistent with the preservation standard of the Eagle Act despite indications of declines in golden eagle populations (USFWS, 2016a). As this would fully offset the estimated take, as well as provide an additional net benefit to golden eagle populations, there would be no significant effects to golden eagle populations from issuing an eagle take permit under the Proposed Action. **Section 2** provides details of the compensatory mitigation and minimization measures that would be completed under the Proposed Action.

6.0 List of Acronyms and Abbreviations

ACEPM	Applicant-Committed Environmental Protection Measure
Applicant	Nevada Gold Mines LLC
BLM	Bureau of Land Management
CFR	Code of Federal Regulations
EA	Environmental Assessment
Eagle Act	Bald and Golden Eagle Protection Act of 1940
ECP	Eagle Conservation Plan
EIS	Environmental Impact Statement
EMU	Eagle Management Unit
ESA	Endangered Species Act of 1973
LAP	Local Area Populations
NDOW	Nevada Department of Wildlife
NEPA	National Environmental Policy Act of 1969
NGM	Nevada Gold Mines LLC
NHPA	National Historic Preservation Act
PEIS	Programmatic Environmental Impact Statement
Plan	Goldrush Mine Plan of Operations and Reclamation Permit Application
Project	Goldrush Mine Project
REA	Resource Equivalency Analysis
Service	United States Fish and Wildlife Service
Study area	Goldrush Mine Plan boundary plus a 10-mile radius
SWReGAP	Southwest Regional Gap Analysis Project
U.S.	United States
U.S.C.	United States Code

7.0 List of Preparers

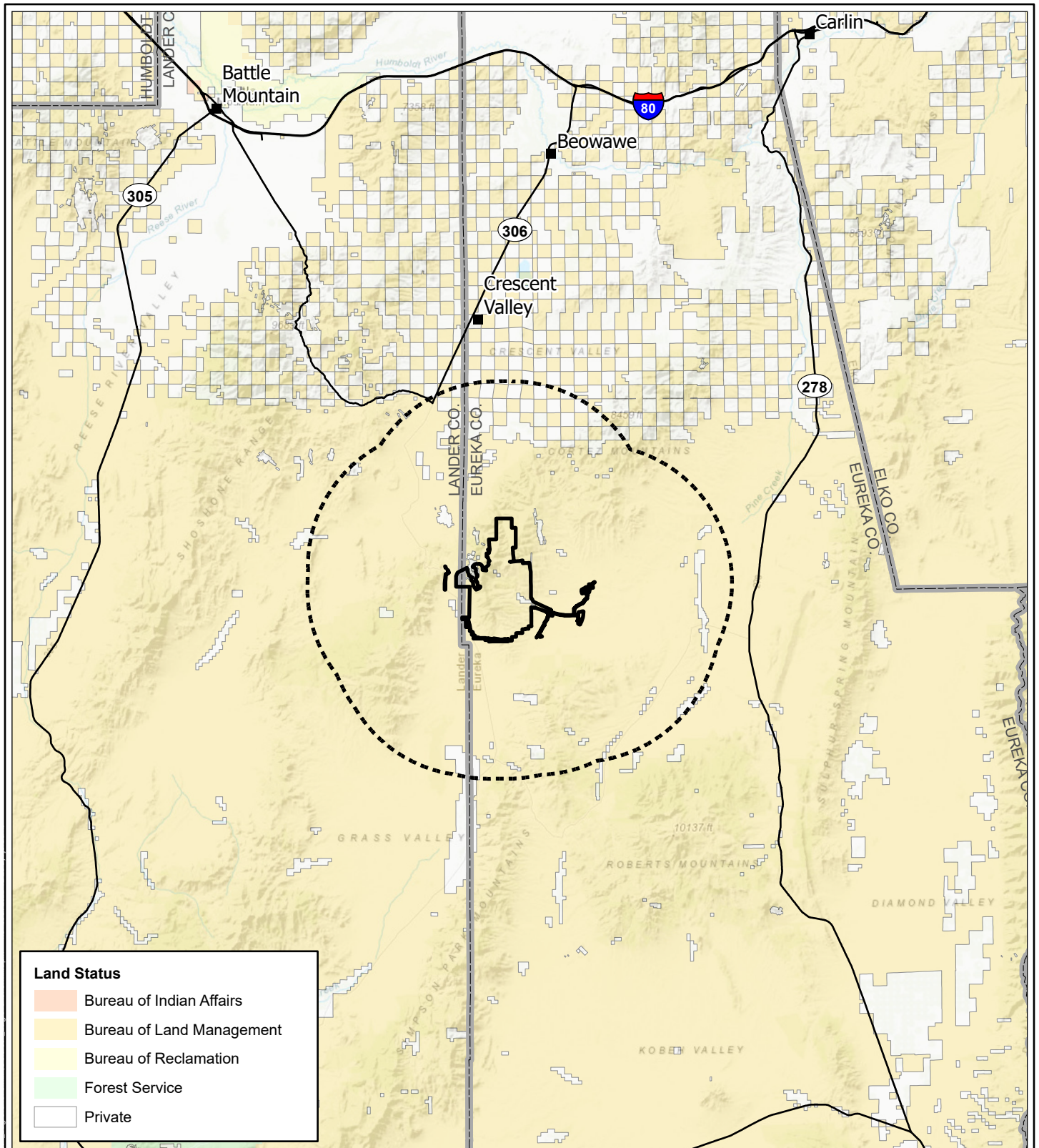
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- Heather Beeler, Wildlife Biologist, U.S. Fish and Wildlife Service
- James Panaccione, Wildlife Biologist, U.S. Fish and Wildlife Service

8.0 References

- Avian Power Line Interaction Committee and U.S. Fish and Wildlife Service (APLIC and USFWS). 2005. Avian Protection Plan Guidelines. Washington, D.C. April 2005.
- Avian Power Line Interaction Committee (APLIC). 2006. *Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006*. Edison Electric Institute, APLIC, and the California Energy Commission. Washington, D.C., and Sacramento, CA. 207 pp.
- Avian Power Line Interaction Committee (APLIC). 2012. *Reducing Avian Collisions with Power Lines: The State of the Art in 2012*. Edison Electric Institute and APLIC. Washington, D.C. October 2012.
- Bureau of Land Management (BLM). 2023. Goldrush Mine Project Final Environmental Impact Statement. DOI-BLM-NV-B010-2021-0006-EIS. October 2023.
- Kochert, M. N., and Steenhof, K. 2002. “Golden Eagles in the U.S. and Canada: Status, Trends, and Conservation Challenges.” *Journal of Raptor Research*. 36(supplement): 33–40.
- Lawrence, E. A. 1990. “Symbol of a nation: the bald eagle in American culture.” *Journal of American Culture*. 13(1): 63–69.
- McIntyre, C. L., and Adams, L. G. 1999. “Reproductive characteristics of migratory Golden Eagles in Denali National Park, Alaska.” *Condor*. 101: 115–123.
- Pagel, J. E., Whittington, D. M., and Allen, G. T. 2010. Interim golden eagle technical guidance: Inventory and monitoring protocols; and other recommendations in support of golden eagle management and permit issuance. Division of Migratory Bird Management. U.S. Fish and Wildlife Service. 26 pp.
- Stantec Consulting Services Inc. (Stantec). 2023. Eagle Conservation Plan, Goldrush Project Lander, Lander and Eureka Counties, Nevada. Prepared for Nevada Gold Mines LLC. September 1, 2021. Revised October 13, 2022. Revised March 9, 2023. Revised November 2, 2023.
- Steenhof, K., Kochert, M. N., and McDonald, T. L. 1997. “Interactive effects of prey and weather on Golden Eagle reproduction.” *J. Anim. Ecol.* 66: 350–362.
- United States Fish and Wildlife Service (USFWS). 2013. Eagle Conservation Plan Guidance. Module 1 – Land-based Wind Energy, Version 2. 103 pp.

- United States Fish and Wildlife Service (USFWS). 2016a. Programmatic Environmental Impact Statement for the Eagle Rule Revision. United States Department of the Interior Fish and Wildlife Service. December 2016.
- United States Fish and Wildlife Service (USFWS). 2016b. *Bald and Golden Eagles. Population Demographics and Estimation of Sustainable Take in the United States, 2016 Update*. United States Department of the Interior Fish and Wildlife Service. April 2016.
- United States Fish and Wildlife Service (USFWS). 2016c. Eagle Permits; Revisions to Regulations for Eagle Incidental Take and Take of Eagle Nests. Action: Final rule. 50 CFR Parts 13 and 22. December 16, 2016.
- United States Fish and Wildlife Service (USFWS). 2018. Golden Eagle (GOEA) Resource Equivalency Analysis: A Mitigation Framework for Permitted Takes of Golden Eagle Disturbance at Nests. Version Date: October 22, 2018.
- United States Geological Survey (USGS). 2011. National Gap Analysis Program. Southwest Regional Gap Analysis Project – Land Cover Descriptions. RS/GIS Laboratory, College of Natural Resources, Utah State University. Available online at <https://swregap.org/data/>.

Figures

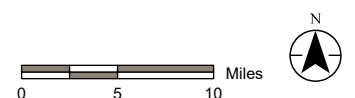


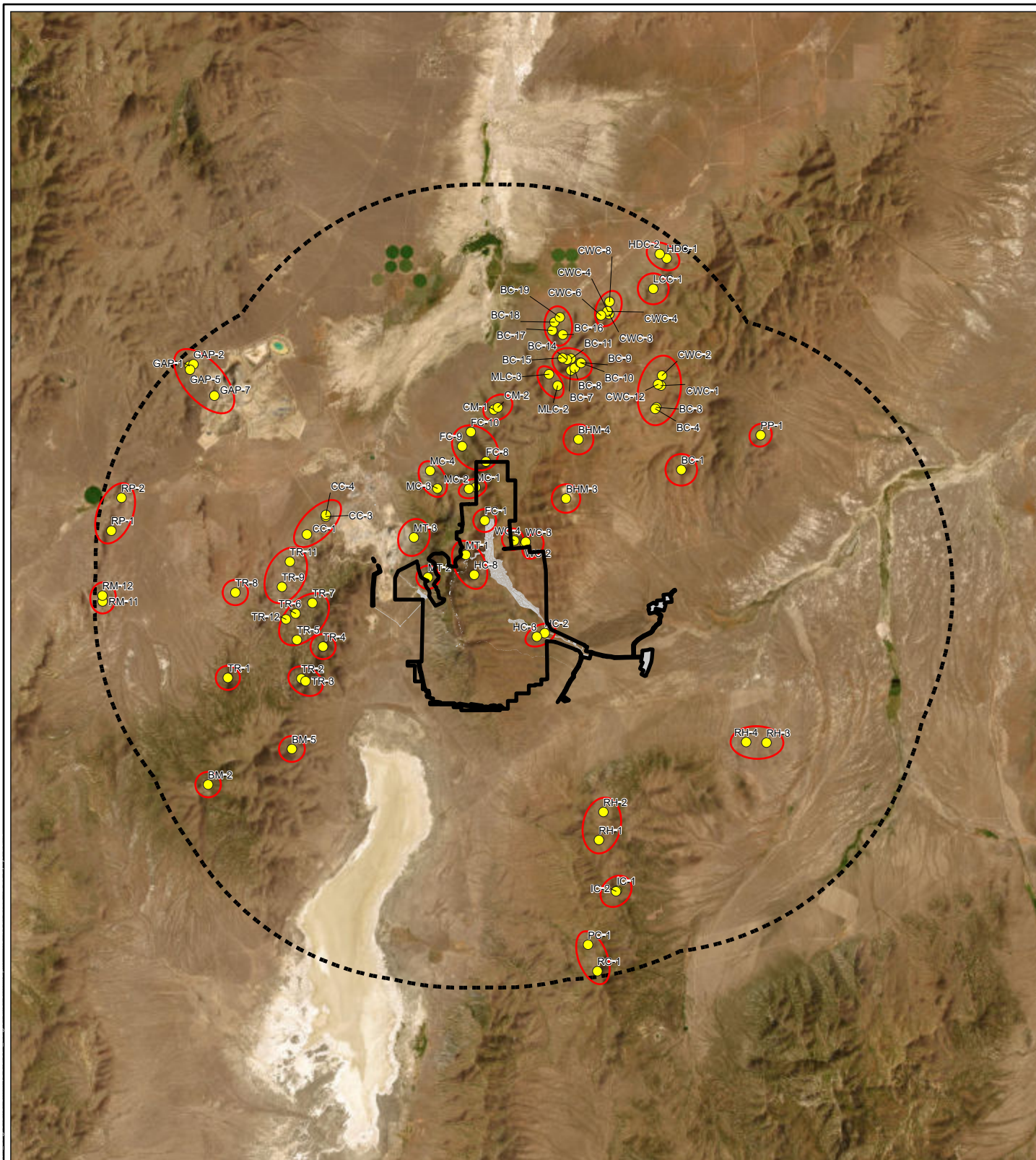
Legend

- Proposed Goldrush Mine Plan Boundary (Preferred Alternative)
- 10-mile Buffer of Mine Boundary
- Interstate
- Roads
- Cities

Figure 1
Project Location

Amended Mine Plan of Operations for the Goldrush Mine Project Environmental Assessment Eagle Take Permit Application



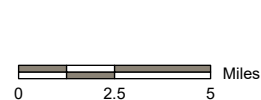


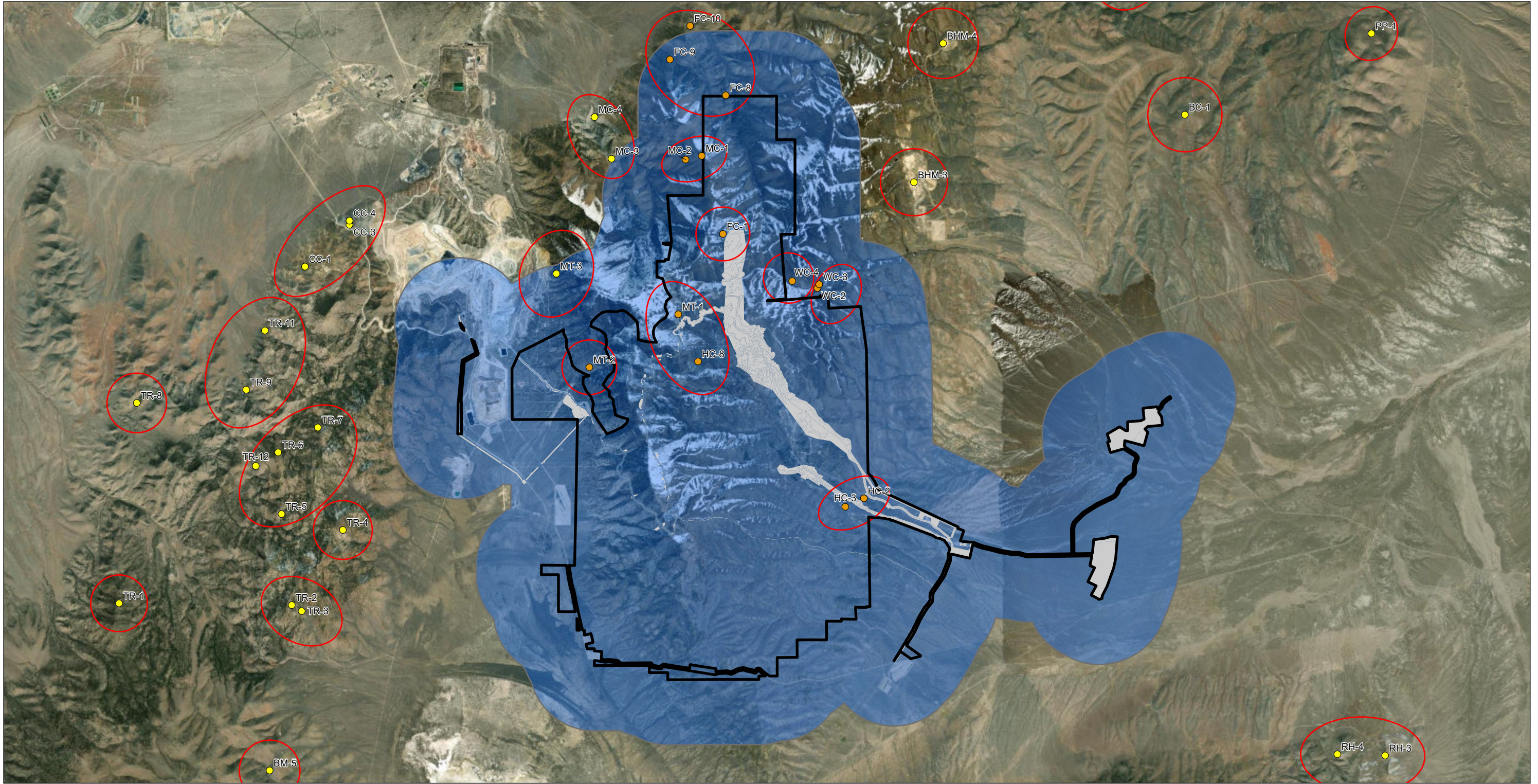
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- Proposed Goldrush Mine Plan Boundary (Preferred Alternative)
- Proposed/Reclassified Disturbance
- 10-mile Buffer of Mine Boundary
- Golden Eagle Nest Territory
- Golden Eagle Nests

Figure 2
Study Area Golden Eagle Nests

Amended Mine Plan of Operations for the
Goldrush Mine Project Environmental Assessment
Eagle Take Permit Application





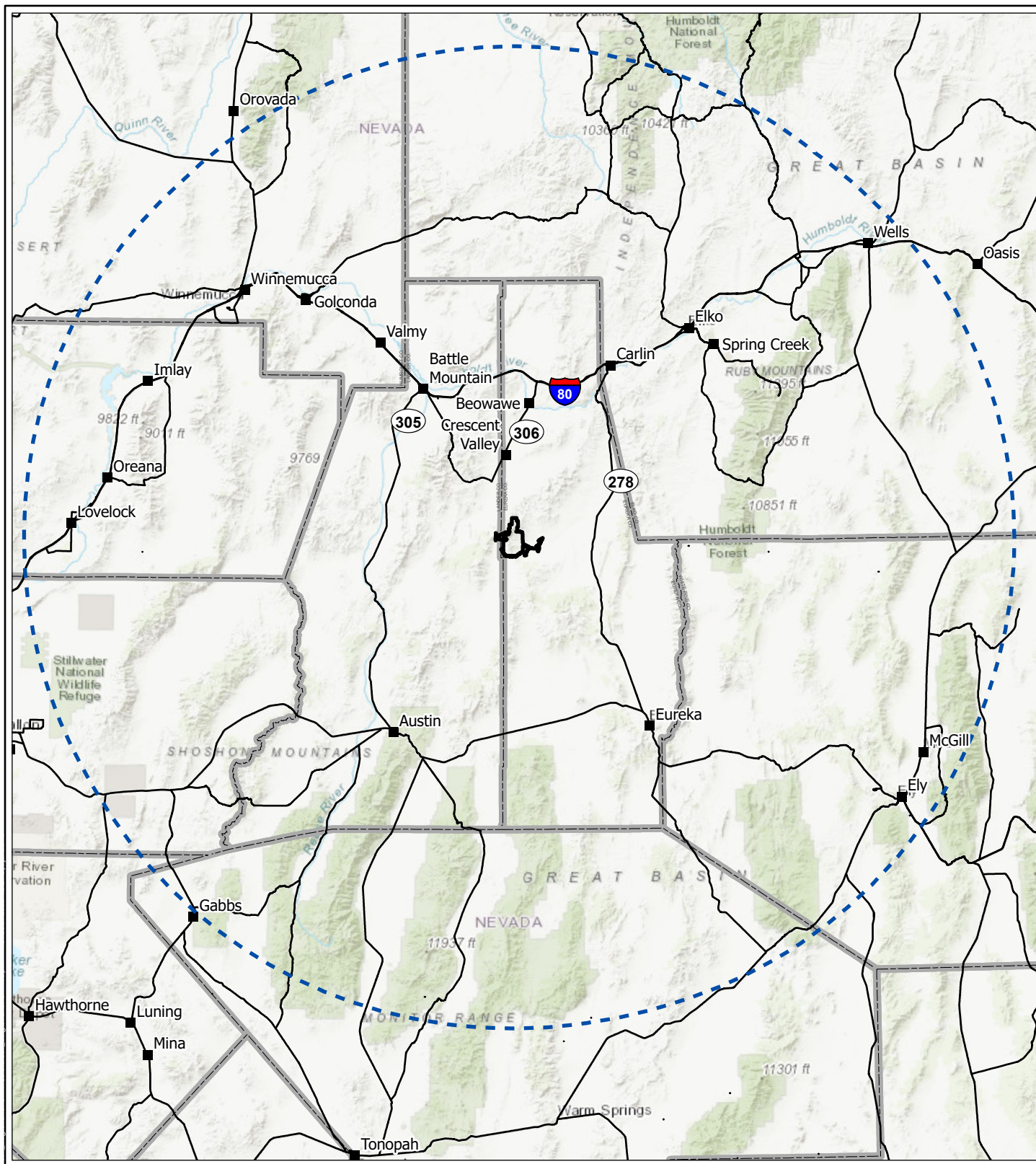
Legend

- Proposed Goldrush Mine Plan Boundary (Preferred Alternative)
- Proposed/Reclassified Disturbance
- 1-mile Buffer of the Mine Boundary
- Golden Eagle Nest Territory
- Golden Eagle Nest
- Golden Eagle Nest Proposed for Take

Figure 3
Golden Eagle Territories Proposed for Take
Amended Mine Plan of Operations for the
Goldrush Mine Project Environmental Assessment
Eagle Take Permit Application

0 4,000 8,000 Feet



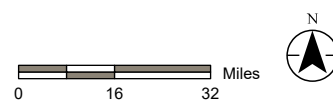


Legend

- Proposed Goldrush Mine Plan Boundary (Preferred Alternative)
- 109-Mile Natal Dispersal Area
- Interstate
- Roads
- Cities

Figure 4
Cumulative Effects Study Area

Amended Mine Plan of Operations for the
Goldrush Mine Project Environmental Assessment
Eagle Take Permit Application



Appendix A

Eagle Conservation Plan for the Goldrush Mine

**EAGLE CONSERVATION PLAN
GOLDRUSH PROJECT
LANDER AND EUREKA COUNTIES, NEVADA**

Prepared for:

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HC 66 Box 1250
Crescent Valley, Nevada 89821

December 9, 2021
Updated October 13, 2022
Updated November 29, 2023

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Appendix A	Survey Area Figures (2013-2022)
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ACRONYMS AND ABBREVIATIONS

BGEPA	Bald and Golden Eagle Protection Act of 1940, as amended
BLM	Bureau of Land Management
CFR	Code of Federal Regulations
CGM	Cortez Gold Mines
ECP	Eagle Conservation Plan
EPM	Environmental Protection Measure
GOEA	Golden Eagle
HCCUEP	Horse Canyon/Cortez Unified Exploration Plan
ID	Identification
NDOW	Nevada Department of Wildlife
NGM	Nevada Gold Mines LLC
Plan	Plan of Operations
Project	Goldrush Project
Study area	10-mile buffer area
SWReGAP	Southwest Regional Gap Analysis Project
USFWS	United States Fish and Wildlife Service

1.0 PURPOSE OF THIS PLAN

The purpose of this Eagle Conservation Plan (ECP) is to support an application(s) for a golden eagle (*Aquila chrysaetos*) take permit under the permit regulations of the Bald and Golden Eagle Protection Act (BGEPA). Specifically, Nevada Gold Mines LLC (NGM) is requesting a take permit issued by the United States Fish and Wildlife Service (USFWS) under Title 50 Code of Federal Regulations (CFR) § 22.26, for the incidental take of golden eagles, due to disturbance, from otherwise lawful activities associated with the Goldrush Project (Project).

The Project is located in Lander and Eureka counties, Nevada (**Figure 1**), within the Cortez Mining District. The Project is for the proposed development of a new underground mine by NGM, as authorized by the Bureau of Land Management (BLM) Battle Mountain District Office.

The purpose of this document is also to provide details and summarize data related to the population of golden eagles within the footprint and a surrounding 10-mile buffer area (Study area) of the Project. This document will use multi-year (i.e., ten years: 2013–2022) nest monitoring and survey data to provide details and characterize golden eagle territories, nests, and reproduction in the vicinity of the Project. This data will provide justification of territory delineations and estimations of breeding rate and fledging success rates for nests to better understand the impacts of mining operations over a ten-year period. There are 14 nests (Nests FC-01, FC-08, FC-09, FC-10, HC-02, HC-03, HC-08, MC-01, MC-02, MT-01, MT-02, WC-02, WC-03, and WC-04) associated with eight territories located within one mile of proposed mining disturbance associated with the Project as well as the Fourmile Canyon Road.

The BGEPA (as amended) prohibits the “take” of bald and golden eagles. BGEPA defines “take” to include “pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb,” and prohibits take of individuals and their parts, nests, or eggs. Permitting regulations (50 CFR Part 22) were issued in 2009 and revised in 2016. Known as the “Eagle Permitting Rule,” these regulations allow the USFWS to administer a permit program allowing for the lawful take of eagles and nests.

NGM has prepared this ECP as a precursor to applying for a BGEPA eagle “take” permit. This ECP provides the necessary supporting materials to accompany an eagle nest take permit application and demonstrates the proposed take is compatible with the preservation of golden eagles and the issuance criteria in 50 CFR § 22.26. This ECP will accompany the eagle nest take permit application requesting authorization for incidental disturbance take of 14 nests, associated with eight territories, located within one mile of proposed mining disturbance associated with the Project as well as the Fourmile Canyon Road.

An application for a take permit under 50 CFR § 22.26 requires the information listed below. Also provided is a reference to where in this ECP that information is provided.

- The duration of the Project for the permit is 24 years (see **Section 1.0**);
- A description of approved activities at the Project and surrounding area (**Section 2.0**);
- A discussion of eagle habitat, as it relates to foraging, nesting, and topography, found in the 10-mile radius of the Study area (**Section 3.0**);

- A brief description of the golden eagle nesting population within a 10-mile radius of the proposed Plan of Operations (Plan) boundary (**Section 4.0**);
- An assessment of the risks to golden eagles posed by the Project (**Section 7.0**);
- A review of practicable avoidance and minimization measures that NGM could and is employing to abate the potential risk (**Section 8.0**); and
- Monitoring and adaptive management of eagle populations (**Section 9.0**).

2.0 INTRODUCTION AND BACKGROUND

2.1 Mine History

Mining in the Cortez Mining District began with the discovery of silver ore in 1862. An eight-stamp mill was constructed in Mill Canyon in the 1860s to process ore that was being extracted from the Mill Canyon and Horse Canyon areas. Underground silver mining was conducted in the Horse Canyon and Mill Canyon area until the 1930s. Modern production of gold in the area started in 1968 at the Cortez Gold Mines (CGM) and has continued with the development of additional mines (Pipeline, Cortez Hills) and associated processing facilities. The Horse Canyon deposit was discovered in 1976 and production started in 1983. Mining in the Horse Canyon deposit ceased in 1987.

2.2 Authorized and Proposed Facilities

The current Goldrush boundary includes 19,853 acres associated with the Goldrush Mine, with approximately 772 acres of private land consisting of portions of patented mining claims and the Horse Ranch owned by NGM. Approximately 19,081 acres of unpatented mining claims would be on public lands administered by the BLM Mount Lewis Field Office and in part the BLM Elko District, Tuscarora Field Office. The proposed Goldrush Mine would include approximately 1,694.2 acres of new proposed disturbance and approximately 1,075.5 acres of existing/authorized and reclassified disturbance, for a total disturbance of approximately 2,769.7 acres. NGM submitted a Plan of Operations (Plan) for the Project to the BLM Mount Lewis Field Office in September 2019. The Plan includes an underground facility with a mine life of 24 years.

Based on the Plan, the Project would include: a materials handling system for transporting ore and waste rock; a dewatering system including rapid infiltration basins; a contact water pipeline; ventilation raises; a shotcrete/cemented rockfill plant and secondary cemented rockfill plant; a 120-kilovolt power line and a 13.8-kilovolt power line; ancillary surface facilities; and underground and surface exploration activities. Proposed mining facilities in the Plan boundary are shown on **Figure 2**. Because this Project is an underground mine and not an open pit mine, all blasting is subterranean and only the one-mile buffer is applicable.

Exploration drilling will continue throughout the mine life and could occur anywhere within the Goldrush Plan boundary. The purpose of continued drilling is to augment the ore body with additional ore reserves and resources. Results of drilling reduces many uncertainties about the ore body, such as ore grade and special distribution. NGM does not anticipate exploration drilling to occur outside of the authorized Goldrush Plan boundary during the first five years of mine authorization.

NGM will conduct annual surveys and avoid active areas to the extent possible during the golden eagle and raptor breeding season in order to avoid, minimize, and mitigate interactions with golden eagles, including avoiding habitat removal during the breeding and nesting season. Transmission lines will be designed and constructed in accordance with applicable regulations to minimize raptor electrocution and collision potential (APLIC, 2012). Animal road kills will be removed from roadways immediately.

3.0 AREA HABITATS

The Eagle Conservation Plan Guidance Module 1–Land-based Wind Energy, Version 2 recommends that an analysis of potential impacts on nesting golden eagles include the Project footprint itself (Plan boundary) and a surrounding 10-mile buffer area (**Figure 1**). Although this guidance was designed for wind energy, no such guidance document exists for mining.

3.1 Foraging Habitat

Vegetation communities in the 10-mile radius of the Project have been mapped by the Southwest Regional Gap Analysis Project (SWReGAP) land cover types for the Study area (**Figure 3**) (USGS, 2011). The SWReGAP mapping shows 27 vegetation communities occurring within the Study area. **Table 1** presents the total acres of vegetation communities within the Study area. Golden eagle prey species such as black-tailed jackrabbits (*Lepus californicus*), mountain cottontails (*Sylvilagus nuttallii*), and larger diurnal rodents such as yellow-bellied marmots (*Marmota flaviventris*) are commonly found within many of the vegetation communities present in the Study area. The potential foraging value of the various habitat types present in the region has not been quantified, but in general, the Inter-Mountain Basins Big Sagebrush Shrubland, Great Basin Xeric Mixed Sagebrush Shrubland, and Inter-Mountain Basins Montane Sagebrush Steppe are believed to represent the highest-value native foraging habitat. These three communities account for approximately 62 percent of the mapped habitat within the Study area.

Other habitat types that are believed to represent important golden eagle foraging habitats in the region include wetlands, natural water sources, and meadows. Wetlands and springs provide a reliable water source for eagle prey and, therefore, allow higher concentrations of eagle prey. There are multiple seeps, springs, stock troughs, and intermittent and ephemeral drainages throughout the Study area. Meadow habitats, agricultural alfalfa pivots, and pastures in the Study area support large populations of rodents and lagomorphs. These habitats occur at ranches in Crescent Valley, Grass Valley, and Pine Valley.

3.2 Nesting Habitat

Within the Study area, various rock outcrops and mine highwalls were identified as areas with nesting golden eagles. In 2019, there were six in-use golden eagle nests documented in the Study area, all of which were either on rock outcrops or highwalls. Cliff and rock outcrops exist in the Shoshone Mountains to the west, the Cortez Mountains, and the Toiyabe Mountains to the south. There are multiple open pits throughout the Study area, primarily within the Cortez and Shoshone mountains.

3.3 Topographic Features Attractive to Eagles

Tops of slopes oriented perpendicular to prevailing winds or near ridge crests of cliff edges are features that are conducive to slope soaring and are attractive features for eagles. Saddles or low points on ridge lines or near riparian corridors may serve as flight paths. Nearby perch and roost sites may also attract eagles. As described above, the area surrounding the Project represents golden eagle potential foraging habitat, though the value of this habitat varies in quality.

Cliffs and outcrops occur in the Shoshone Mountains to the west, the Cortez Mountains, and the Toiyabe Mountains to the south. Mountainous areas that include ridgelines and slopes with a variety of aspects, such that winds from multiple directions would create deflection currents, are suitable for soaring. Habitats surrounding the Project include perch and roost sites, and the area is suitable golden eagle nesting and foraging habitat as described above.

Table 1 SWReGAP Vegetation Communities within the Study Area

Vegetation Community	Acres	Percent
Agriculture	673	0.15
Barren Lands, Non-specific	848	0.19
Great Basin Foothill and Lower Montane Riparian Woodland and Shrubland	1,019	0.23
Great Basin Pinyon-Juniper Woodland	44,929	10.20
Great Basin Semi-Desert Chaparral	2	<0.01
Great Basin Xeric Mixed Sagebrush Shrubland	41,886	9.51
Inter-Mountain Basins Big Sagebrush Shrubland	189,932	43.13
Inter-Mountain Basins Big Sagebrush Steppe	917	0.21
Inter-Mountain Basins Cliff and Canyon	4,600	1.04
Inter-Mountain Basins Greasewood Flat	32,740	7.44
Inter-Mountain Basins Mixed Salt Desert Scrub	18,050	4.10
Inter-Mountain Basins Montane Sagebrush Steppe	41,344	9.39
Inter-Mountain Basins Mountain Mahogany Woodland and Shrubland	454	0.1
Inter-Mountain Basins Playa	17,215	3.91
Inter-Mountain Basins Semi-Desert Grassland	8,186	1.86
Inter-Mountain Basins Semi-Desert Shrub Steppe	1,090	0.25
Inter-Mountain Basins Subalpine Limber-Bristlecone Pine Woodland	22	<0.01
Invasive Annual and Biennial Forbland	3,374	0.77
Invasive Annual Grassland	13,264	3.01
Invasive Perennial Grassland	1,159	0.26
North American Arid West Emergent Marsh	39	0.01
Open Water	117	0.03
Recently Burned	12,489	2.84
Recently Mined or Quarried	5,917	1.34
Rocky Mountain Aspen Forest and Woodland	18	<0.01
Rocky Mountain Subalpine Dry-Mesic Spruce-Fir Forest and Woodland	28	0.01
Rocky Mountain Subalpine Mesic Spruce-Fir Forest and Woodland	16	<0.0
Total	440,327	100

¹ Within the 440,327 acres of vegetation communities, approximately 2,617 acres of total disturbance is proposed for the Goldrush Mine

4.0 GOLDEN EAGLE NESTING POPULATION IN THE VICINITY OF THE GOLDRUSH EXPANSION PROJECT

4.1 Survey History and Methodology

Golden eagle surveys have been conducted around or in the vicinity the Project from 2013 through 2022 (ten-year period from 2013 to 2022) and have focused on completing a thorough inventory of nests and capturing information regarding nest breeding effort, productivity, and success, if possible. Inventory and monitoring efforts have been conducted as described in the *Interim Golden Eagle Technical Guidance: Inventory and Monitoring Protocols* (Pagel et al., 2010), which is the standard golden eagle survey protocol accepted by the USFWS.

Although golden eagle surveys have been conducted around or in the vicinity, the Project was not the focus of a 10-mile radius survey until 2017. Before 2017, the Project was partially surveyed because of its boundary within the 10-mile radius survey area of the Cortez Plan boundary, which has been continuously surveyed and monitored since 2013. The survey areas for 2013 through 2022 are shown in **Appendix A** and described below.

- In 2013, a 10-mile radius of the center of the Cortez Mine boundary was surveyed for raptor nests (GBE, 2013).
- In 2014, the combined area of the 10-mile radius of the center of the Cortez Mine boundary, the 10-mile radius of the Mill Canyon boundary, and the 10-mile radius of the Goldrush boundary was surveyed (GBE, 2014).
- In 2015, the combined 10-mile radius of the Cortez Mine, Mill Canyon, Horse Canyon, and West Pine Valley boundaries was surveyed (GBE, 2015).
- In 2016, the combined 10-mile radius of the Buck Exploration, Buckhorn, Horse Canyon/Cortez Unified Exploration Plan (HCCUEP), Horse Canyon, New Buck Exploration, West Pine Valley, Mill Canyon, Cortez Mine, and the proposed Deep South Expansion Project boundaries was surveyed (GBE, 2016).
- In 2017, the combined 10-mile radius of the Buckhorn, Cortez Mine, HCCUEP, Horse Canyon, Mill Canyon, West Pine Valley, Buckhorn Exploration, New Buck Exploration, Gold Acres Exploration, proposed Deep South Expansion Project, and Robertson boundaries was surveyed (ERM, 2017).
- In 2018, 2019, 2020, 2021 and 2022 the combined 10-mile radius of the Buck Exploration, Buckhorn, Gold Acres Exploration, HCCUEP, Horse Canyon, Mill Canyon, New Buck Exploration, Robertson, West Pine Valley, proposed Deep South Expansion Project, and Cortez Mine Amended Plan boundaries was surveyed (Stantec, 2018, 2019, 2021, and 2022 [in prep]; Western Biological, 2020).

Additionally, there has been slight variation in the survey protocol (i.e., number of flights, dates, and ground surveys) since the surveys began in 2013. From 2013 to 2017, two aerial surveys (rotary flights) were conducted (GBE, 2013, 2014, 2015, 2016; ERM, 2017); whereas three aerial surveys (rotary flights) accompanied by a follow-up ground survey were conducted in 2018 (Stantec,

2018), 2019 (Stantec, 2019), 2020 (Western Biological, 2020), 2021 (Stantec, 2021) and 2022 (Stantec, 2022). **Table 2** provides the dates of the aerial and ground surveys.

Table 2 Survey Dates in the Vicinity of the Project from 2013 through 2022

Survey Year	Aerial Survey Number			Ground Surveys
	1	2	3	
2013	June 19	June 28	--	--
2014	April 8	May 7	--	--
2015	April 1-2	May 5-6	--	--
2016	April 1-2	May 2-3	--	--
2017	April 11-12	May 22-23	--	--
2018	February 14-15	March 23-24	April 23-24	May 28-June 3
2019	March 8-9	April 11-12	May 13-14	June 17-27
2020	February 20-22	April 1-2	May 7, 10-11	May 24-June 18
2021	March 22-23	April 26-27	May 27-28	June 28-July 2
2022	February 2-5	March 10-13	April 18-21	May 31-June 25

The status of a golden eagle nest is determined through surveys. The two nest statuses found and used to describe the results of surveys are defined in the *Programmatic Environmental Impact Statement for the Eagle Rule Revision* (USFWS, 2016) and are as follows:

- **In-use Nest**—A bald or golden eagle nest characterized by the presence of one of more eggs, dependent young, or adult eagles on the nest in the past 10 days during the breeding season.
- **Alternate Nest**—One of potentially several nests within a nesting territory that is not an in-use nest at the current time. When there is no in-use nest, all nests in the territory are alternate nests.

NGM intends to continue to conduct golden eagle nesting surveys annually for the Project. As new golden eagle nests are identified within 10 miles of the Project, they will be added to the inventory list for continued monitoring. If new golden eagle nests are identified within one mile of surface disturbance, the nest will be observed to determine if it is associated with an existing territory, or if the nest is associated with a new territory. If the nest is associated with a new territory, NGM will coordinate with the USFWS to determine how to incorporate it into its incidental disturbance take permit. If the nest is part of an existing territory, then it would be included under the ECP and this sensitive data document and their associated take permit application.

4.2 Nesting Surveys Results

A total of 83 golden eagle nest sites have been documented within the 10-mile radius of the Plan boundary over the past ten years of surveys. **Table 3** defines each Nest Identification (ID) acronym and **Table 4** lists territories, each nest site along with its coordinates, and golden eagle nesting status per survey year (2013-2022). All golden eagle nest locations provided in **Table 4** are shown on **Figure 4**. Additionally, **Table 4** is organized by territory; discussion of the territories delineated is presented in **Section 3.0**.

Table 3 Eagle Nest Survey Location Naming Conventions

Nest Acronym	Geographic Location
BC	
BHM	
BM	
CC	
CM	
CWC	
FC	
GAP	
HC	
HDC	
IC	
LCC	
MC	
MLC	
MT	
PC	
PP	
RC	
RH	
RM	
RP	
TR	
WC	

Table 4 Golden Eagle Nests in the Study Area and Status (2013-2022)

Territory	Nest ID	Easting	Northing	2013 Nest Status	2014 Nest Status	2015 Nest Status	2016 Nest Status	2017 Nest Status	2018 Nest Status	2019 Nest Status	2020 Nest Status	2021 Nest Status	2022 Nest Status
1	BC-01	████	████	--	--	--	--	In-use (GOEA)	Alternate	Alternate	Alternate	Alternate	In-use (GOEA)
2	BC-03	████	████	--	Alternate	Alternate	In-use by other species	Alternate	In-use by other species	In-use by other species	Alternate	Alternate	In-use by other species
	BC-04	████	████	--	Alternate	Alternate	Alternate	In-use by other species	Alternate	Alternate	Alternate	Alternate	In-use by other species
	CWC-01	████	████	--	In-use (GOEA)	Alternate	In-use (GOEA)	In-use (GOEA)	Alternate	Alternate	Alternate	Alternate	Alternate
	CWC-02	████	████	--	Alternate	In-use (GOEA)	Alternate	Alternate	Alternate	Alternate	Alternate	Alternate	Alternate
	CWC-12	████	████	--	--	--	--	--	--	In-use (GOEA)	Alternate	Alternate	Alternate
3	BC-07	████	████	--	Alternate	Alternate	Alternate	Alternate	Alternate	Alternate	In-use (GOEA)	Alternate	Alternate
	BC-08	████	████	In-use by other species	Alternate	Alternate	Alternate	Alternate	Alternate	Alternate	Alternate	Alternate	Alternate
	BC-09	████	████	In-use by other species	Alternate	In-use (GOEA)	Alternate	Alternate	Alternate	Alternate	Alternate	Alternate	Alternate
	BC-10	████	████	--	--	--	Alternate	Alternate	Alternate	Alternate	Alternate	Alternate	Alternate
	BC-11	████	████	In-use (GOEA)	Alternate	Alternate	In-use (GOEA)	Alternate	Alternate	Alternate	Alternate	Alternate	Alternate
	BC-14	████	████	--	--	--	Alternate	Alternate	In-use (GOEA)	Alternate	Alternate	Alternate	Alternate
	BC-15	████	████	--	--	--	--	--	--	--	--	In-use (GOEA)	Alternate
4	BC-16	████	████	Alternate	In-use (GOEA)	In-use (GOEA)	Alternate	In-use (GOEA)	Alternate	Alternate	Alternate	Alternate	Alternate
	BC-17	████	████	--	--	--	Alternate	Alternate	Alternate	In-use (GOEA)	Alternate	Alternate	Alternate
	BC-18	████	████	--	--	--	Alternate	Alternate	Alternate	Alternate	In-use (GOEA)	Alternate	Alternate
	BC-19	████	████	--	In-use by other species	In-use by other species	Alternate	Alternate	In-use by other species	Alternate	Alternate	Alternate	Alternate
5	BHM-03	████	████	In-use by other species	In-use by other species	In-use by other species	In-use by other species	Alternate	In-use by other species	In-use by other species	Alternate	In-use by other species	Alternate
6	BHM-04	████	████	In-use by other species	In-use (GOEA)	Alternate	In-use by other species	In-use by other species	In-use by other species	In-use by other species	Alternate	Alternate	In-use by other species
7	BM-02	████	████	--	--	--	Alternate	Alternate	Nest not found	Alternate	Alternate	Nest not found	Alternate
8	BM-05	████	████	--	--	Alternate	Alternate	In-use (GOEA)	Alternate	Alternate	Alternate	In-use (GOEA)	Alternate
9	CC-01	████	████	--	--	--	Alternate	In-use (GOEA)	Alternate	Alternate	Alternate	Alternate	In-use (GOEA)
	CC-03	████	████	--	Alternate	Alternate	Alternate (nest destroyed)	Alternate	Alternate	Alternate	Alternate	Nest not found	Alternate
	CC-04	████	████	--	Alternate	Alternate	Alternate	Alternate	In-use by other species	Alternate	Alternate	In-use by other species	In-use by other species
10	CM-01	████	████	--	Alternate	In-use (GOEA)	Alternate	Alternate	In-use (GOEA)	Alternate	In-use (GOEA)	Alternate	Alternate
	CM-02	████	████	--	In-use (GOEA)	Alternate	In-use (GOEA)	In-use (GOEA)	Alternate	Alternate	Alternate	Alternate	Alternate
11	CWC-03	████	████	--	--	--	In-use (GOEA)	Alternate	Alternate	Alternate	Alternate	Alternate	Alternate
	CWC-04	████	████	--	--	--	Alternate	In-use (GOEA)	Alternate	Alternate	Alternate	Alternate	Alternate
	CWC-05	████	████	--	Alternate	Alternate	Alternate	Alternate	Alternate	Alternate	Alternate	Alternate	Alternate

Territory	Nest ID	Easting	Northing	2013 Nest Status	2014 Nest Status	2015 Nest Status	2016 Nest Status	2017 Nest Status	2018 Nest Status	2019 Nest Status	2020 Nest Status	2021 Nest Status	2022 Nest Status
	CWC-06	■■■■	■■■■	--	--	Alternate	Alternate	Alternate	Alternate	Alternate	Alternate	Alternate	In-use by other species
	CWC-08	■■■■	■■■■	--	--	Alternate	In-use by other species	Alternate	In-use by other species	In-use by other species	Alternate	Alternate	Alternate
12 (USFWS 1)	FC-01	■■■■	■■■■	--	--	--	Alternate	Alternate	Nest not found	Nest not found	Nest not found	Nest not found	Alternate
13 (USFWS 2)	FC-08	■■■■	■■■■	--	Alternate	Alternate	Alternate	Alternate	Alternate	Alternate	Alternate	Alternate	Alternate
	FC-09	■■■■	■■■■	--	Alternate	Alternate	Alternate	Alternate	Alternate	Alternate	Alternate	Nest not found	Alternate
	FC-10	■■■■	■■■■	--	Alternate	Alternate	Alternate	In-use by other species	Alternate	Alternate	In-use (GOEA)	In-use by other species	Alternate
14	GAP-01	■■■■	■■■■	Alternate	Alternate	In-use by other species	Alternate	Alternate	Alternate	Alternate	Alternate	Alternate	Alternate
	GAP-02	■■■■	■■■■	In-use by unknown species	In-use (GOEA)	In-use by other species	Alternate	Alternate	Alternate	Alternate	Alternate	Alternate	Alternate
	GAP-05	■■■■	■■■■	--	--	--	--	--	In-use (GOEA)	In-use (GOEA)	In-use (GOEA)	Alternate	Alternate
	GAP-06	■■■■	■■■■	--	--	--	--	--	--	--	In-use (GOEA)	Alternate)	Alternate
	GAP-07	■■■■	■■■■	--	--	--	--	--	--	--	--	In-use (GOEA)	Alternate
15 (USFWS 3)	HC-02	■■■■	■■■■	--	--	Alternate	Alternate	Alternate	Alternate	Alternate	Alternate	Alternate	Alternate
	HC-03	■■■■	■■■■	--	--	Alternate	Alternate	Alternate	Nest not found	Nest not found	Nest not found	Nest not found	Nest not found
16 (USFWS 4)	HC-08	■■■■	■■■■	--	In-use (GOEA)	Alternate	--	Alternate	In-use by other species	Alternate	Alternate	Alternate	Alternate
	MT-01	■■■■	■■■■	In-use (GOEA)	Alternate	In-use (GOEA)	In-use (GOEA)	In-use (GOEA)	In-use (GOEA)	In-use (GOEA)	Alternate	In-use (GOEA)	In-use (GOEA)
17	HDC-01	■■■■	■■■■	--	Alternate	Alternate	Alternate	Alternate	Alternate	Alternate	Alternate	Alternate	Alternate
	HDC-02	■■■■	■■■■	--	In-use (GOEA)	In-use (GOEA)	In-use (GOEA)	In-use (GOEA)	In-use (GOEA)	Alternate	Alternate	In-use (GOEA)	Alternate
18	IC-01	■■■■	■■■■	--	--	--	Alternate	Alternate	Alternate	Alternate	Alternate	Alternate	Alternate
	IC-02	■■■■	■■■■	--	--	In-use (GOEA)	In-use by other species	Alternate	In-use (GOEA)	Alternate	Alternate	Alternate	Alternate
19	LCC-01	■■■■	■■■■	--	--	--	In-use by other species	Alternate	Alternate	In-use by other species	Alternate	In-use by other species	Alternate
20 (USWFS 5)	MC-01	■■■■	■■■■	--	--	--	In-use by other species	Alternate	Nest not found	Nest not found	Nest not found	Nest not found	Nest not found
	MC-02	■■■■	■■■■	--	--	--	Alternate	Alternate	Alternate	Alternate	Alternate	Alternate	Alternate
21	MC-03	■■■■	■■■■	--	Alternate	Alternate	In-use (GOEA)	Alternate	Alternate	Alternate	Alternate	Alternate	Alternate
	MC-04	■■■■	■■■■	--	In-use (GOEA)	In-use (GOEA)	Alternate	Alternate	In-use (GOEA)	Alternate	In-use (GOEA)	Alternate	In-use (GOEA)
22	MLC-02	■■■■	■■■■	--	In-use (GOEA)	Alternate	Alternate	In-use (GOEA)	In-use (GOEA)	In-use (GOEA)	Alternate	In-use (GOEA)	Alternate
	MLC-03	■■■■	■■■■	--	Alternate	Alternate	Alternate	Alternate	Alternate	Alternate	Alternate	Alternate	Alternate
23 (USFWS 6)	MT-02	■■■■	■■■■	--	Alternate	Alternate	Alternate	In-use (GOEA)	Alternate	Alternate	In-use (GOEA)	Alternate	Alternate
24	MT-03	■■■■	■■■■	--	Alternate	Alternate	Alternate	In-use by other species	Alternate	Nest not found	Nest not found	Nest not found	Nest not found
25	PC-01	■■■■	■■■■	--	--	--	Alternate	Alternate	Alternate	Alternate	Alternate	Nest not found	Nest not found

Territory	Nest ID	Easting	Northing	2013 Nest Status	2014 Nest Status	2015 Nest Status	2016 Nest Status	2017 Nest Status	2018 Nest Status	2019 Nest Status	2020 Nest Status	2021 Nest Status	2022 Nest Status
	RC-01	■■■■	■■■■	--	--	--	Alternate	In-use (GOEA)	In-use (GOEA)	Alternate	Alternate	Alternate	Alternate
26	PP-01	■■■■	■■■■	--	In-use (GOEA)	In-use by other species	In-use by other species	In-use by other species	Alternate	In-use by other species	Alternate	Alternate	In-use by other species
27	RH-01	■■■■	■■■■	--	Alternate	--	In-use by other species	Alternate	In-use by other species	Alternate	Alternate	In-use by other species	In-use by other species
	RH-02	■■■■	■■■■	--	In-use by other species	In-use by other species	Alternate	Alternate	Alternate	Alternate	Alternate	Alternate	Alternate
28	RH-03	■■■■	■■■■	--	Alternate	In-use (GOEA)	Alternate	In-use (GOEA)	In-use (GOEA)	Alternate	Alternate	Alternate	Alternate
	RH-04	■■■■	■■■■	--	Alternate	Alternate	Alternate	Alternate	Alternate	Alternate	Alternate	Alternate	Alternate
	RH-07	■■■■	■■■■	--	--	--	--	--	--	--	Alternate	Alternate	Alternate
29	RM-11	■■■■	■■■■	--	Alternate	Alternate	In-use (GOEA)	Alternate	Alternate	Alternate	Alternate	Alternate	Alternate
	RM-12	■■■■	■■■■	--	Alternate	In-use (GOEA)	Alternate	Alternate	In-use by other species	Alternate	Alternate	Alternate	Alternate
30	RP-01	■■■■	■■■■	--	--	--	--	Alternate	In-use (GOEA)	Alternate	In-use (GOEA)	Alternate	Alternate
	RP-02	■■■■	■■■■	--	Alternate	In-use by other species	Alternate	In-use by other species	In-use by other species	In-use by other species	Alternate	Alternate	Alternate
31	TR-01	■■■■	■■■■	--	--	--	Alternate	In-use (GOEA)	Nest not found	Nest not found	Nest not found	Nest not found	Nest not found
32	TR-02	■■■■	■■■■	--	In-use (GOEA)	In-use (GOEA)	Alternate	Alternate	Alternate	Alternate	Alternate	Alternate	Alternate
	TR-03	■■■■	■■■■	--	--	--	Alternate	Alternate	Alternate	Nest not found	Nest not found	Nest not found	Nest not found
33	TR-04	■■■■	■■■■	--	In-use (GOEA)	Alternate	Alternate	In-use (GOEA)	In-use (GOEA)	In-use (GOEA)	Alternate	In-use (GOEA)	Alternate
34	TR-05	■■■■	■■■■	--	In-use by other species	In-use (GOEA)	In-use by other species	In-use by other species	In-use by other species	In-use by other species	Alternate	In-use by other species	In-use by other species
	TR-06	■■■■	■■■■	--	--	--	In-use (GOEA)	Alternate	Alternate	Alternate	In-use (GOEA)	Alternate	Alternate
	TR-07	■■■■	■■■■	--	Alternate	Alternate	Alternate	Alternate	Nest not found	Nest not found	Alternate	Alternate	Alternate
	TR-12	■■■■	■■■■	--	--	--	--	--	In-use (GOEA)	Nest not found	Nest not found	Nest not found	Nest not found
35	TR-08	■■■■	■■■■	--	Alternate	Alternate	Alternate	In-use (GOEA)	Alternate	Alternate	Alternate	Alternate	Alternate
36	TR-09	■■■■	■■■■	--	In-use (GOEA)	In-use (GOEA)	In-use by other species	In-use by other species	In-use by other species	Alternate	Alternate	Alternate	Alternate
	TR-11	■■■■	■■■■	--	--	--	--	--	In-use (GOEA)	Alternate	Alternate	Alternate	Alternate
37 (USFWS 7)	WC-02	■■■■	■■■■	--	--	Alternate	Alternate	Alternate	In-use (GOEA)	Alternate	Alternate	Alternate	Alternate
	WC-03	■■■■	■■■■	In-use (GOEA)	In-use (GOEA)	In-use (GOEA)	Alternate	Alternate	Alternate	Alternate	Alternate	Alternate	Alternate
38 (USFWS 8)	WC-04	■■■■	■■■■	In-use (GOEA)	In-use by other species	In-use (GOEA)	Alternate	In-use (GOEA)	Alternate	Alternate	In-use (GOEA)	Alternate	Alternate

Sources: GBE 2013, 2014, 2015, 2016; ERM 2017; Stantec 2018, 2019, 2021, 2022; Western Biological, 2020

-- Nest not surveyed or no data available

GOEA = golden eagle

Nests shown in bold font are subject to disturbance take.

The USFW ID references the territory name in the Eagle Conservation Plan

5.0 GOLDEN EAGLE NESTING TERRITORIES

For the purposes of this document, an eagle territory is defined (consistent with 50 CFR § 22.3), as an area that contains one or more nests within the home range of a mated pair of eagles regardless of whether such nests were built by the current resident pair. The golden eagle nesting territories for the Study area have been delineated based on the 2013 through 2022 survey results.

As described in **Section 4.0**, Kochert and Steenhof (2012) found that distances between nearest alternate nests within territories ranged between less than one to 1,822 meters (or less than one to 1.13 miles) and Phillips et al. (1990) found that documented distances between alternate nests of individual pairs varied from zero to 3,400 meters (or zero to 2.11 miles). These ranges in published data aided in the delineation of territories for the Project.

Territory delineations were based on proximity of nests to one another, concurrent nest use of adjacent nests, alternating use (from year to year) of adjacent nests within a cluster, and nearest available quality nesting substrate (e.g., rock outcrop, cliff, pit highwall, etc.). These delineations represent the biological opinion of wildlife biologists and are subject to modification when/if new data are found that justify re-delineation.

Using the approach outlined above, a total of 38 distinct Project territories were delineated within the Study area. Nests within one mile of approved surface disturbance and/or within the approved disturbance footprint are also assigned a USFWS territory number to be associated with Take Permit records. For territories within one mile of approved disturbance and/or within the approved disturbance footprint, both USFWS and Project territory numbers are provided.

The total number of territories could be biased due to the size and position of the Study area on the landscape. Specifically, those territories along the perimeter of the Study area that occur in suitable nesting habitat could include other nests that are just outside the Study area. Because of these biases, Stantec recognizes that actual territory breeding effort rate is likely higher than reported estimates in this analysis. However, the delineations are representative of the data available.

Narratives for each territory are provided below and visual representations are presented within **Figure 4**. The territory and associated nest descriptions present nest distances from each other and specific documented nest use data. The territory assessments provided below were based on data collected between 2013 and 2022. A territory was still considered within the Plan boundary even if only a single nest associated with the territory occurred inside the Plan boundary.

A major component of the risk assessment is to identify Project activities that could result in a take. Those territories proposed for take are those that have been identified within the Plan boundary and are in the USFWS's one-mile buffer for surface disturbance activities.

The status of nesting territories are determined using the nest determinations and are based on the definitions from Steenhof et al. (2017). Territory status classifications are as follows:

In-Use – A nesting territory inhabited by a pair of birds, as evidenced by an in-use nest or a pair of

birds copulating, displaying, or defending a nest.

Occupancy Not Observed - No signs of occupancy were observed. Two surveys were conducted, one of which was conducted by ground during the courtship period.

Unclassified - No signs of occupancy were observed, but ground surveys during the courtship period were not conducted.

A total of 83 golden eagle nest sites have been documented within the 10-mile radius of the Plan boundary over the past ten years of surveys (GBE, 2013, 2014, 2015, 2016; ERM, 2017; Stantec, 2018, 2019a, 2021, 2023 [in prep]; Western Biological, 2020). Golden eagle nests within one mile of approved surface disturbance and/or within the approved surface disturbance footprint are provided in **Table 5** and shown on **Figure 5**. Incidental take could occur to 14 nests associated with eight unique territories. As such, the potential impacts of the Project would include the indirect take of eight territories. Six sites are within the Plan boundary (FC-01, FC-08, HC-02, HC-03, HC-08, and MT-01), and eight (FC-09, FC-10, MC-01, MC-02, MT-02, WC-02, WC-03, and WC-04) located just outside the Plan boundary. All these nests are proposed for incidental disturbance take. A viewshed analysis has been conducted using proposed disturbance, topography, and Geographic Information System tools for each nest, which are shown on **Figure 6** to illustrate the portions of anthropogenic activity that are within line-of-sight from the golden eagle nests subject to take.

5.1 Territory Delineations

5.1.1 Territories within One Mile

USFWS Territory 1 (Project Territory 12): FC-01

Territory 1 consists of a single nest (FC-01) within the Plan boundary and the only nest within the delineated territory. The closest adjacent golden eagle nests are WC-04 at 1.2 miles to the southeast and two nests (i.e., MC-01 and MC-02) at 1.2 miles to the north. Based on the data gathered and the locations of the adjacent nests relative to the FC-01 nest, it is assumed this nest represents its own territory.

FC-01 was found and identified as a golden eagle nest in 2016 and is the only nest within its territory [REDACTED]. This site occurs within one mile of proposed disturbance. It has not been documented in-use during the years it has been surveyed and was not found by surveyors from 2017 to 2021; therefore, this territory has a breeding effort and productivity rate of zero.

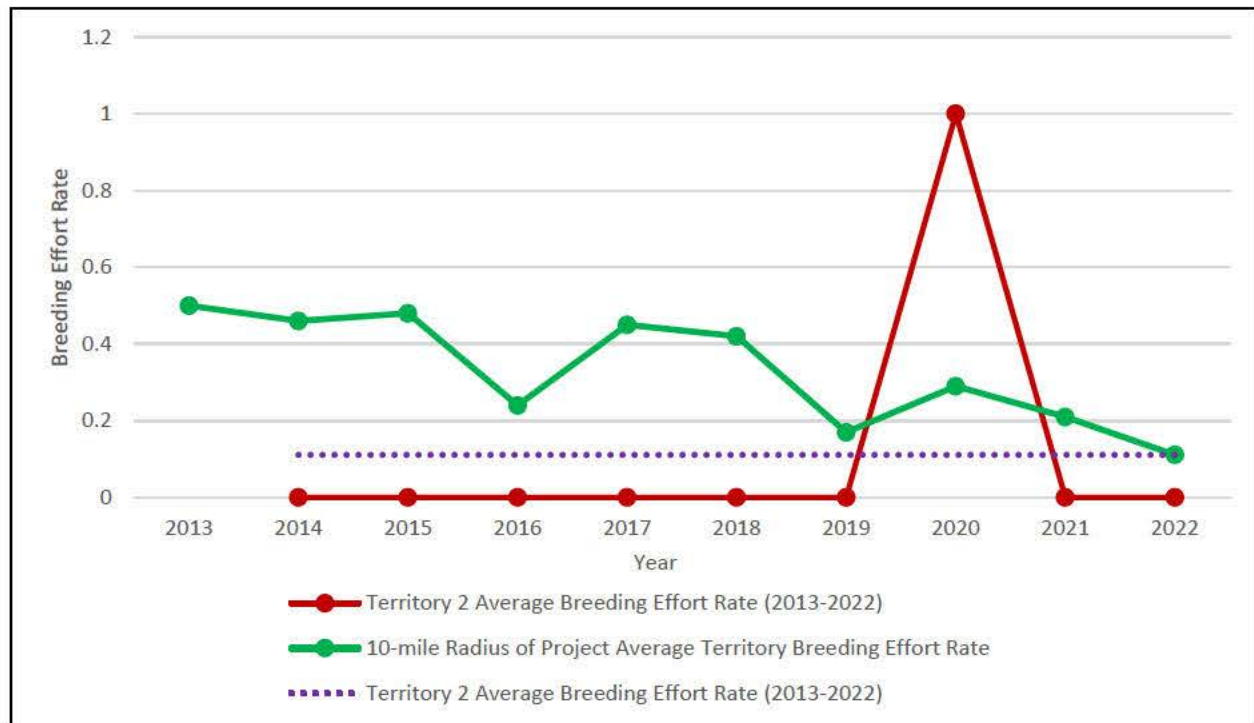
USFWS Territory 2 (Project Territory 13): FC-08, FC-09, and FC-10

Territory 2 consists of three nests all within 1.1 miles of each other, and two of the three nests occur within the same drainage. Within Territory 2, FC-08 is the only nest within the Plan boundary. During the monitoring period, none of these three nests have been documented in-use. The closest nest to this group is MC-01 located 1.0 mile to the southwest of FC-08, but this nest has not been found since the 2017 survey. The second closest nest, CM-01, is 1.2 miles to the northeast of FC-10. Both adjacent nests are thought to be associated with separate territories.

Three nest sites, FC-08, FC-09, and FC-10, are located on cliffs within Territory 2 [REDACTED]

and within one mile of [REDACTED]. All the nests were found and identified as a golden eagle nest in 2014. FC-08 and FC-09 have never been observed in-use during surveyed years. FC-10 was not observed to be in-use until 2017, when it was in-use by a common raven. From 2018 to 2019, FC-10 was not in-use but became in-use by golden eagles in 2020. Therefore, only one of the nests in this territory have been in-use by golden eagles in the nine years of surveys (2014-2022), and this territory has a low average breeding effort (11.1 percent). **Graph 1** presents the FC-08, FC-09, and FC-10 territory status per year compared to the average for the territories defined within the Study area. The only in-use nest over the nine years of survey produced two fledglings in 2020.

Graph 1 Territory 2 Breeding Effort Rate Compared to Average Territory Breeding Effort Rates



USFWS Territory 3 (Project Territory 15): HC-02 and HC-03

Territory 3 consists of two nests that are within 0.3 mile of each other and occur within the same drainage, [REDACTED]. The closest nest (HC-08) is 3.2 miles to the northwest of HC-02, and the next closest nest (WC-03) is 3.4 miles to the north; both are thought to be part of separate territories. HC-02 and HC-03 were found in 2015 and identified as a golden eagle nest in 2017. These nests have not been observed to be in-use during the eight-year monitoring period but are thought to represent a unique territory. HC-03 could not be located by surveyors in 2018, 2019, 2020, 2021, and 2022. Territory 3 has breeding effort and productivity rates of zero.

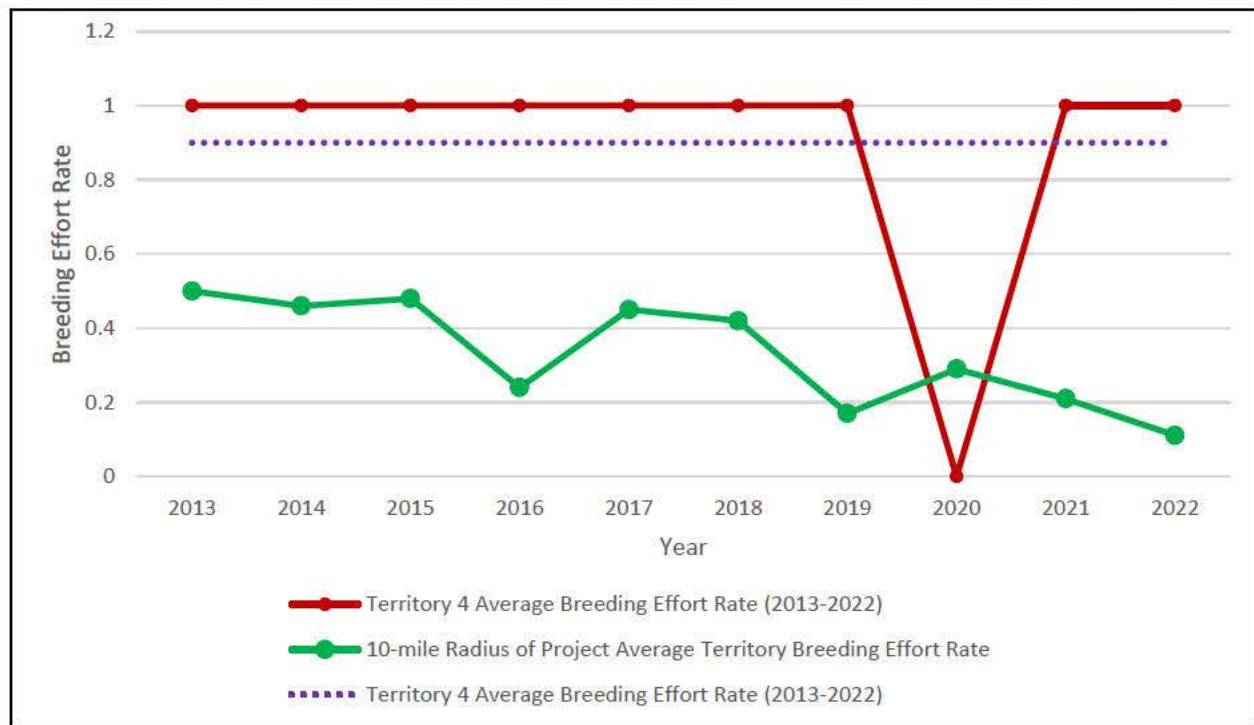
USFWS Territory 4 (Project Territory 16): HC-08 and MT-01

Territory 4 consists of two nests that are within 0.8 mile of each other. The nest sites (HC-08 and MT-01) are [REDACTED] and are within one mile of proposed disturbance. The closest nest (FC-01) is 1.4 miles to the northeast of MT-01. The next closest (MT-02) is 1.6 miles to the southwest of MT-01. MT-01 was found and identified as an in-use golden eagle nest in 2013; and

HC-08 was found and identified as an in-use golden eagle nest in 2014. MT-01 has been observed as in-use by golden eagles for all but two (2014 and 2020) of the years it has been surveyed. This nest has a use rate of 80 percent and produced two young in 2013, one to two young in 2015, one egg observed in 2016, two young in 2017, one young in 2018, two young in 2019, one young in 2021, and one young in 2022. Overall, it can be assumed that 11 to 12 eggs were produced at this nest with 10 to 11 young fledging. However, only 10 young could be confirmed, giving MT-01 an average brood size (i.e., fledged young per breeding effort) of 1.25 young. HC-08 was not observed as in-use in 2015, 2017, 2019, 2020, 2021, and 2022. In 2018, this nest was observed as in-use by a prairie falcon (*Falco mexicanus*), and no data was available for 2016. Overall, the use rate for HC-08 was 12.5 percent with no eggs or young confirmed to be produced. However, surveys may have been insufficient to gather this type of data.

Overall, the territory was documented as in-use from 2013 through 2019 and again in 2021 and 2022, or nine of the last 10 years, giving it a breeding effort rate of 90 percent. In 2020, the territory status was unclassified. It is above the average breeding effort and productivity rates for the Study area. **Graph 2** presents the HC-08 and MT-01 territory status per year compared to the average for the territories defined within the Study area.

Graph 2 Territory 4 Breeding Effort Rate Compared to Average Territory Breeding Effort Rates



USFWS Territory 5 (Project Territory 20): MC-01 and MC-02

Territory 5 consists of two nests (MC-01 and MC-02) that are within 0.25 mile of each other and occur within the same drainage. The closest nest (FC-08) is 1.0 mile to the north of MC-01, the next closest nest (MC-3) was 1.1 miles from MC-02. FC-08 and MC-03 are thought to be associated with separate territories given the distance to the nest and the topography, but it is possible that MC-01 and MC-02 are associated with one or more adjacent territories, however there is insufficient data to make this determination. Within this territory, MC-01 is the only nest within the Plan

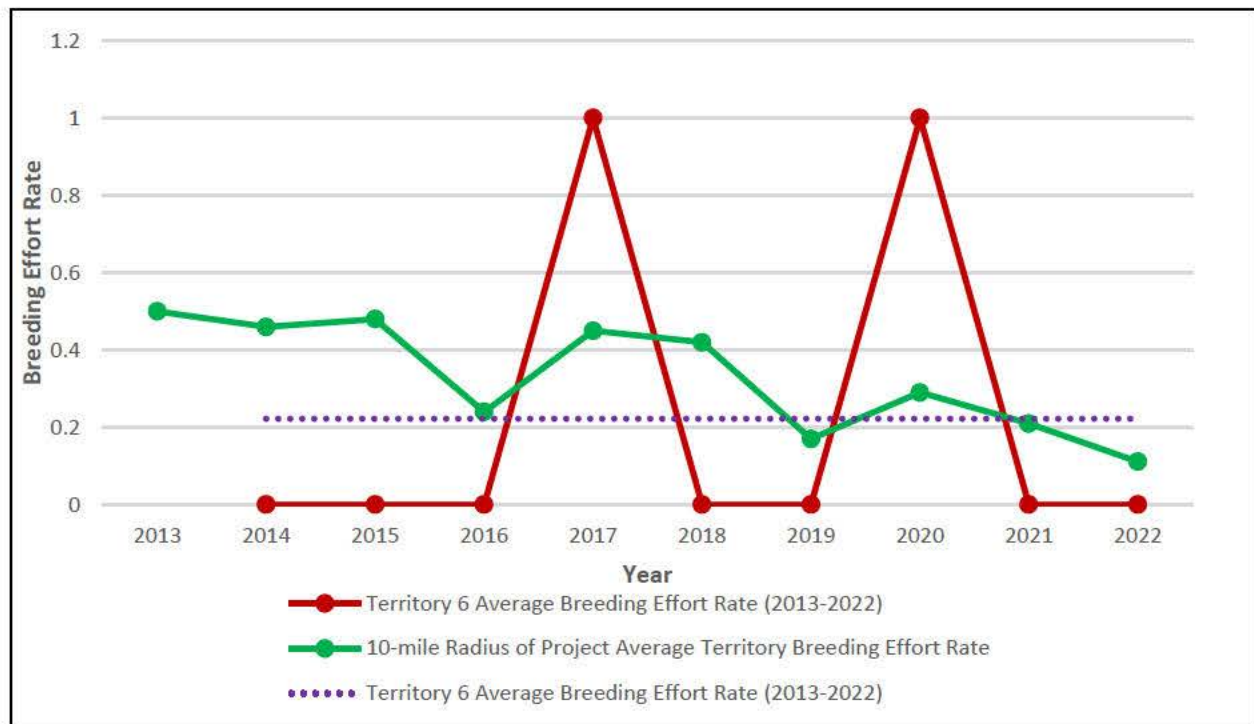
boundary. MC-01 was observed as in-use by a peregrine falcon (*Falco peregrinus*) in 2016 and has not been observed in-use since. MC-01 and MC-02 were first documented in 2016 and MC-01 was identified as a golden eagle nest in 2017. Surveyors were unable to find MC-01 in 2018, 2019, 2020, 2021 and 2022, and the nest may have fallen. These two nests have not been documented to be used simultaneously. Neither of the nests in Territory 5 have been observed as in-use by golden eagles in the seven years they have been surveyed (2016-2022), and thus, this territory has breeding effort and productivity rates of zero, which are below the average rates for the Study area.

USFWS Territory 6 (Project Territory 23): MT-02

Territory 6 consists of one nest (MT-02) that occurs within this drainage and is thought to represent a unique territory. The closest nest (MT-03) is 1.5 miles to the north, and the next closest (MT-01) is 1.6 miles to the northeast. MT-02 and MT-01 have been observed in-use simultaneously by golden eagles; and thus, are assumed to be separate territories. There is insufficient data to justify associating this nest with the adjacent nest to the north (MT-03), which is 1.5 miles away.

MT-02 was found and identified as a golden eagle nest in 2014 and occurs within one mile of proposed disturbance. This nest was not observed as in-use from 2014 to 2016, 2018 to 2019, 2021 or in 2022. This nest was observed to be in-use by golden eagles in 2017 and 2020. Overall, MT-02 was observed as in-use during two out of nine surveys, giving the nest a use rate of 22 percent. One egg was observed in this nest in 2017, but no young were produced. In 2020, a female was record on nest, but no young were produced. MT-02 had a zero percent success rate. This territory is above the average breeding effort and productivity rates for Study area. **Graph 3** presents the MT-02 territory status per year compared to the average for the territories within the Study area.

Graph 3 Territory 6 Breeding Effort Rate Compared to Average Territory Breeding Effort Rates



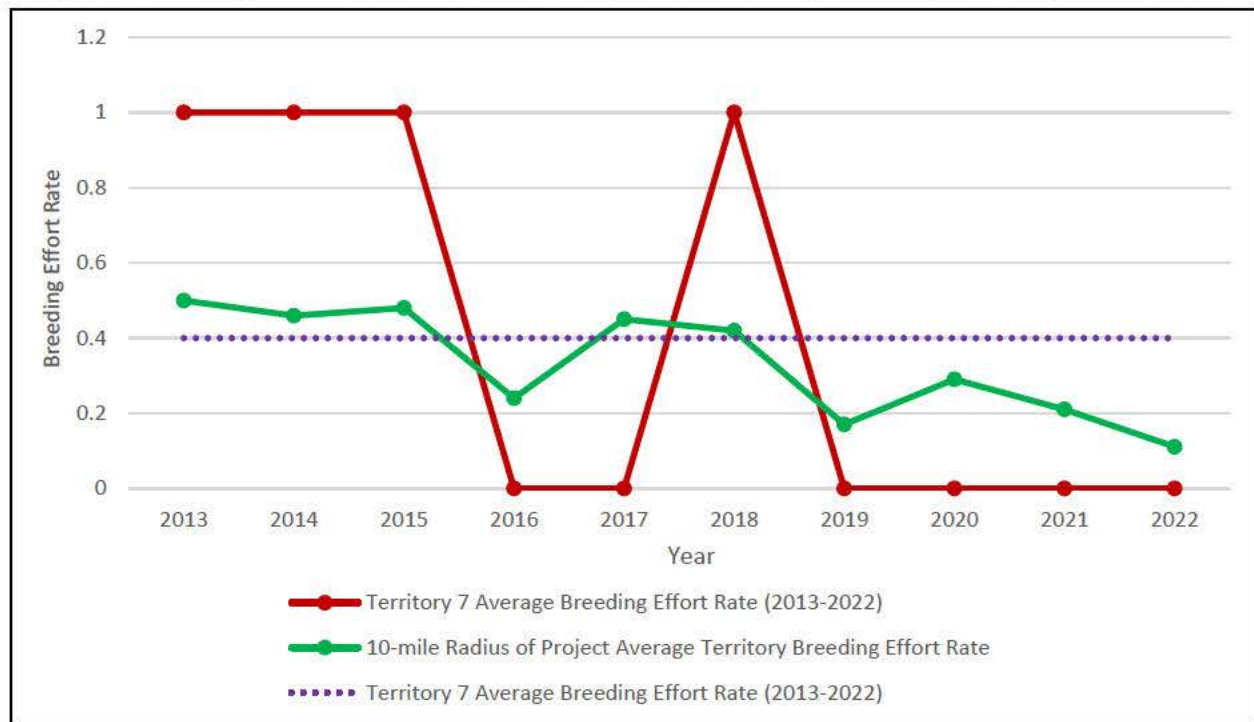
USFWS Territory 7 (Project Territory 37): WC-02 and WC-03

Territory 7 consists of two nests (WC-02 and WC-03). These nests are within 0.1 mile of each other and have not been observed as in-use simultaneously, but golden eagles have made nesting attempts at each during alternating breeding seasons. The closest nest (WC-04) is 0.4 mile to the west of this pair and has twice been used simultaneously with nests WC-02 and WC-03. The next closest is 1.7 miles to the northwest (FC-01) and is thought to be associated with a separate territory, given the distance and site topography.

WC-02 and WC-03 were first found and identified as golden eagle nests in 2015 and 2013, respectively. WC-02 has been surveyed eight times and was only observed to be in-use by a golden eagle in 2018. WC-02 has a use rate of 12.5 percent and has produced one to two young, giving it an average brood size (i.e., fledged young per breeding effort) of one young. WC-03 was observed as in-use from 2013 to 2015 and has been surveyed for 10 years (2013-2022), giving it a use rate of 30 percent. At least one eaglet fledged from this nest in 2013, and two young were produced in 2015. It can be assumed that at least three eggs and up to three young fledged at this nest, giving it an average brood size (i.e., fledged young per breeding effort) of 0.67 young.

Overall, a nest within Territory 7 has been observed as in-use from 2013 to 2015 and in 2018, or four times over the last 10 years, giving the territory a breeding effort rate of 40 percent. It is above the average breeding effort and productivity rates for the Study area. **Graph 4** presents the WC-02 and WC-03 territory status per year compared to the average for the territories in the Study area.

Graph 4 Territory 7 Breeding Effort Rate Compared to Average Territory Breeding Effort Rates



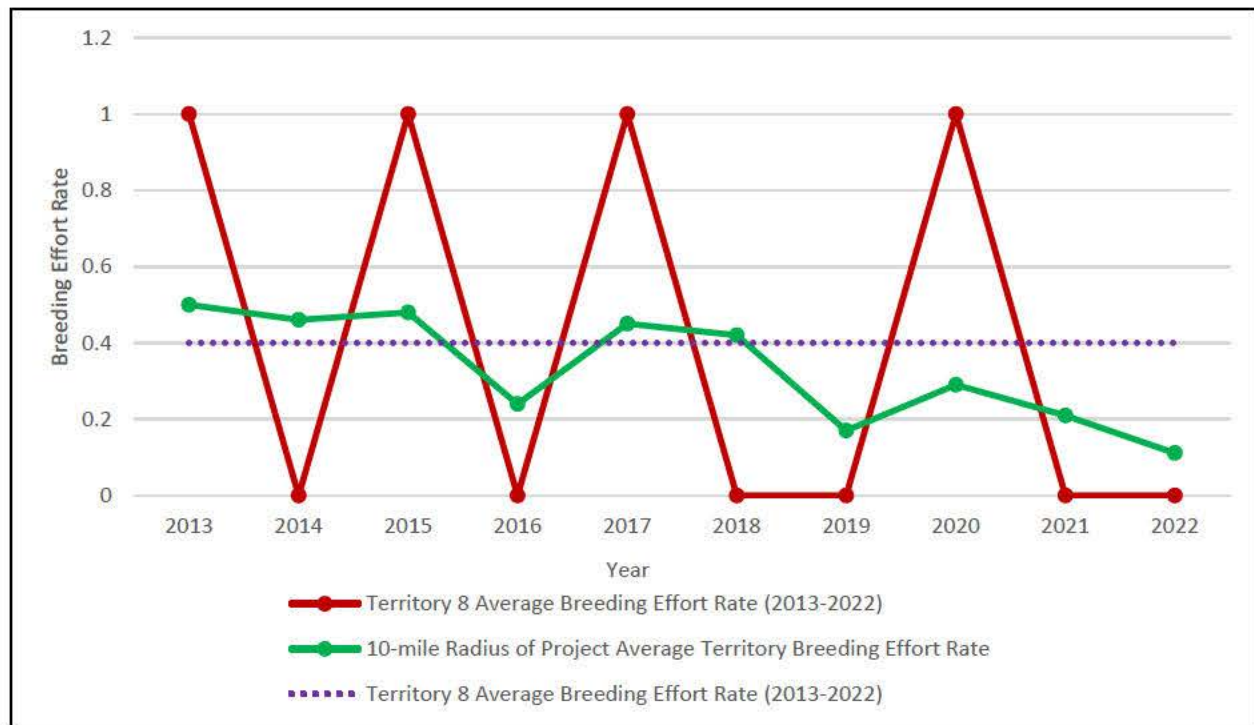
USFWS Territory 8 (Project Territory 38): WC-04

Territory 8 consists of one nest (WC-04), which is 0.4 mile to the west of WC-02 and WC-03. WC-04 has twice been simultaneously in-use by nesting golden eagles with these two adjacent nests

(WC-02 and WC-03) confirming Territory 8 as separate from Territory 7. The next closest nest (FC-01) is 1.2 miles to the northwest. WC-04, [REDACTED] was found, and identified as an in-use golden eagle nest in 2013. In 2014, the nest was in-use by a red-tailed hawk (*Buteo jamaicensis*). In 2015 and 2017 and 2020 this nest was in-use by golden eagles. The nest was not observed to be in-use in 2016, 2018, and 2019 through 2022.

Overall, this territory has a breeding effort rate of 40 percent, which is below the average breeding effort and productivity rates for the surrounding population within the Study area for 2013 through 2015, 2017, and 2018 but above the rates in 2016, 2018, and 2019 through 2022. A total of five young were observed at the nest over the four nesting attempts, giving it a success rate of 1.25 young per nesting attempt. **Graph 5** presents the WC-04 territory status per year compared to the average for the territories defined with a 10-mile radius of the Project.

Graph 5 Territory 8 Breeding Effort Rate Compared to Average Territory Breeding Effort Rates



Project Territory 24: MT-03

MT-03 is within a one-mile radius of the Project. The closest nest [REDACTED] (MT-02) is 1.5 miles to the south, and there are insufficient data to justify associating this nest with it. The next closest nest (MT-01) is 2.0 miles to the southeast and is thought to be associated with a separate territory. MT-03 nest has not been found in the previous four surveys and it is thought to have fallen.

Table 5 Nests and Territories Within One mile of Proposed Surface Disturbance

Nest Name and Number	Survey Year										Number of Seasons Nest was In-Use	Number of Seasons Territory was In-Use	Nest Use Rate	Territory Breeding Effort Rate	Nest Average Brood Size (Fledged Young per Breeding Effort)	Territory Average Brood Size (Fledged Young per Breeding Effort)										
	2013		2014		2015		2016		2017								2018		2019		2020		2021		2022	
	Nest Status	Territory Status	Nest Status	Territory Status	Nest Status	Territory Status	Nest Status	Territory Status	Nest Status	Territory Status	Nest Status	Territory Status	Nest Status	Territory Status	Nest Status	Territory Status	Nest Status	Territory Status	Nest Status	Territory Status						
Golden Eagle Nest FC-01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	0	0
Golden Eagle Nest FC-08	-	-	Alternate	Alternate	Alternate	Unclassified	Alternate	Unclassified	Alternate	Unclassified	Alternate	Unclassified	Alternate	Unclassified	Alternate	Unclassified	Alternate	Unclassified	Alternate	Unclassified	0	0	0	0	0	0
Golden Eagle Nest FC-9	-	-	Alternate	Alternate	Alternate	Unclassified	Alternate	Unclassified	Alternate	Unclassified	Alternate	Unclassified	Alternate	Unclassified	Alternate	Unclassified	Alternate	Unclassified	Alternate	Unclassified	0	0	0	0	0	2
Golden Eagle Nest FC-10	-	-	Alternate	Alternate	Alternate	Unclassified	Alternate	Unclassified	alternate	Unclassified	Alternate	Unclassified	Alternate	Unclassified	Alternate	Unclassified	In-use; two downy chicks observed on nest	Alternate	Unclassified	Alternate	1	0	0.11	2	0	0
Golden Eagle Nest HC-2	-	-	-	-	Alternate	Unclassified	Alternate	Unclassified	Alternate	Unclassified	Alternate	Unclassified	Alternate	Unclassified	Alternate	Unclassified	Alternate	Unclassified	Alternate	Unclassified	0	0	0	0	0	0
Golden Eagle Nest HC-3	-	-	-	-	Alternate	Unclassified	Alternate	Unclassified	Alternate	Unclassified	Alternate	Unclassified	Alternate	Unclassified	Alternate	Unclassified	Not found or not present	Alternate	Unclassified	Not found or present	0	0	0	0	0	0

Survey Year										Territory Average Brood Size (Fledged Young per Breeding Effort)																
Nest Name and Number	2013		2014		2015		2016		2017		2018		2019		2020		2021		2022		Territory Breeding Effort Rate	Nest Average Brood Size (Fledged Young per Breeding Effort)				
	Nest Status	Territory Status	Nest Status	Territory Status	Nest Status	Territory Status	Nest Status	Territory Status	Nest Status	Territory Status	Nest Status	Territory Status	Nest Status	Territory Status	Nest Status	Territory Status	Nest Status	Territory Status	Nest Status	Territory Status						
Golden Eagle Nest HC-08	-	In-use; two eaglets with contour feathers developed during June survey	In-use); one adult brooding; eaglets unconfirmed	In-Use	-	In-use; one eaglet, with down and contour feathers sheathed; second eaglet unconfirmed	In-Use	-	in-use; one egg	-	In-Use	Alternate	In-use; one young observed in nest; assumed one egg	In-Use	Alternate	In-use; two adults observed at nest in April; two young at nest in May; two eagles in nest, ages unknown in June	In-Use	Alternate	Unclassified	Alternate	In-use; one young in nest	Alternate	0	1.25	0	1.11
	-	In-use; two eaglets with contour feathers developed during June survey	Alternate	In-Use	-	In-use; one eaglet, with down and contour feathers sheathed; second eaglet unconfirmed	In-Use	-	in-use; one egg	-	In-Use	Alternate	In-use; one young observed in nest; assumed one egg	In-Use	Alternate	In-use; two adults observed at nest in April; two young at nest in May; two eagles in nest, ages unknown in June	In-Use	Alternate	Unclassified	Alternate	In-use; one young in nest	Alternate	0	1.25	0	1.11
Golden Eagle Nest MC-1	-	In-use; two eaglets with contour feathers developed during June survey	Alternate	In-Use	-	In-use; one eaglet, with down and contour feathers sheathed; second eaglet unconfirmed	In-Use	-	in-use; one egg	-	In-Use	Alternate	In-use; one young observed in nest; assumed one egg	In-Use	Alternate	In-use; two adults observed at nest in April; two young at nest in May; two eagles in nest, ages unknown in June	In-Use	Alternate	Unclassified	Alternate	In-use; one young in nest	Alternate	0	1.25	0	1.11
	-	In-use; two eaglets with contour feathers developed during June survey	Alternate	In-Use	-	In-use; one eaglet, with down and contour feathers sheathed; second eaglet unconfirmed	In-Use	-	in-use; one egg	-	In-Use	Alternate	In-use; one young observed in nest; assumed one egg	In-Use	Alternate	In-use; two adults observed at nest in April; two young at nest in May; two eagles in nest, ages unknown in June	In-Use	Alternate	Unclassified	Alternate	In-use; one young in nest	Alternate	0	1.25	0	1.11
Golden Eagle Nest MC-2	-	In-use; two eaglets with contour feathers developed during June survey	Alternate	In-Use	-	In-use; one eaglet, with down and contour feathers sheathed; second eaglet unconfirmed	In-Use	-	in-use; one egg	-	In-Use	Alternate	In-use; one young observed in nest; assumed one egg	In-Use	Alternate	In-use; two adults observed at nest in April; two young at nest in May; two eagles in nest, ages unknown in June	In-Use	Alternate	Unclassified	Alternate	In-use; one young in nest	Alternate	0	1.25	0	1.11
	-	In-use; two eaglets with contour feathers developed during June survey	Alternate	In-Use	-	In-use; one eaglet, with down and contour feathers sheathed; second eaglet unconfirmed	In-Use	-	in-use; one egg	-	In-Use	Alternate	In-use; one young observed in nest; assumed one egg	In-Use	Alternate	In-use; two adults observed at nest in April; two young at nest in May; two eagles in nest, ages unknown in June	In-Use	Alternate	Unclassified	Alternate	In-use; one young in nest	Alternate	0	1.25	0	1.11

Nest Name and Number	Survey Year																				Number of Seasons Nest was In-Use	Number of Seasons Territory was In-Use	Nest Use Rate	Territory Breeding Effort Rate	Nest Average Brood Size (Fledged Young per Breeding Effort)	Territory Average Brood Size (Fledged Young per Breeding Effort)
	2013		2014		2015		2016		2017		2018		2019		2020		2021		2022							
	Nest Status	Territory Status	Nest Status	Territory Status	Nest Status	Territory Status	Nest Status	Territory Status	Nest Status	Territory Status	Nest Status	Territory Status	Nest Status	Territory Status	Nest Status	Territory Status	Nest Status	Territory Status	Nest Status	Territory Status						
Golden Eagle Nest MT-2	-	-	Alternate	Unclassified	Alternate	Unclassified	Alternate	Unclassified	In-use; one egg in the nest	In-Use	Alternate	Unclassified	Alternate	Unclassified	In-use; female on nest	In-Use	Alternate	Unclassified	Alternate	Unclassified	2	2	0.22	0.22	0	0
Golden Eagle Nest WC-2	-	In-Use	-	In-Use	Alternate	In-Use	Alternate	Unclassified	Alternate	In-use; one or two young in nest; assume one or two eggs	In-Use	Alternate	Unclassified	Alternate	Alternate	Unclassified	Alternate	Unclassified	Alternate	Unclassified	1	4	0.12	0.40	1	0.75
Golden Eagle Nest WC-3	In-use; Young already fledged by June survey	In-Use	In-use; two adults, one brooding; young not visible; eaglets unconfirmed	In-Use	In-use; one adult near nest; two eaglets with down	In-Use	Alternate	Unclassified	Alternate	Alternate	Alternate	Alternate	Alternate	Alternate	Alternate	Alternate	Alternate	Alternate	Alternate	Alternate	3		0.30		0.66	

Nest Name and Number	Survey Year																				Number of Seasons Nest was In-Use	Number of Seasons Territory was In-Use	Nest Use Rate	Territory Breeding Effort Rate	Nest Average Brood Size (Fledged Young per Breeding Effort)	Territory Average Brood Size (Fledged Young per Breeding Effort)
	2013		2014		2015		2016		2017		2018		2019		2020		2021		2022							
	Nest Status	Territory Status	Nest Status	Territory Status	Nest Status	Territory Status	Nest Status	Territory Status	Nest Status	Territory Status	Nest Status	Territory Status	Nest Status	Territory Status	Nest Status	Territory Status	Nest Status	Territory Status	Nest Status	Territory Status						
	In-use; two eaglets, fully feathered and ready to fledge during June survey	In-Use	Alternate	Unclassified	In-use; one adult on nest brooding	In-Use	Alternate	Unclassified	In-use; adult on nest	In-Use	Alternate	Unclassified	Alternate	Unclassified	In-use; 3 nestlings, mostly feathered	In-Use	Alternate	Unclassified	Alternate	Unclassified	4	4	0.4	0.4	1.25	1.25
Golden Eagle Nest WC-4																										

*Green cells represent in-use territories.

5.1.2 Territories Outside of One Mile

BC-01

Nest BC-01 is thought to represent its own territory as no nests are immediately adjacent to this nest. The two closest nests (BC-03 and BC-04) are 2.4 miles to the north; nests BC-03 and BC-04 are thought to be part of a separate territory due to proximity and topography.

CWC-01, CWC-02, CWC-12, BC-03, and BC-04

These five nests are all within 1.2 miles of each other, and three of the five (CWC-01, CWC-02, and CWC-12) have alternated breeding effort during the study period. The nests in this cluster have not been simultaneously in-use. The closest nest (BC-01) is 2.4 miles to the south of BC-03, and the next closest nest (BHM-04) is 2.9 miles to the west of BC-03; both are thought to represent separate territories and have been used simultaneously by golden eagles.

BC-07, BC-08, BC-09, BC-10, BC-11, BC-14, and BC-15

These seven nests are within 0.5 mile of each other, five of the seven have alternated use rate (BC-07, BC-09, BC-11, BC-14, and BC-15), and they all occur within the same drainage [REDACTED]. The nests in this cluster have not been simultaneously in-use. The closest nest (MLC-02) is 0.7 mile to the southwest of BC-07, and next closest (MLC-03) is 0.8 mile to the southwest of BC-14; both are thought to be associated with a separate territory that has exhibited simultaneous use. BC-16 is 0.9 mile to the north of BC-15; these nests have never been simultaneously in-use. BC-16 is considered a part of another territory due to distance, but it is possible that BC-15 and BC-16 are associated with one or more adjacent territories. However, there is insufficient data to make this determination.

BC-16, BC-17, BC-18, and BC-19

These four nests are within 0.6 mile of each other, occur within the same drainage [REDACTED], and have not been simultaneously in-use, with BC-16 and BC-17 having documented use by golden eagles. The closest nest (BC-11) is 0.9 mile to the south of BC-16, and next closest (BC-14) is also 0.9 mile to the south of BC-16; both are thought to be associated with a separate territory with one occurrence of simultaneous use. BC-15 is 0.9 mile to the north of BC-16; these nests have never been simultaneously in-use. BC-15 is considered a part of another territory due to distance, but it is possible that BC-15 and BC-16 are associated with one or more adjacent territories. However, there is insufficient data to make this determination.

BHM-03

BHM-03 is thought to occupy a unique territory as no other nests are immediately adjacent to this location. The closest nests (WC-02 and WC-03) are 2.1 miles to the southwest, and the next closest nest (BHM-04) is 2.2 miles to the north; both are thought to be associated with separate territories although there is limited data to definitively support this delineation.

BHM-04

BHM-04 is thought to occupy a unique territory as no other nests are immediately adjacent to this location. The closest nest (MLC-02) is 2.0 miles to the north and was in-use simultaneously in 2014. The next closest nest (BHM-03) is 2.2 miles to the south, and there is insufficient data to definitively associate or disassociate this nest with that territory. However, given the distance and terrain, it is

assumed this nest represents a unique territory.

BM-02

Nest BM-02 is thought to occupy a unique territory as no other nests are immediately adjacent to this location. The closest nest (BM-05) is 3.3 miles to the northeast and the next closest (TR-01) is 3.9 miles to the north; both are thought to be associated with separate territories.

BM-05

Nest BM-05 is thought to occupy a unique territory as no other nests are immediately adjacent to this location. The closest nest (TR-03) is 2.5 miles to the north, and the next closest (TR-02) is 2.6 miles to the north; both are thought to be associated with a separate territory.

CC-01, CC-03, and CC-04

These nests are within 0.9 mile of each other, occur along the [REDACTED], and only nest CC-01 has documented use by golden eagle. The closest nest (TR-11) is 1.1 miles to the southwest of CC-01, and the next closest nest (TR-09) is 2.0 miles to the southwest of CC-01; both nests are thought to be associated with a separate territory.

CM-01 and CM-02

These two nests are within 0.1 mile of each other, have alternated breeding effort, and occur within the same drainage. These two nests have not been simultaneously in-use during the study period. The closest nest (FC-10) is 1.2 miles to the southwest of CM-01, and the next closest nest (FC-09) is 1.7 miles to the southwest of CM-01; both nests are thought to be associated with a separate territory.

CWC-03, CWC-04, CWC-05, CWC-06, and CWC-08

These five nests are within 0.5 mile of each other, occur within the same drainage [REDACTED], and have not been simultaneously in-use, with CWC-03 and CWC-04 documented in-use by golden eagle during the study period. The closest nest (LCC-01) is 1.5 miles to the west of CWC-08 and is thought to be associated with a separate territory, although use of this nest has only been documented by other raptors. The next closest (BC-19) is 1.6 miles to the east of CWC-06 and is thought to be associated with a separate territory.

GAP-01, GAP-02, GAP-05, GAP-06, and GAP-07

These nests occur within the [REDACTED] are within 1.3 miles of each other, and have not been simultaneously in-use. The closest nest (RP-02) is 5.0 miles to the southwest of GAP-07, and the next closest nest (CC-04) is 7.0 miles to the northeast of GAP-02; both nests are thought to be part of a separate territory due to distance.

HDC-01 and HDC-02

Nests HDC-01 and HDC-02 are thought to occupy a unique territory, with consistent use by golden eagle occurring in nest HDC-02. The closest nest (LCC-01) is 1.2 miles to the south, but no use rate data is available to justify an association. The second closest nest (CWC-08) is 2.5 miles to the southwest and this nest is thought to be associated with a separate territory that has been in-use simultaneously.

IC-01 and IC-02

These nests are within 0.1 mile from each other, occur on the same feature within the same drainage [REDACTED], and have not been simultaneously in-use. The closest nest (RH-01) is 1.9 miles to the north of this cluster, and the next closest nest (PC-01) is 2.2 miles to the southwest; both are thought to be part of separate territories.

LCC-01

Nest LCC-01 is thought to represent a unique territory with no nests that are adjacent to this nest. There is a lack of data that would otherwise suggest association with another territory. The closest nests (HDC-01 and HDC-02) are 1.2 miles to the north, but no breeding effort data are available to justify an association. The next closest nest (CWC-08) is 1.6 miles to the west and is thought to be associated with a separate territory.

MC-03 and MC-04

These nests are within 0.7 mile of each other, have alternated use rate, and occur within the same drainage. These two nests have not been documented to be simultaneously in-use. The closest nest (MC-02) is 1.1 miles to the east of MC-03, and the next closest (MC-01) is 1.3 miles to the east of MC-03; both nests are thought to be associated with a separate territory.

MLC-02 and MLC-03

These nests are within 0.5 mile of each other, occur within the same drainage [REDACTED], and have not been simultaneously in-use. The closest nest (BC-07) is 0.7 mile to the northeast of MLC-02, and next closest (BC-15) is 0.8 mile to the northeast of MLC-03; both are thought to be associated with a separate territory that has been in-use simultaneously.

PC-01 and RC-01

These two nests are within 1.0 mile of each other, occur on the same geographic feature, and have not been simultaneously in-use. The closest nest (IC-02) is 2.1 miles to the northeast of PC-01 and is part of a separate territory due to distance and topography. The next closest nest (IC-01) is 2.2 miles to the northeast of PC-01 and is thought to be part of a separate territory.

PP-01

No nests are adjacent to this nest, and there is a lack of data that would otherwise suggest association with a nearby territory. The closest nest (BC-01) is 3.1 miles to the southwest. The next closest (BC-03) is 3.9 miles to the west and is thought to be part of a separate territory that has been in-use simultaneously.

RH-01 and RH-02

These two nests are within 1.0 mile of each other. The closest nest (IC-01) is 1.9 miles to the south of RH-01, and the next closest nest (IC-02) is also 1.9 miles to the south of RH-01; both nests are thought to be part of a separate territory.

RH-03, RH-04, and RH-07

These three nests are within 0.7 mile of each other, occur along the same range front, and have not been simultaneously in-use. The closest nest (RH-02) is 5.7 miles to the southwest of RH-04, and the next closest nest (RH-01) is 6.3 miles to the southwest of RH-04; both closest nests are thought

to be part of a separate territory.

RM-11 and RM-12

These two nests are within 0.2 mile of each other, have alternated breeding effort, and have not been simultaneously in-use. The closest nest (RP-01) is 2.4 miles to the north of RM-12, and the next closest (RP-02) is 3.7 miles to the north of RM-12; both are thought to be associated with a separate territory.

RP-01 and RP-02

These nests are within 1.2 miles of each other and have not been simultaneously in-use. The closest nest (RM-12) is 2.4 miles to the south of RP-01, and the next closest (RM-11) is 2.5 miles to the south of RP-01; both are thought to be associated with a separate territory that has been in-use simultaneously with this territory.

TR-01

Nest TR-01 is thought to occupy a unique territory as no other nests occur in the same area as this nest. The closest nest (TR-02) is 2.7 miles to the east, and the next closest (TR-03) is 2.8 miles to the east; both other nests are thought to be associated with a separate territory.

TR-02 and TR-03

These two nests are within 0.1 mile of each other and have not been simultaneously in-use. The closest nest (TR-04) is 1.4 miles to the northeast of TR-02, and the next closest (TR-05) is 1.4 miles to the north; both are thought to be associated with separate territories and have been simultaneously in-use with this territory.

TR-04

No other nests occur on the same geographic feature or in the same area as this nest. The closest nest (TR-05) is 1.0 mile to the west and is thought to be associated with a separate territory due to slightly closer proximity to other nests and alternating use rate. The data could also suggest that the TR-05 nest is part of this territory. The next closest nest (TR-02) is 1.4 miles to the southwest and has been in-use simultaneously with this territory.

TR-05, TR-06, TR-07, and TR-12

These four nests are within 1.4 miles of each other. Three of the four nests in this cluster (TR-05, TR-06, and TR-12) have alternated use rate, and none have been simultaneously in-use. The closest nest (TR-04) is 1.0 mile to the east of TR-05 and is thought to be associated with a separate territory. The next closest nest is (TR-09) 1.1 miles to the north of TR-06 and is thought to be associated with a separate territory that has been in-use simultaneously.

TR-08

Nest TR-08 is thought to occupy a unique territory as no other nests occur in the same area as this nest. The closest nest (TR-09) is 1.7 miles to the east and, though it has alternated use rate with this nest, it is thought to be associated with a separate territory due to closer proximity to other nests and geographic setting. The next closest nest (TR-06) is 2.3 miles east and thought to be associated with a separate territory.

TR-09 and TR-11

These two nests are within 1.0 mile of each other, have alternated breeding effort, and have not been simultaneously in-use. The closest nest (TR-06) is 1.1 miles to the southeast of TR-09 and is thought to be associated with a separate territory that has been in-use simultaneously with this territory. The next closest (CC-01) is 1.1 miles to the northeast of TR-11 and is thought to be associated with a separate territory.

6.0 GOLDEN EAGLE PRODUCTIVITY

6.1 Background and Methodology

Productivity and breeding effort for nesting golden eagles in the 10-mile radius of the Project were analyzed using the productivity and breeding effort ranges available in published data. Kochert et al. (2007) cite several studies that found the percentage of eggs that hatch varies from 57 to 86 percent of eggs laid, and that the percentage of hatched young that fledge varies from 46 percent in Montana (Reynolds, 1969), 77 percent in southwestern Idaho, and 80 percent in Utah. Kochert and Steenhof (2002) cite several studies that indicate the number of successfully fledged young per year from individual nests varies from 0.66 young per nest per year in Alaska to 1.08 young per nest per year in Oregon. The number of successfully fledged young may be somewhat higher in Nevada. Newmont (2012) provides a review of golden eagle biology and population status in Nevada. It cites a study by Page and Seibert (1973) that found 50 nests in Elko County fledged an average of 1.1 young per nest per year. Worley (1984) documented a fledging rate of over 1.7 young per nest per year from 27 northeastern Nevada nests studied in 1979 and 1980. Ryser (1985) notes the Nevada Department of Wildlife (NDOW) also documented a fledging rate of 1.7 young per nest per year during this same two-year period (Herron and Lucas, 1979; Herron et al., 1980).

Since these studies date to the 1980s or earlier, they may not capture more recent habitat changes caused by wildland fire within Nevada. Recent research by fire ecologists has documented that (1) over the last four decades, wildfires have become larger, and large fires have become more frequent across the western United States (Miller and Safford, 2012); (2) increases in fire-adapted grasses, primarily cheatgrass, has increased the rate of fire spread (Chambers, 2008); and (3) cheatgrass invasion has resulted in fires burning more arid salt desert scrub ecosystems that did not previously burn (Brooks and Pyke, 2001). These changes may reduce the golden eagle prey base and, in turn, result in lower fledging rates. In southwestern Idaho for example, Kochert et al. (1999) note that “some pairs abandoned territories after wildfires destroyed jackrabbit habitat adjacent to Snake River Canyon; remaining pairs expanded their ranges and subsumed neighboring vacant territories, resulting in a smaller nesting population.”

6.2 Nest Use

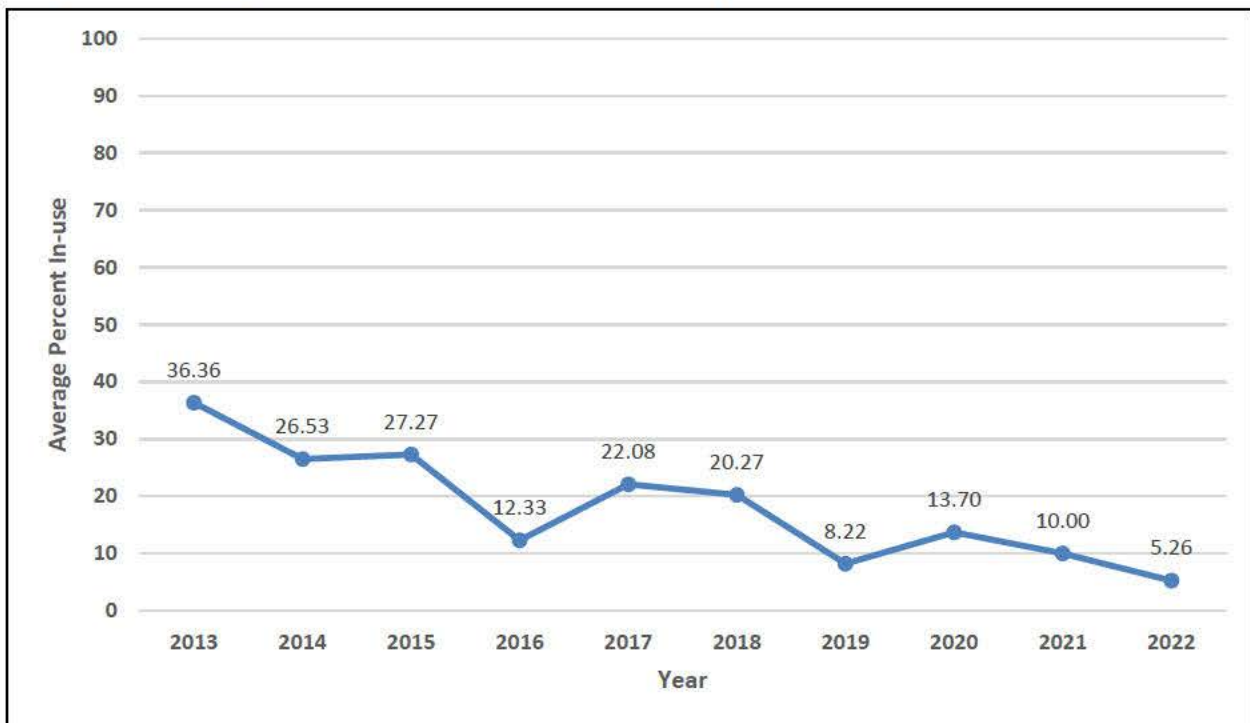
6.2.1 Individual Nests

Collectively, 83 golden eagle nests have been identified within the Study area over the past 10 years. Seven of these nests were not found during the 2022 survey. Of the 76 golden eagle nests surveyed in 2022, four were observed in-use by golden eagles for an average use rate of 0.05 nests within the Study Area. Total number of nests surveyed, total number of nests identified as in-use, and percent of in-use nest per survey are provided in **Table 6** and **Graph 6**.

Table 6 Average and Total Nest Breeding Effort Per Year

Year	Total In-Use Golden Eagle Nests*	Total Surveyed Golden Eagle Nests*	Average Percent In-use Golden Eagle Nests*
2013	4	11	36.36
2014	13	49	26.53
2015	15	55	27.27
2016	9	73	12.32
2017	17	77	22.01
2018	15	74	20.27
2019	6	73	8.22
2020	10	73	13.70
2021	7	70	10.00
2022	4	76	5.26

*Average and totals do not include nests that could not be located. Nests in-use by a species other than golden eagle are included in the totals and average as an alternate nest. It should also be noted that searcher efficiency associated with increased survey effort and the survey area size may be influencing the total number of nests identified from year to year.

Graph 6 Average Percent In-Use Golden Eagle Nests per Year

6.2.2 Territories

Of the 38 territories delineated within the 10-mile radius of the Plan boundary, 36 territories were found and surveyed in 2022. Of these 36 territories, four were documented in-use and 32 were deemed unclassified. The remaining two territories are single-nest territories, and these nests were not able to be located during the 2022 survey. Territory breeding effort per survey year (2013-2022)

is shown in **Table 7** and **Graph 7**.

The reported territory breeding effort rate should be recognized as an estimate because early-season nest attempts that failed may have been missed, and territories that occur along the outer edges of the Study area may not accurately represent actual breeding effort because additional nests may occur within some territories that are outside of the Study area. Accordingly, their influence on the territory's breeding effort determination could be biasing the dataset. Additionally, in some years, not all nests associated with a territory were surveyed because either they did not yet exist, or they could not be located.

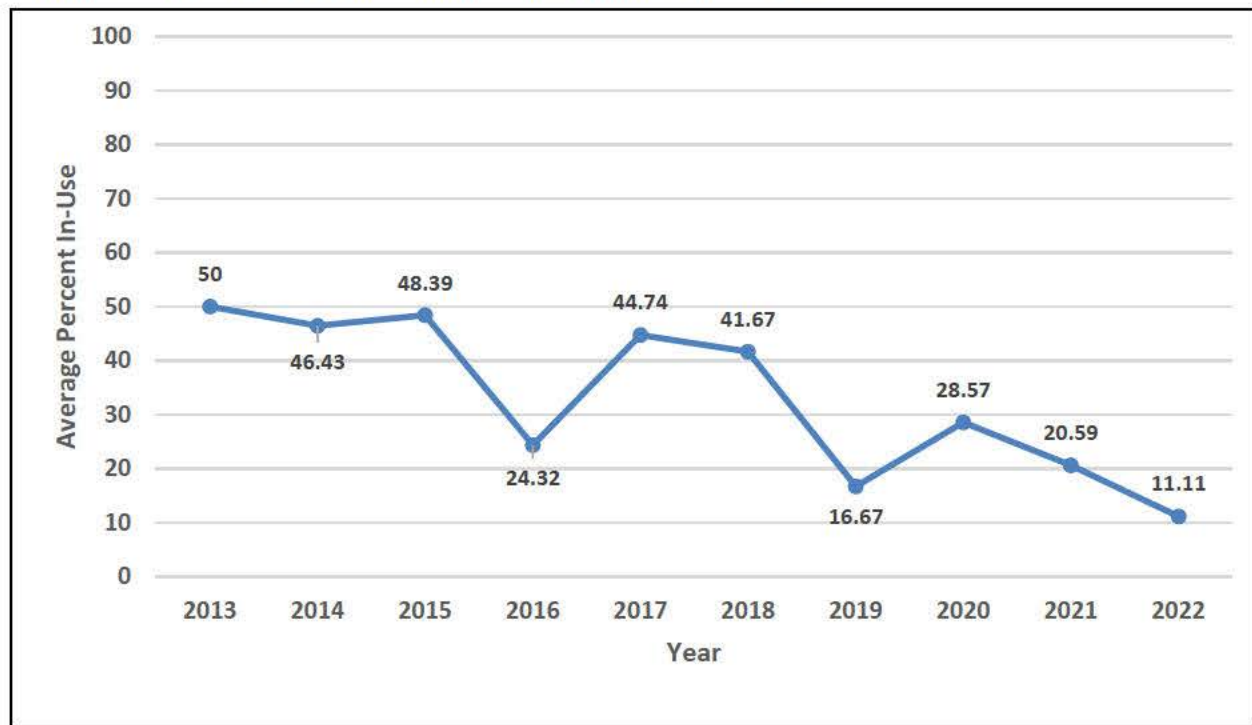
The breeding effort rate of territories within the Study area, determined in this document by nest use rate each year, has ranged from approximately 11 percent to 50 percent over the course of the 10 years of surveys. The highest two recorded values were in 2013 and 2015, which were 50 and 48.39 percent, respectively, but represented a smaller survey area than what is currently being conducted. In general, there is a trend of decreasing territory breeding effort through time, and the previous three surveys (i.e., 2019-2022) are notably lower than territory breeding effort from the literature (Steenhof et al. [1997], McIntyre and Adams [1999]; Slater et al. [2013]). For example, Steenhof et al. (1997) reported 38 to 100 percent territory breeding effort, whereas McIntyre and Adams (1999) reported 33 to 90 percent territory breeding effort. The rates reported in this report are generally lower than the reported breeding effort documented in nearby Utah's western Great Basin found by Slater et al. (2013). Slater et al. (2013) examined long-term trends in rates of territory breeding effort and activity, reporting that long-term rates of territory breeding effort generally ranged from 50 percent to 70 percent breeding effort. It should be noted that climatic factors could have contributed to the lower breeding effort rate during these surveys.

Table 7 Territory Breeding Effort Per Year

Year	Total In-Use Golden Eagle Territories*	Total Surveyed Golden Eagle Territories*	Percent Golden Eagle Territories In-Use*
2013	4	8	50.00
2014	13	28	46.43
2015	15	31	48.39
2016	9	37	24.32
2017	17	38	44.74
2018	15	36	41.67
2019	6	36	16.67
2020	10	35	28.57
2021	7	34	20.59
2022	4	36	11.11

*A golden eagle territory is not considered in-use if in-use by another species. In some years, not all nests associated with a territory were surveyed because either they did not yet exist/were not yet known, or they could not be located.

Graph 7 Average Percent Golden Eagle Territories In-Use Per Year



6.3 Fledged Young

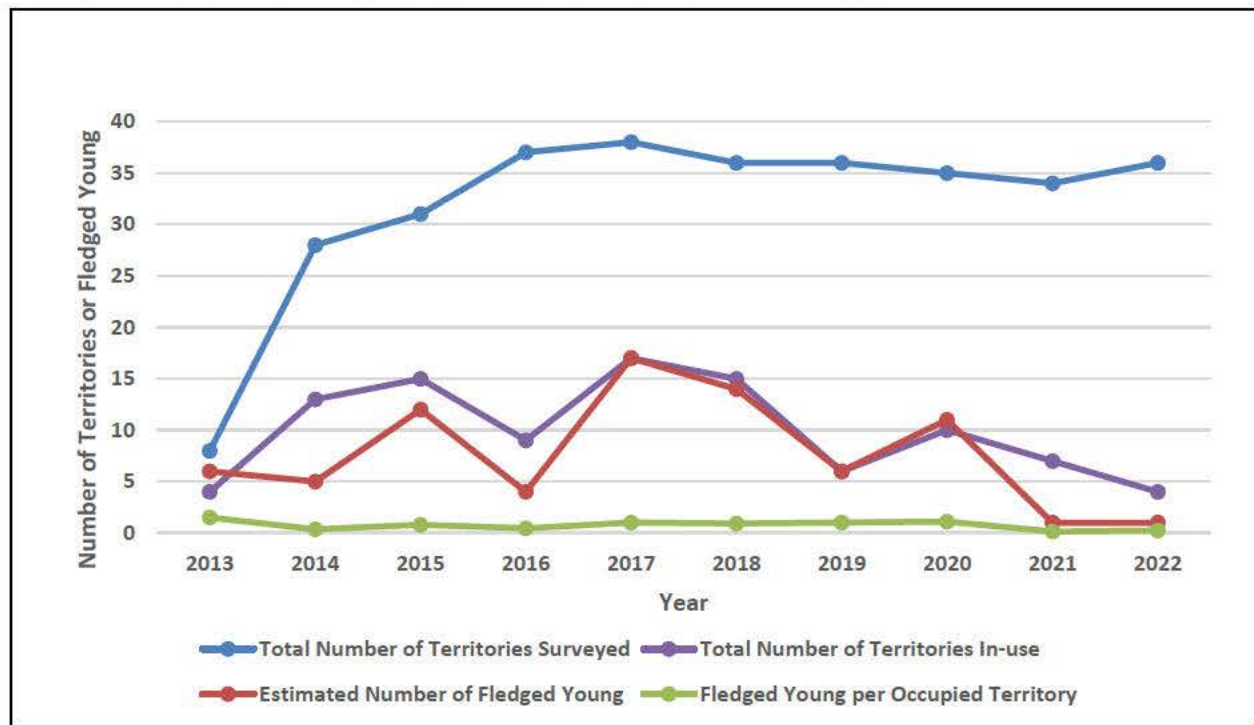
6.3.1 Individual Nests

Data on the number of eggs and fledged young were tallied from reports for surveys conducted from 2013 through 2022, and the average eggs/young observed during the surveys per nest site were calculated as the estimated number of fledged young, as presented in **Table 8**. **Graph 8** shows the overall number of territories surveyed per year compared to the number of fledged young over the ten years of surveys. It should be noted that this data is based on brief aerial and ground surveys. If eggs or young were observed in a nest, it was assumed they fledged unless there is other data to determine a nest unsuccessful.

Table 8 Summary of Territories Surveyed and Fledged Young

Year	Total Number of Territories Surveyed	Total Number of Territories In-Use	Estimated Number of Fledged Young	Fledged Young Per In-Use Territory
2013	8	4	6	1.50
2014	28	13	5	0.38
2015	31	15	12	0.80
2016	37	9	4	0.44
2017	38	17	17	1.00
2018	36	15	14	0.93
2019	36	6	6	1.00
2020	35	10	11	1.10
2021	34	7	1	0.14
2022	36	4	1	0.25

Graph 8 Total Number of Territories Surveyed and Fledged Young



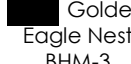
6.3.2 Territories

Of the delineated territories, the Study area and methods are only consistent for the 2017 through 2022 data. The number of fledged young in the Study area has ranged from one to 17 between 2017 and 2022, with an average annual productivity of 0.74 and a range from 0.14 to 1.1 fledged young per occupied territory. This falls largely within values documented for other golden eagle populations, as McIntyre (2002) reports a rate of fledglings per occupied territory from 1988 to 1999 of 0.16 to 1.16. Kochert and Steenhof (2002) cite several studies that indicate the number of successfully fledged young per year from individual nests varies from 0.66 young per nest per year in Alaska to 1.08 young per nest per year in Oregon. Worley (1984) documented a fledging rate of over 1.7 young per nest per year from 27 nests in Elko County studied in 1979 and 1980. Ryser (1985) notes NDOW also documented a fledging rate of 1.7 young per nest per year during this same two-year period (Herron and Lucas, 1979; Herron et al., 1980). Page and Seibert (1973) found 50 nests in Elko County fledged an average of 1.1 young fledged per nest per year.

A summary of 2013 through 2022 territory productivity and success has been provided as **Table 9**. **Graph 8** also presents the overall number of territories surveyed per year, the total number fledged young per year, and fledged young per territory.

Table 9 Summary of Territory Production and Success from 2013 through 2022

Territory	Nest ID	2013			2014			2015			2016			2017			2018			2019			2020			2021			2022		
		Nest Status	Number of Eggs	Number of Fledged Young	Nest Status	Number of Eggs	Number of Fledged Young	Nest Status	Number of Eggs	Number of Fledged Young	Nest Status	Number of Eggs	Number of Fledged Young	Nest Status	Number of Eggs	Number of Fledged Young	Nest Status	Number of Eggs	Number of Fledged Young	Nest Status	Number of Eggs	Number of Fledged Young	Nest Status	Number of Eggs	Number of Fledged Young	Nest Status	Number of Eggs	Number of Fledged Young	Nest Status	Number of Eggs	Number of Fledged Young
1	Golden Eagle Nest BC-1	-	-	-	-	-	-	-	-	-	-	-	-	In-use (GOEA)	-	2	Alternate	0	0	Alternate	0	0	Unknown	0	0	Alternate	0	0	In-use (GOEA)	0	0
2	Golden Eagle Nest BC-3	-	0	0	Alternate	1	1	Alternate	2	2	Alternate	0	0	Alternate	1	1	Alternate	0	0	Alternate	2	2	Alternate	0	0	Alternate	0	0	In-use by other species	0	0
	Golden Eagle Nest BC-4	-			Alternate			Alternate			Alternate			Alternate			Alternate			Alternate			Alternate			Alternate			In-use by other species		
	Golden Eagle Nest CWC-1	-			In-use (GOEA)			Alternate			In-use (GOEA)			In-use (GOEA)			Alternate			Alternate			Alternate			Alternate			Alternate		
	Golden Eagle Nest CWC-2	-			Alternate			In-use (GOEA)			Alternate			Alternate			Alternate			Alternate			Alternate			Alternate			Alternate		
	Golden Eagle Nest CWC-12	-			-			-			-			-			-			In-use (GOEA)			Alternate			Alternate			Alternate		
	Golden Eagle Nest BC-7	-			Alternate			Alternate			Alternate			Alternate			Alternate			Alternate			In-use (GOEA)			Alternate			Alternate		
3	Golden Eagle Nest BC-8	Alternate	1*	1*	Alternate	0	0	Alternate	0	0	Alternate	1	1	Alternate	0	0	Alternate	2	2	Alternate	0	0	Alternate	2	2	Alternate	1	0	Alternate	0	0
	Golden Eagle Nest BC-9	Alternate			Alternate			In-use (GOEA)			Alternate			Alternate			Alternate			Alternate			Alternate			Alternate			Alternate		
	Golden Eagle Nest BC-10	-			-			-			Alternate			Alternate			Alternate			Alternate			Alternate			Alternate			Alternate		
	Golden Eagle Nest BC-11	In-use (GOEA)			Alternate			Alternate			In-use (GOEA)			Alternate			Alternate			Alternate			Alternate			Alternate			Alternate		
	Golden Eagle Nest BC-12	-			Alternate			Alternate			Alternate			Alternate			Alternate			Alternate			Alternate			Alternate			Alternate		

Territory	Nest ID	2013			2014			2015			2016			2017			2018			2019			2020			2021			2022		
		Nest Status	Number of Eggs	Number of Fledged Young	Nest Status	Number of Eggs	Number of Fledged Young	Nest Status	Number of Eggs	Number of Fledged Young	Nest Status	Number of Eggs	Number of Fledged Young	Nest Status	Number of Eggs	Number of Fledged Young	Nest Status	Number of Eggs	Number of Fledged Young	Nest Status	Number of Eggs	Number of Fledged Young	Nest Status	Number of Eggs	Number of Fledged Young	Nest Status	Number of Eggs	Number of Fledged Young			
	Eagle Nest BC-11																														
	 Eagle Nest BC-14	-			-			-			Alternate			Alternate			In-use (GOEA)			Alternate			Alternate			Alternate			Alternate		
	 Golden Eagle Nest BC-15	-			-			-			-			Alternate			Alternate			Alternate			Alternate			In-use (GOEA)			Alternate		
4	 Golden Eagle Nest BC-16	Alternate			In-use (GOEA)			In-use (GOEA)			Alternate			In-use (GOEA)			Alternate			Alternate			Alternate			Alternate	0		Alternate		
	 Golden Eagle Nest BC-17	-			-	1	1	-	2	0	Alternate	0	0	Alternate	2	2	Alternate	0	0	In-use (GOEA)	2	2	Alternate	1	1	Alternate	0		Alternate		
	 Golden Eagle Nest BC-18	-	0	0	-			-			Alternate			Alternate			Alternate			Alternate			In-use (GOEA)			Alternate			Alternate		
	 Golden Eagle Nest BC-19	-			Alternate			Alternate			Alternate			Alternate			Alternate			Alternate			Alternate			Alternate			Alternate		
5	 Golden Eagle Nest BHM-3	Alternate	0	0	Alternate	0	0	Alternate	0	0	Alternate	0	0	Alternate	0	0	Alternate	0	0	Alternate	0	0	Alternate	0	0	Alternate	0	0	Alternate	0	0
6	 Golden Eagle Nest BHM-4	Alternate	0	0	In-use (GOEA)	0	0	Alternate	0	0	Alternate	0	0	Alternate	0	0	Alternate	0	0	Alternate	0	0	Alternate	0	0	Alternate	0	0	In-use by other species	0	0
7	 Golden Eagle Nest BM-2	-	-		-	-		-	-		Alternate	0	0	Alternate	0	0	Not found or not present	0	0	Alternate	0	0	Alternate	0	0	Not found or not present	0	0	Alternate	0	0
8	 Golden Eagle Nest BM-5	-	-		-	-		Alternate	0	0	Alternate	0	0	In-use (GOEA)	1	1	Alternate	0	0	Alternate	0	0	Alternate	0	0	In-use (GOEA)	0	0	Alternate	0	0

Territory	Nest ID	2013			2014			2015			2016			2017			2018			2019			2020			2021			2022		
		Nest Status	Number of Eggs	Number of Fledged Young	Nest Status	Number of Eggs	Number of Fledged Young	Nest Status	Number of Eggs	Number of Fledged Young	Nest Status	Number of Eggs	Number of Fledged Young	Nest Status	Number of Eggs	Number of Fledged Young	Nest Status	Number of Eggs	Number of Fledged Young	Nest Status	Number of Eggs	Number of Fledged Young	Nest Status	Number of Eggs	Number of Fledged Young	Nest Status	Number of Eggs	Number of Fledged Young			
9	Golden Eagle Nest CC-1	-			-			-			Alternate			In-use (GOEA)			Alternate			Alternate			Alternate			Alternate			In-use (GOEA)		
	Golden Eagle Nest CC-3	-	-	-	Alternate	0	0	Alternate	0	0	Alternate ₁	0	0	Alternate	1	1	Alternate	0	0	Alternate	0	0	Alternate	0	0	Not found or not present	0	0	Alternate	0	0
	Golden Eagle Nest CC-4	-			Alternate			Alternate			Alternate			Alternate			Alternate			Alternate			Alternate			Alternate			In-use by other species		
10	Golden Eagle Nest CM-1	-			Alternate			In-use (GOEA)			Alternate			Alternate			In-use (GOEA)			Alternate			In-use (GOEA)			Alternate	0	0	Alternate		
	Golden Eagle Nest CM-2	-			In-use (GOEA)	2	2	Alternate	0	0	In-use (GOEA)	1	1	In-use (GOEA)	1	1	Alternate	1	1	Alternate	0	0	Alternate	0	0	Alternate	0	0	Alternate		
11	Golden Eagle Nest CWC-3	-			-			-			In-use (GOEA)			Alternate			Alternate			Alternate			Alternate			Alternate		0	Alternate		
	Golden Eagle Nest CWC-4	-			-			-			Alternate			In-use (GOEA)			Alternate			Alternate			Alternate			Alternate			Alternate		
	Golden Eagle Nest CWC-5	-	-	-	Alternate	0	0	Alternate	0	0	Alternate	0	0	Alternate	1	1	Alternate	0	0	Alternate	0	0	Alternate	0	0	Alternate	0		Alternate	0	0
	Golden Eagle Nest CWC-6	-			-			Alternate			Alternate			Alternate			Alternate			Alternate			Alternate			Alternate			In-use by other species		
	Golden Eagle Nest CWC-8	-			-			Alternate			Alternate			Alternate			Alternate			Alternate			Alternate			Alternate			Alternate		
12 (USFWS 1)	Golden Eagle Nest FC-1	-	-	-	-	-	-	-	-	-	Alternate	0	0	Alternate	0	0	Not found or not present	-	-	Not found or not present	-	-	Not found or not present	-	-	Not found or not present	-	-	Alternate	0	0

Territory	Nest ID	2013			2014			2015			2016			2017			2018			2019			2020			2021			2022		
		Nest Status	Number of Eggs	Number of Fledged Young	Nest Status	Number of Eggs	Number of Fledged Young	Nest Status	Number of Eggs	Number of Fledged Young	Nest Status	Number of Eggs	Number of Fledged Young	Nest Status	Number of Eggs	Number of Fledged Young	Nest Status	Number of Eggs	Number of Fledged Young	Nest Status	Number of Eggs	Number of Fledged Young	Nest Status	Number of Eggs	Number of Fledged Young	Nest Status	Number of Eggs	Number of Fledged Young	Nest Status	Number of Eggs	Number of Fledged Young
13 (USFWS 2)	Golden Eagle Nest FC-8	-			Alternate			Alternate			Alternate			Alternate			Alternate			Alternate			Alternate			Alternate			Alternate		
	Golden Eagle Nest FC-9	-	-	-	Alternate	0	0	Alternate	0	0	Alternate	0	0	Alternate	0	0	Alternate	0	0	Alternate	0	0	Alternate	2	2	Not found or not present	0	0	Alternate	0	0
	Golden Eagle Nest FC-10	-			Alternate			Alternate			Alternate			Alternate			Alternate			Alternate			In-use (GOEA)			Alternate			Alternate		
14	Golden Eagle Nest GAP-1	Alternate			Alternate			Alternate			Alternate			Alternate			Alternate			Alternate			Alternate			Alternate			Alternate		
	Golden Eagle Nest GAP-2	Alternate			In-use (GOEA)			Alternate			Alternate			Alternate			Alternate			Alternate			Alternate			Alternate			Alternate		
	Golden Eagle Nest GAP-5	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	In-use (GOEA)	1	0	In-use (GOEA)	0	0	In-use (GOEA)	0	0	Alternate	2	0	Alternate	0	0
	Golden Eagle Nest GAP-6	-			-			-			-			-			-			-			Alternate			Alternate			Alternate		
	Golden Eagle Nest GAP-7	-			-			-			-			-			-			-			In-use (GOEA)			Alternate			Alternate		
15 (USFWS 3)	Golden Eagle Nest HC-2	-	-	-	-	-	-	Alternate	0	0	Alternate	0	0	Alternate	0	0	Alternate	0	0	Alternate	0	0	Alternate	0	0	Alternate	0	0	Alternate		
	Golden Eagle Nest HC-3	-			-			Alternate			Alternate			Alternate			Alternate			Alternate			Alternate			Alternate			Not found or not present		
16 (USFWS 4)	Golden Eagle Nest HC-8	-	2	2	In-use (GOEA)	0	0	Alternate	2	1	-	1	0	Alternate	2	2	Alternate	1	1	Alternate	2	2	Alternate	0	0	Alternate	2	1	Alternate	1	1
	Golden Eagle Nest MT-1	In-use (GOEA)			Alternate			In-use (GOEA)			In-use (GOEA)			In-use (GOEA)			In-use (GOEA)			In-use (GOEA)			Alternate			In-use (GOEA)			In-use (GOEA)		

Territory	Nest ID	2013			2014			2015			2016			2017			2018			2019			2020			2021			2022		
		Nest Status	Number of Eggs	Number of Fledged Young	Nest Status	Number of Eggs	Number of Fledged Young	Nest Status	Number of Eggs	Number of Fledged Young	Nest Status	Number of Eggs	Number of Fledged Young	Nest Status	Number of Eggs	Number of Fledged Young	Nest Status	Number of Eggs	Number of Fledged Young	Nest Status	Number of Eggs	Number of Fledged Young	Nest Status	Number of Eggs	Number of Fledged Young	Nest Status	Number of Eggs	Number of Fledged Young	Nest Status	Number of Eggs	Number of Fledged Young
17	Golden Eagle 1 Nest HDC-1	-	-	-	Alternate	-	-	Alternate	-	-	Alternate	-	-	Alternate	-	-	Alternate	-	-	Alternate	-	-	Alternate	-	-	Alternate	-	-	Alternate	-	-
	Golden Eagle 1 Nest HDC-2	-	-	-	In-use (GOEA)	0	0	In-use (GOEA)	0	0	In-use (GOEA)	0	0	In-use (GOEA)	1	1	In-use (GOEA)	1	1	Alternate	0	0	Alternate	0	0	In-use (GOEA)	0	0	Alternate	-	-
18	Golden Eagle 2 Nest IC-1	-	-	-	-	-	-	-	-	-	Alternate	-	-	Alternate	-	-	Alternate	-	-	Alternate	-	-	Alternate	-	-	Alternate	-	-	Alternate	-	-
	Golden Eagle 2 Nest IC-2	-	-	-	-	-	-	In-use (GOEA)	2	2	Alternate	0	0	Alternate	0	0	In-use (GOEA)	0	0	Alternate	0	0	Alternate	0	0	Alternate	0	0	Alternate	0	0
19	Golden Eagle 2 Nest LCC-1	-	-	-	-	-	-	-	-	-	Alternate	0	0	Alternate	0	0	Alternate	0	0	Alternate	0	0	Alternate	0	0	Alternate	0	0	Alternate	0	0
20 (USWFS 5)	Golden Eagle Nest MC-1	-	-	-	-	-	-	-	-	-	Alternate	-	-	Alternate	-	-	Not found or not present	-	-	Not found or not present	-	-	Not found or not present	-	-	Not found or not present	-	-	Not found or not present	-	-
	Golden Eagle Nest MC-2	-	-	-	-	-	-	-	-	-	Alternate	0	0	Alternate	0	0	Alternate	0	0	Alternate	0	0	Alternate	0	0	Alternate	0	0	Alternate	-	-
21	Golden Eagle Nest MC-3	-	-	-	Alternate	2	2	Alternate	1	1	In-use (GOEA)	1	1	Alternate	0	0	Alternate	1	1	Alternate	0	0	Alternate	0	0	Alternate	0	0	Alternate	-	-
	Golden Eagle Nest MC-4	-	-	-	In-use (GOEA)	-	-	In-use (GOEA)	-	-	Alternate	-	-	Alternate	-	-	In-use (GOEA)	-	-	Alternate	-	-	In-use (GOEA)	-	-	Alternate	-	-	In-use (GOEA)	-	-
22	Golden Eagle Nest MLC-2	-	-	-	In-use (GOEA)	1	1	Alternate	0	0	Alternate	0	0	In-use (GOEA)	2	2	In-use (GOEA)	3	3	In-use (GOEA)	0	0	Alternate	0	0	In-use (GOEA)	2	0	Alternate	0	0
	Golden Eagle Nest MLC-3	-	-	-	Alternate	-	-	Alternate	-	-	Alternate	-	-	Alternate	-	-	Alternate	-	-	Alternate	-	-	Alternate	-	-	Alternate	-	-	Alternate	-	-
23 (USFWS 6)	Golden	-	-	-	Alternate	0	0	Alternate	0	0	Alternate	0	0	In-use (GOEA)	1	0	Alternate	0	0	Alternate	0	0	In-use (GOEA)	0	0	Alternate	0	0	Alternate	0	0

Territory	Nest ID	2013			2014			2015			2016			2017			2018			2019			2020			2021			2022		
		Nest Status	Number of Eggs	Number of Fledged Young	Nest Status	Number of Eggs	Number of Fledged Young	Nest Status	Number of Eggs	Number of Fledged Young	Nest Status	Number of Eggs	Number of Fledged Young	Nest Status	Number of Eggs	Number of Fledged Young	Nest Status	Number of Eggs	Number of Fledged Young	Nest Status	Number of Eggs	Number of Fledged Young	Nest Status	Number of Eggs	Number of Fledged Young	Nest Status	Number of Eggs	Number of Fledged Young	Nest Status	Number of Eggs	Number of Fledged Young
	Eagle Nest MT-2																														
24	Golden Eagle Nest MT-3	-	-	-	Alternate	0	0	Alternate	0	0	Alternate	0	0	Alternate	0	0	Alternate	0	0	Alternate	0	0	Not found or not present	-	-	Not found or not present	-	-	Not found or not present	-	-
25	Golden Eagle Nest PC-1	-			-			-			Alternate			Alternate			Alternate			Alternate			Alternate			Not found or not present			Not found or not present		
	Golden Eagle Nest RC-1	-	-	-	-	-	-	-	-	-	Alternate	0	0	In-use (GOEA)	1	1	In-use (GOEA)	0	0	Alternate	0	0	Alternate	0	0	Alternate	0	0	Alternate	█	█
26	Golden Eagle Nest PP-1	-	-	-	In-use (GOEA)	0	0	Alternate	0	0	Alternate	0	0	Alternate	0	0	Alternate	0	0	Alternate	0	0	Alternate	0	0	Alternate	0	0	In-use by other species	0	0
27	Golden Eagle Nest RH-1	-			Alternate			-			Alternate			Alternate			Alternate			Alternate			Alternate			Alternate			In-use by other species		
	Golden Eagle Nest RH-2	-	-	-	Alternate	0	0	Alternate	0	0	Alternate	0	0	Alternate	0	0	Alternate	0	0	Alternate	0	0	Alternate	0	0	Alternate	0	0	Alternate	0	0
28	Golden Eagle Nest RH-3	-			Alternate			In-use (GOEA)			Alternate			In-use (GOEA)			In-use (GOEA)			Alternate			Alternate			Alternate			Alternate		
	Golden Eagle Nest RH-4	-	-	-	Alternate	0	0	Alternate	1	1	Alternate	0	0	Alternate	1	1	Alternate	1	1	Alternate	0	0	Alternate	0	0	Alternate	0	0	Alternate	0	0
	Golden Eagle Nest RH-07	-			-			-			-			-			-			-			Alternate			Alternate			Alternate		
29	Golden Eagle Nest RM-11	-			Alternate			Alternate			In-use (GOEA)			Alternate			Alternate			Alternate			Alternate			Alternate			Alternate		
	Golden Eagle Nest RM-12	-	-	-	Alternate	0	0	In-use (GOEA)	0	0	Alternate	0	0	Alternate	0	0	Alternate	0	0	Alternate	0	0	Alternate	0	0	Alternate	0	0	Alternate	█	█
30	Golden Eagle Nest RP-1	-	-	-	-	0	0	-	0	0	-	0	0	Alternate	0	0	In-use (GOEA)	2	1	Alternate	0	0	In-use (GOEA)	2	2	Alternate	0	0	Alternate	0	0

Territory	Nest ID	2013			2014			2015			2016			2017			2018			2019			2020			2021			2022		
		Nest Status	Number of Eggs	Number of Fledged Young	Nest Status	Number of Eggs	Number of Fledged Young	Nest Status	Number of Eggs	Number of Fledged Young	Nest Status	Number of Eggs	Number of Fledged Young	Nest Status	Number of Eggs	Number of Fledged Young	Nest Status	Number of Eggs	Number of Fledged Young	Nest Status	Number of Eggs	Number of Fledged Young	Nest Status	Number of Eggs	Number of Fledged Young	Nest Status	Number of Eggs	Number of Fledged Young	Nest Status	Number of Eggs	Number of Fledged Young
	Golden Eagle Nest RP-2	-			Alternate			Alternate			Alternate			Alternate			Alternate			Alternate			Alternate			Alternate			Alternate		
31	Golden Eagle Nest TR-1	-	-	-	-	-	-	-	-	-	Alternate	0	0	In-use (GOEA)	0	0	Alternate	0	0	Alternate	0	0	Not found or not present	0	0	Not found or not present	0	0	Not found or not present	0	0
32	Golden Eagle Nest TR-2	-		-	In-use (GOEA)			In-use (GOEA)			Alternate			Alternate			Alternate			Alternate			Alternate			Alternate			Alternate		
	Golden Eagle Nest TR-3	-	-	-		0	0		1	1		0	0		0	0		0	0	Not found or not present	0	0	Not found or not present	0	0	Not found or not present	0	0	Not found or not present		
33	Golden Eagle Nest TR-4	-	-	-	Alternate	0	0	Alternate	0	0	Alternate	0	0	In-use (GOEA)	1	1	In-use (GOEA)	1	1	In-use (GOEA)	1	1	Alternate	0	0	In-use (GOEA)	1	0	Alternate	0	0
34	Eagle Nest TR-5	-			Alternate			In-use (GOEA)			Alternate			Alternate			Alternate			Alternate			Alternate			Alternate			In-use by other species		
	Golden Eagle Nest TR-6	-			-			-			In-use (GOEA)			Alternate			Alternate			Alternate			In-use (GOEA)			Alternate			Alternate		
	Golden Eagle Nest TR-7	-	-	-	Alternate	0	0	Alternate	0	0	Alternate	1	1	Alternate	0	0	Not found or not present	1	1	Not found or not present	0	0	Alternate	1	1	Alternate	0	0	Alternate	0	0
	Golden Eagle Nest TR-12	-			-			-			-			-			In-use (GOEA)			Not found or not present			Not found or not present			Not found or not present			Not found or not present		
35	Golden Eagle Nest TR-8	-	-	-	Alternate	0	0	Alternate	0	0	Alternate	0	0	In-use (GOEA)	0	0	Alternate	0	0	Alternate	0	0	Alternate	0	0	Alternate	0	0	Alternate	0	0
36	Golden Eagle Nest TR-9	-	-	-	In-use (GOEA)	0	0	In-use (GOEA)	0	0	Alternate	0	0	Alternate	0	0	Alternate	0	0	Alternate	0	0	Alternate	0	0	Alternate	0	0	Alternate	0	0

Territory	Nest ID	2013			2014			2015			2016			2017			2018			2019			2020			2021			2022		
		Nest Status	Number of Eggs	Number of Fledged Young	Nest Status	Number of Eggs	Number of Fledged Young	Nest Status	Number of Eggs	Number of Fledged Young	Nest Status	Number of Eggs	Number of Fledged Young	Nest Status	Number of Eggs	Number of Fledged Young	Nest Status	Number of Eggs	Number of Fledged Young	Nest Status	Number of Eggs	Number of Fledged Young	Nest Status	Number of Eggs	Number of Fledged Young	Nest Status	Number of Eggs	Number of Fledged Young	Nest Status	Number of Eggs	Number of Fledged Young
37 (USFWS 7)	Golden Eagle Nest TR-11	-			Alternate			Alternate			Alternate			Alternate			In-use (GOEA)			Alternate			Alternate			Alternate			Alternate		
	Golden Eagle Nest WC-2	-	1*	1*	-	0	0	Alternate	2	2	Alternate	0	0	Alternate	0	0	In-use (GOEA) ²	1	1	Alternate	0	0	Alternate	0	0	Alternate	0	0	Alternate	0	0
	Golden Eagle Nest WC-3	In-use (GOEA)			In-use (GOEA)			In-use (GOEA)			Alternate			Alternate			Alternate			Alternate			Alternate			Alternate			Alternate		
38 (USFWS 8)	Golden Eagle Nest WC-4	In-use (GOEA)	2	2	Alternate	0	0	In-use (GOEA)	0	0	Alternate	0	0	In-use (GOEA)	0	0	Alternate	0	0	Alternate	0	0	In-use (GOEA)	3	3	Alternate	0	0	Alternate	0	0

Not including territories where all nests could not be found.
*Report claims young already fledged
¹Nest destroyed
²One or two young, so assumed only one egg and one young
The USFW ID references the territory name in the Eagle Conservation Plan

7.0 RISK ASSESSMENT

A major component of the risk assessment is to identify Project activities that could potentially impact golden eagles and may result in a take. This section presents a discussion of the assessment of the level of risk from the Project to the golden eagle breeding population in the vicinity of the Project. Principal risks to golden eagles from underground mining are generally low, and include activities associated with roads, utilities, exploration, and other proposed/authorized mining activities listed in **Section 2.0**. A major risk-factor to golden eagles associated with an active underground mining operation will likely occur during the courtship, nesting, and fledging season. This is especially true when golden eagle breeding territories are located within one mile of surface activity.

A summary of proposed take to golden eagles anticipated from activities associated with Project is provided in **Table 10**. Discussion of the risk that could be posed by the mine to golden eagles is described below.

Table 10 Summary of Impacts to Eagles at the Goldrush Mine

Eagle Impact	Goldrush Impacts
Direct take (mortality)	None anticipated, low risk: Sections 7.2 and 7.3
Indirect take (loss of productivity from disturbance)	Section 5.0: Eight golden eagle breeding pairs' territories
Habitat loss	Section 7.1
Territory loss (number of territories)	None anticipated, low risk: Section 5.0: Eight golden eagle breeding pairs' territories
Nest removal (number of nests for each territory involved)	None

7.1 Habitat-Related Risks

The proposed Goldrush Mine would include approximately 2,769.7 acres of total surface disturbance. The Proposed Action (wildlife alternative) would remove approximately 1,057 acres of potential golden eagle foraging habitat within the area of analysis, which is less than one percent of the total potential golden eagle foraging habitat within the Study area (273,162 acres). The acres of eagle foraging habitat were calculated based on the overlap of Project disturbance within Inter-Mountain Basins Big Sagebrush Shrubland (491 acres), Great Basin Xeric Mixed Sagebrush Shrubland (199 acres), and Inter-Mountain Basins Montane Sagebrush Steppe (367 acres) habitat types. These habitat types are believed to provide the highest-value native foraging habitat due to higher abundance of golden eagle prey base. The majority of the golden eagle foraging habitat would be reclaimed and would be available once reclamation is complete. Reclamation activities would be implemented throughout the life of the mine and would occur in full once the mine life is complete. Reduction of habitat because of direct mining disturbance has the potential to impact golden eagles. Specifically, impacts to functional shrublands that support jackrabbit populations could influence prey availability to golden eagles, especially during the breeding season when adults are foraging routinely to provide adequate food for their young. The number of fledged young in the Study area has ranged from one to 17 between 2017 and 2022, with an average annual productivity of 0.74 and a range from 0.14 to 1.1 fledged young per occupied territory. This falls largely within values documented for other

golden eagle populations, as McIntyre (2002) reports a rate of fledglings per occupied territory from 1988 to 1999 of 0.16 to 1.16. Productivity combined with the low percent of foraging habitat removed due to the Proposed Action indicates that food scarcity because of direct loss of habitat has not appeared to be a limiting factor to the local golden eagle breeding population in the past.

7.2 Utilities-Related Risks

Utility structures pose a risk to a variety of birds, including raptors such as golden eagles, and may cause mortality through accidental collisions and electrocutions. Larger birds that inhabit open habitat appear to be at greater risk for electrocution due to the lack of natural perches and nesting sites (APLIC and USFWS, 2005). Electrocution occurs when a bird completes an electric circuit by simultaneously touching two energized parts, or an energized part and a grounded part, of the electrical structure. Inadequate conductor and/or phase spacing may allow birds to bridge electrical parts, which results in electrocution. Birds of all sizes are at-risk, especially on utility hardware such as transformers, which have many energized parts near one another (APLIC and USFWS, 2005). Risk for avian electrocution on distribution lines increases when the distance between conductors is less than the wingspan or height of a landing or perching bird, or hardware or equipment cases are grounded and near energized conductors, parts, or jumper wires (APLIC and USFWS, 2005). NGM has committed to the conservation measures (see **Section 8.0**), which would reduce risk of electrocution to golden eagles. Additionally, NGM follows the *Suggested Practices for Raptor Protection on Power Lines*, per APLIC (2006) which provides guidance on power line construction and design on all future transmission and power lines.

7.3 Vehicle Collision-Related Risks

Mobile equipment (i.e., vehicles) used in operations at the mine or traveling to or from the mine could strike and injure or kill wildlife. Road-killed wildlife may attract scavenging eagles, which in turn could be injured or killed by vehicle collision. As NGM already implements conservation measures associated with reducing road mortality risk (see **Section 8.0**), the potential for eagle mortality due to vehicle collision at the Goldrush Mine is low. Additional traffic controls can be implemented by NGM as necessary through direct communication regarding road hazards.

8.0 AVOIDANCE AND MINIMIZATION MEASURES

NGM will implement measures required by other agencies and jurisdictions to conduct the activity at the Goldrush Mine, including Applicant-committed Environmental Protection Measures (EPMs) that focus on golden eagles. Monitoring will be implemented over the life of the Project. **Table 11** presents a summary of the NGM-committed golden eagle EPMs with monitoring and a schedule for implementation at the Goldrush Mine that would be applicable with the issuance of the permit for the Goldrush Mine.

Table 11 Goldrush Mine Golden Eagle EPM Monitoring Schedule

EPM	Monitoring Actions	Duration
EPM-1	Territory occupancy ground surveys will be conducted for nests within the eight golden eagle territories within one-mile of surface disturbance from the Goldrush Mine that are part of the disturbance take permit in January or mid-March (i.e., the preferred survey window) to assess golden eagle territory occupancy and document in-use nests as appropriate. Every attempt will be made to conduct the ground surveys mid-to-late-February. NGM will coordinate with the USFWS prior to the ground surveys occurring to communicate existing conditions on the ground that may prohibit ground surveys to some nest sites (e.g., heavy snow, access concerns, golden eagle disturbance, etc.). This communication prior to ground surveys being conducted will allow for flexibility in the monitoring requirements based on conditions at the site during the preferred survey window. NGM would coordinate with the USFWS and the BLM to discuss monitoring as the season progresses and assess if monitoring requirements need to be modified based on site conditions, access concerns, or potential disturbance to nesting golden eagles. Ground survey observations will focus in the areas around nests, nest cliffs, and other suitable nesting habitat. Specific observation criteria used for the ground survey for establishing golden eagle territory occupancy include: a. An adult eagle within 500 meters of a nest within the territory, when the bird is clearly in view of the nest, and when the eagle's presence is clearly not a rapid pass-over of the nest. b. Two adults, or an adult and a sub-adult bird paired within the territory. c. Reproductive or territorial behavior within the territory: i. Courtship behavior, undulating flight, copulation ii. Territorial defense iii. Nest building behaviors (stick carrying, nest maintenance). A follow up ground survey will be conducted for those nests that were determined to contain breeding attempts during the above discussed surveys. Success at golden eagle nests is determined by nestlings greater than 51 days old, which is primarily late-May and peaking mid-June. Aerial surveys will be conducted later during the breeding season following	Annually until Permit Expiration

EPM	Monitoring Actions	Duration
	Goldrush Mine Conservation Measure 2 (CM-3) and complying with the protocol outlined in Pagel et al. (2010). Every attempt will be made to conduct the first aerial survey in mid-March and the follow up aerial survey in mid-April.	
EPM-2	If new nests are identified within the territories that are part of the disturbance take permit during the 24-year term of the take permit, NGM will coordinate with the USFWS regarding the new nest, and these new nests will be monitored as discussed above, concurrently with the other nests within the territories that are part of the disturbance take permit. After ground surveys are completed, Goldrush Mine CM-3 would apply to nests within a territory that have a disturbance take permit, and in compliance with Pagel et al (2010) protocol. If new nests are identified within one mile of disturbance, or two miles of blasting, that are outside of a territory with a disturbance take permit, NGM will inform and coordinate with the USFWS and the BLM regarding the new nest sites that are outside the territories with a disturbance take permit. Goldrush Mine CM-1 and Goldrush Mine CM-3 would apply for new nests identified outside of a territory with a disturbance take permit, in coordination with USFWS and the BLM. The golden eagle breeding season for Goldrush Mine Project is considered January 15 through July 31. Unless a disturbance take permit is in place, golden eagle nests with concern for potential disturbance should be considered not in-use for a given breeding season if nests are confirmed not in-use on April 15 or later. Prior to April 15, nests are considered potentially in-use unless an alternate nest within the same territory is already confirmed in-use. Spatial disturbance buffers (one-mile for surface disturbance or two-mile for blasting) would be adhered to until nests are confirmed not in-use, after July 31, or 4 weeks after nestlings fledge (if monitoring confirms approximate fledging date).	Annually until Permit Expiration

Additionally, NGM currently employs conservation measures associated with current authorized activities at the Cortez Mine (BLM 2008a; BLM 2015; BLM 2019) and has committed to continuing to employ these measures at the Goldrush Mine (Stantec 2019b). Existing conservation measures specific to raptors, including golden eagles, are provided in **Table 12**.

In addition to the conservation measures presented in **Table 12**, NGM has other measures that contribute to the conservation of eagles at the Goldrush Mine. Some of these measures coincide with permit requirements and others have been implemented through recommendations by agencies. Speed limits of not more than 35 miles per hour will be posted on the Horse Canyon Haul Road to maintain operational safety. Although not specific to golden eagle protection, the implementation and continuation of the following plans will continue to benefit golden eagle conservation: 1) Noxious Weed Control Plans; 2) Fire Control Plans; 3) Solid and Hazardous Waste Management Plans; and 4) Reclamation Plans.

Table 12 Goldrush Mine Conservation Measures

Number	Conservation Measure	Source(s)
CM-1	In the event that initiation of the Project should occur during the raptor nesting season (March 1 through July 31, April 1 through July 31 for burrowing owls, and January 15 through July 31 [for the Goldrush Mine Project] for golden eagles), a raptor survey will be conducted. Project-related disturbance for a specific location will be conducted within 14 days of the survey, or another survey will be conducted. If active nests are located, or if other evidence of nesting (i.e., mated pairs, territorial defense, carrying nesting material, transporting food) is observed, a protective buffer (the size depending on the habitat requirements of the species and location of the nest) will be established around the nests following consultation with the BLM resource specialist. No construction will occur within the avoidance buffer until the birds are no longer actively breeding or rearing young, or until the young have fledged.	BLM, 2008a; updated in BLM, 2015; BLM, 2019; Stantec, 2019b
CM-2	To protect nesting birds, removal of migratory bird habitat on currently undisturbed lands in the NGM Goldrush Operations Area will be avoided to the extent possible between March 1 and July 31. Should removal of habitat be required during this period, NGM will coordinate with the BLM and NDOW to conduct migratory bird nesting surveys and implement appropriate mitigation, such as buffer zones around occupied nests, as needed. Project-related disturbance for a specific location will be conducted within 14 days of the survey, or another survey will be conducted.	BLM, 2008a; updated in BLM, 2015; BLM, 2019; Stantec, 2019b
CM-3	Raptor surveys will be conducted annually during the raptor breeding season (March 1 through July 31) utilizing the methods outlined in Pagel et al. (2010). The survey area will include the NGM Cortez Mine and Goldrush Mine Operations Area plus a 10-mile buffer. Two rotor-wing (up to three helicopter) aerial surveys and subsequent ground surveys of occupied nests will be conducted. The annual survey report will be provided to the BLM.	BLM, 2015; BLM, 2019
CM-4	Transmission lines will be designed and constructed in accordance with applicable regulations to minimize raptor electrocution and collision potential. To minimize the collision potential for foraging raptors and other birds, standard safe designs as outlined in <i>Reducing Avian Collisions with Power Lines</i> (APLIC, 2012) will be incorporated, as applicable. To minimize the potential for electrocution of raptor species attempting to perch on the lines in areas of identified avian concern, standard safe designs as outlined in <i>Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006</i> (APLIC, 2006) and <i>Avian Protection Plan Guidelines</i> (APLIC and USFWS, 2005) will be incorporated, as applicable.	BLM, 2008a; updated in BLM, 2015; BLM, 2019; Stantec, 2019b
CM-5	To minimize potential mine-related effects to perennial surface waters, the site-specific contingency mitigation measures developed for identified perennial waters within the currently authorized operations' modeled groundwater drawdown area will be implemented if monitoring data indicate that an observed reduction in flow is attributable to mine-induced groundwater drawdown.	BLM 2011a; BLM 2011b; updated in BLM, 2019

Number	Conservation Measure	Source(s)
CM-9	NGM will voluntarily coordinate with the BLM and NDOW to develop new wetland/riparian areas and/or enhance existing wetland/riparian areas at off-site locations to address the direct loss of wetland/riparian vegetation. The loss of wetland/riparian vegetation will be replaced at a 2:1 ratio (i.e., for every acre of wetland/riparian vegetation removed or disturbed by mine development or groundwater drawdown, two acres of wetland/riparian vegetation will be created and/or enhanced). NGM in coordination with a BLM botanist and NDOW will identify appropriate wetland/riparian species to be seeded or transplanted in these locations. Alternately, local existing areas of wetland/riparian vegetation unaffected by mine-related groundwater drawdown will be identified in coordination with the BLM and NDOW for enhancement. Enhancement methods could include, but will not be limited to, the use of BLM-approved fencing to minimize livestock impacts, implementation of weed controls, and/or supplemental planting or seeding, as appropriate.	BLM, 2008b; updated in BLM, 2019 Stantec, 2019b
CM-10	NGM will continue its mandatory employee education program for all personnel to minimize wildlife/vehicle-related impacts during operation.	BLM, 2008b; Stantec, 2019b

*Please refer to **Table 11** for golden eagle specific EPMs

9.0 MONITORING AND ADAPTIVE MANAGEMENT

Golden eagle surveys have been conducted in the vicinity of the Plan boundary since 2013. Recent inventory and monitoring efforts follow Pagel et al. (2010), which is the standard golden eagle survey protocol accepted by the USFWS. In June 2023, the USFWS issued a supplemental protocol (USFWS 2023) that updates the recommended protocols and timing for golden eagle monitoring and nest surveys. Coordination between NGM and USFWS will be required to finalize and implement the new protocols as appropriate. Surveys focus on completing a thorough inventory of nests within a recommended 10-mile radius and capturing information regarding territory breeding effort, nest use rate, productivity, and success. At least two aerial surveys are conducted annually during the Goldrush Mine Project golden eagle breeding season (January 15– July 31), with the surveys conducted at least one month apart. Early season breeding effort surveys are usually conducted between January–mid-March, with follow-up surveys ideally conducted between March–mid-April. Recent USFWS supplemental protocols (USFWS 2023) have recommended ground-based territory occupancy surveys, however early season aerial surveys may be conducted if land access, weather, road conditions, or other constraints hinder ground surveys. A final ground-based survey may also be conducted late May through June to assess golden eagle breeding success.

NGM will continue aerial and ground surveys of the eagle population within the 10-mile radius of the Plan boundary for the duration of mine operations. Monitoring objectives include: 1) to track territory occupancy, breeding effort, breeding rate, productivity, and success of nests/territories within one mile of Goldrush Mine activities; and 2) to further delineate and refine the understanding of eagle territories within the 10-mile radius. As needed, golden eagle nests within proximity to active mining will be monitored to document nest use rate. Reports associated with this monitoring will be prepared and provided as specified in the take permit conditions.

For adaptive management purposes, verification of implemented avoidance and minimization measures, as provided in **Section 8.0**, is necessary. NGM currently has a monitoring and reporting system for incidents related to wildlife fatality. Any incident that results in wildlife fatality or death, including golden eagles, must be reported immediately to USFWS, and included in quarterly NDOW reporting.

NGM will continue to monitor the area golden eagle population for additional golden eagle nests. During the life of the Goldrush Mine Project, NGM recognizes the possibility for new construction of golden eagle nests within the Plan boundary. If a previously undocumented nest is identified, NGM will implement the decision tree as shown below. This decision tree is applicable to scenarios where a new nest is encountered, and potential indirect disturbance could occur. In scenarios where nest removal is necessary to avoid harm to the new nest, a new permit application is required. During the Goldrush Mine life, it is possible that golden eagles will build new nests in unforeseeable locations in the area. The decision tree has been created to guide NGM on how to appropriately deal with these new nests. The decision tree shows the process for monitoring, avoiding, and coordinating with USFWS on new golden eagle nests. A larger format of **Graph 9** has been included as **Appendix B**.

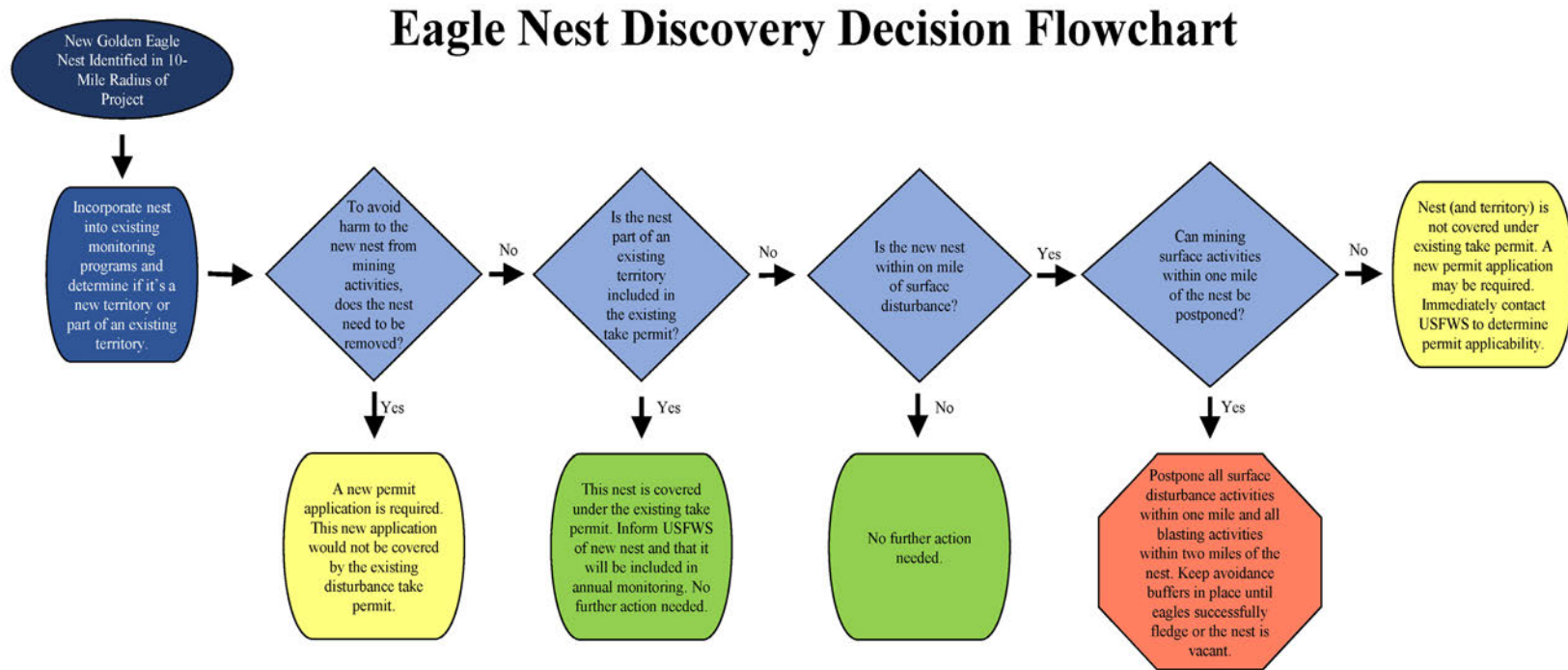
10.0 COMPENSATORY MITIGATION

Compensatory mitigation would be conducted within the Pacific Flyway Eagle Management Unit (EMU). The Applicant would provide compensatory mitigation at the required 1.2:1 ratio by retrofitting electric utility poles, as discussed in the 2016 Programmatic Environmental Impact Statement (USFWS 2016). The intent would be to minimize the potential for golden eagle electrocutions and ensure that the effects of golden eagle incidental take are offset at the EMU population level. The amount of compensatory mitigation required for the lost productivity has been determined through the Service's Golden Eagle Resource Equivalency Analysis (USFWS, 2013). The permit would require mitigation for the annual disturbance take of eight golden eagle breeding territories for up to 24 years at the Goldrush Mine.

Long-term eagle incidental take permits require the USFWS to conduct five-year reviews. Therefore, the mitigation could be paid in five-year cycles, with the first payment occurring upon permit issuance. During the five-year review process, the USFWS would evaluate if take occurred for each known breeding territory in each year. For example, should nest disturbance occur within one mile of a golden eagle nest during the courtship phase, or egg-laying period of the breeding season (January 15–April 15), the USFWS would assume NGM's activities prevented eagles from breeding and a take incident occurred. If NGM's data validate no disturbance occurred within one mile of a breeding pair's nest site until after April 15, in a given year, and monitoring confirms nests are not in use, NGM could proceed with its activities and the USFWS would determine no take occurred. The USFWS would also consider use of alternate nests within a given territory when evaluating whether take occurred as a result of NGM's mine-related activities. After assessing how many take incidents occurred during the first five years, the USFWS would then evaluate how much compensatory mitigation might be either credited or owed for the next five-year cycle, or remainder of the permit duration.

Currently, the estimated number of retrofits for the first five-year cycle range from 387 to 889 poles, depending on the type and duration of the retrofits.

Graph 1 Monitoring and Adaptive Management Decision Tree



Introduction:

For Goldrush, the current application is for disturbance take of eight golden eagle territories.

Issue / problem:

During the 24-year life of the permit, it is possible that golden eagles will build new nests in unforeseeable locations within the study area. The mine will have to determine how to appropriately deal with these new nests.

Objective:

Show the decision process for how to proceed when new golden eagle nests are identified.

Key:

Questions in blue 
 No action decisions in green 
 Postpone mine activities in red 
 New permit application needed in yellow 

11.0 REFERENCE

- Avian Power Line Interaction Committee and U.S. Fish and Wildlife Service (APLIC and USFWS). 2005. Avian Protection Plan (APP) Guidelines. Washington, D.C. April 2005.
- Avian Power Line Interaction Committee (APLIC). 2006. Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006. Edison Electric Institute, APLIC, and the California Energy Commission. Washington D.C. and Sacramento, CA. 207pp.
- Avian Power Line Interaction Committee (APLIC). 2012. Reducing Avian Collisions with Power Lines: The State of the Art in 2012. Edison Electric Institute and APLIC. Washington, D.C. October 2012.
- Brooks, M.L., and D.A. Pyke. 2001. Invasive plants and fire in the deserts of North America. In: Galley, K.M., and T.P. Wilson, eds. Proceedings in the Invasive Species Workshop: the Role of Fire in the Control and Spread of Invasive Species. Fire Conference 2000: the First National Conference on Fire Ecology, Prevention and Management. 2000 November 27-December 1; San Diego, CA. Misc. Pub. No. 11, Tallahassee, FL: Tall Timbers Research Station: pp. 1-14.
- Bureau of Land Management (BLM). 2008a. Cortez Hills Expansion Project, Final Environmental Impact Statement. NVN-067575. NV063-EIS06-011. September 2008. United States Department of the Interior, Bureau of Land Management, Battle Mountain Field Office, Battle Mountain, Nevada.
- Bureau of Land Management (BLM). 2008b. Cortez Hills Expansion Project, Record of Decision and Plan of Operations Amendment Approval. NVN-067575. NV063-EIS06-011. November 2008. United States Department of the Interior, Bureau of Land Management, Battle Mountain District, Battle Mountain, Nevada.
- Bureau of Land Management (BLM). 2011a. Cortez Hills Expansion Project Supplemental Final Environmental Impact Statement. NVN-067575. NV-2010-0132-SEIS. January 2011. United States Department of Interior, Bureau of Land Management, Battle Mountain District, Battle Mountain, Nevada.
- Bureau of Land Management (BLM). 2011b. Cortez Hills Expansion Project Record of Decision and Plan of Operations Amendment Approval. NVN-067575. NV-2010-0132-SEIS. March 2011. United States Department of Interior, Bureau of Land Management, Battle Mountain District, Battle Mountain, Nevada.
- Bureau of Land Management (BLM). 2015. Environmental Assessment, Barrick Cortez Inc. (NVN-067575[14-1A]) Amendment 3 to Plan of Operations and Reclamation Permit Application. June 2015. United States Department of the Interior, Bureau of Land Management, Battle Mountain Field Office, Battle Mountain, Nevada.
- Bureau of Land Management (BLM). 2019. Environmental Impact Statement for the Proposed Deep South Expansion Project, Lander and Eureka Counties, Nevada. Federal Register 84(144): 36122–36123.
- Chambers, J.C. 2008. Fire and the Great Basin. United States Department of Agriculture Forest Service General Technical Report. RMRS-GTR-204. pp. 33-37.

- Environmental Resources Management. (ERM). 2017. Cortez Mine and Exploration Complex 2017 Raptor Survey. Prepared for Barrick Cortez, Inc. August 2017
- Great Basin Ecology, Inc. (GBE). 2013. Cortez Mine 2013 Raptor Survey. Prepared for Barrick Cortez Mine. July 2013.
- Great Basin Ecology, Inc. (GBE). 2014. Cortez Mine 2014 Raptor Survey. Prepared for Barrick Cortez Mine. May 2014.
- Great Basin Ecology, Inc. (GBE). 2015. Cortez Mine 2015 Raptor Survey. Prepared for Barrick Cortez Inc. September 2015.
- Great Basin Ecology, Inc. (GBE). 2016. Cortez Mine and Exploration Complex 2016 Raptor Survey. Prepared for Barrick Cortez Inc. October 2016.
- Herron, G. B., S.J. Stiver, and R. Turner. 1980. Population surveys, species distribution, and key habitats of selected nongame species. Nevada Department of Wildlife. Job Performance Report.
- Herron, G. B., and P.A Lucas. 1979. Population surveys, species distribution, and key habitats of selected nongame species. Nevada Department of Wildlife. Job Performance Report.
- Kochert, M. N. and K. Steenhof. 2002. Golden Eagles in the U.S. and Canada: Status, Trends, and Conservation Challenges. *Journal of Raptor Research*. 36(supplement):33-40.
- Kochert, M. N. and K. Steenhof. 2012. Frequency of Nest Use by Golden Eagles in Southwestern Idaho. *Journal of Raptor Research*. 46(3):239-247.
- Kochert, M. N., K. Steenhof, L. B. Carpenter, and J. M. Marzluff. 1999. Effects of Fire on Golden Eagle Territory Occupancy and Reproductive Success. *Journal of Wildlife Management* Volume 63, No. 3, pp. 773-780. July 1999.
- Kochert, M. N., K. Steenhof, C. L. McIntyre and E. H. Craig. 2007. Golden Eagle (*Aquila chrysaetos*). In the *Birds of North America Online* (A.F. Poole and F.B. Gill, Editors). Cornell Lab of Ornithology, Ithaca, NY. <http://bna.birds.cornell.edu/bna/species/684doi:10.2173/bna.684>.
- McIntyre, C. L., and L. G. Adams. 1999. Reproductive characteristics of migratory Golden Eagles in Denali National Park, Alaska. *Condor* 101:115-123.
- Miller, J.D., and H. Safford. 2012. Trends in wildfire severity: 1984 to 2010 in the Sierra Nevada, Modoc Plateau, and southern Cascades, California, USA. *Fire Ecology* 8(3): 41-57.
- Newmont North America. 2012. Twin Creeks Mine Golden Eagle (*Aquila chrysaetos*) Conservation Plan, Draft v1.0. 50pp.
- Page, J.L. and D.L. Siebert. 1973. Inventory of golden eagle nests in Elko County, Nevada. *Transactions of California-Nevada Wildlife*. 8pp.
- Pagel, J.E., D.M. Whittington, and G.T. Allen. 2010. Interim Golden Eagle Inventory and Monitoring Protocols; and Other Recommendations. Division of Migratory Bird Management, U.S. Fish and Wildlife Service. February 2010.

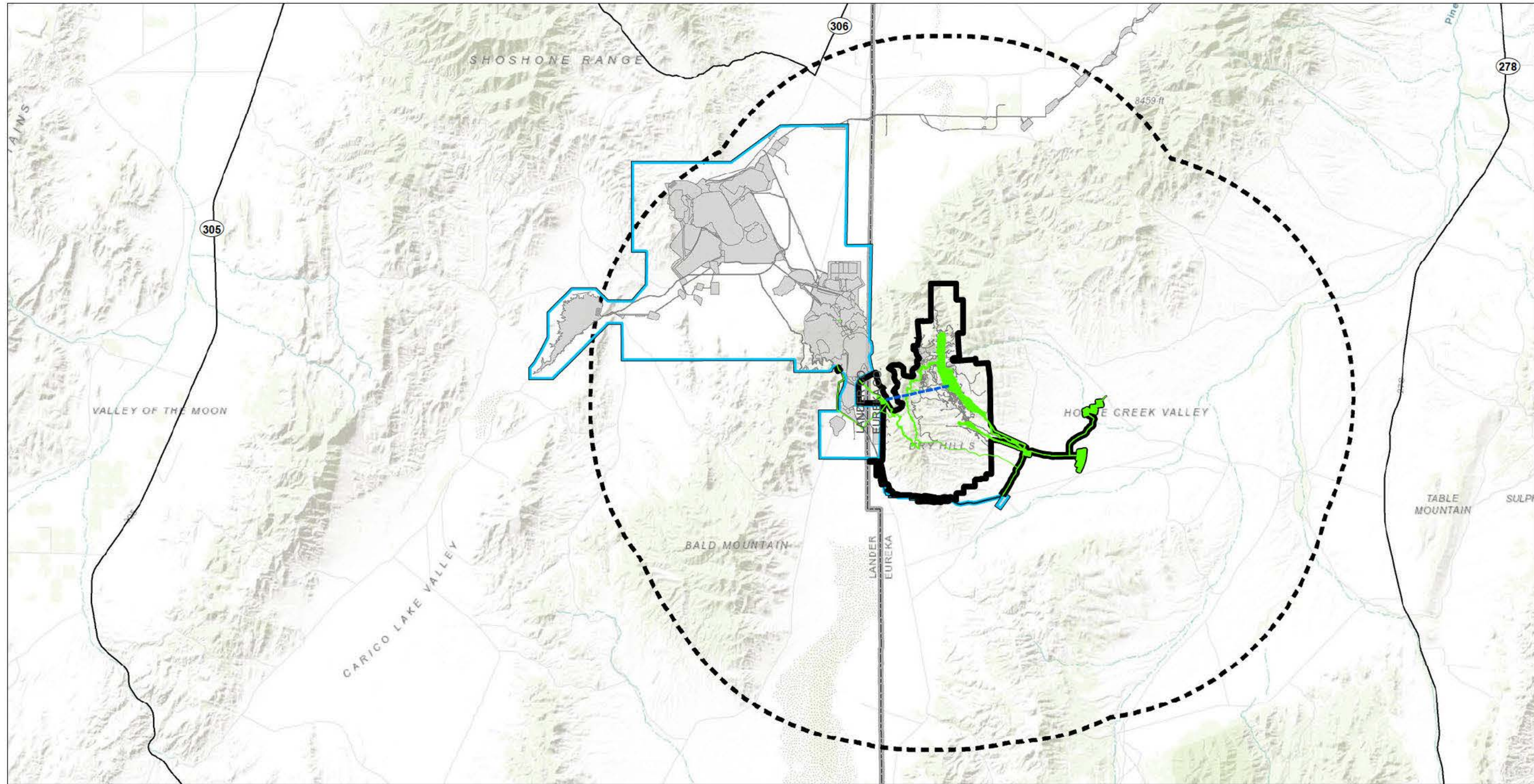
- Phillips, R. L., A. H. Wheeler, J. M. Lockhart, T. P. McEneaney, and N. C. Forrester. 1990. *Nesting Ecology of Golden Eagles and Other Raptors in Southeastern Montana and Northern Wyoming*. United States Department of the Interior Fish and Wildlife Service. Fish and Wildlife Technical Report 26. Washington, D.C.
- Reynolds, H. V. 1969. Population status of the Golden Eagle in south-central Montana. Master's Thesis. University of Montana, Missoula.
- Ryser, F. A. 1985. *Birds of the Great Basin, A Natural History*. University of Nevada Press. 604pp.
- Slater, S. J., W. Frye Christensen, R. N. Knight, K. Keller, and R. MacDuff. 2013. Great Basin bird species-at-risk and invasive species management partnership final report-phase 3. Department of Defense, Legacy Resources Management Program (Project #10-102).
- Stantec Consulting Services Inc. (Stantec). 2018. 2018 Golden Eagle and Raptor Nesting Survey, Cortez District, July 31, 2018.
- Stantec Consulting Services Inc. (Stantec). 2019a. 2019 Golden Eagle and Raptor Nesting Survey, Cortez District, August 29, 2019.
- Stantec Consulting Services Inc. (Stantec). 2019b. Bird and Bat Conservation Strategy Goldrush Project, Lander and Eureka Counties, Nevada. Stantec Project Number 203721555. October 8, 2019.
- Stantec Consulting Services Inc. (Stantec). 2021. Golden Eagle and Raptor Nesting Survey Cortez District Lander and Eureka Counties, Nevada. Stantec Project Number 203722201.
- Stantec Consulting Services Inc. (Stantec). 2022. Golden Eagle and Raptor Nesting Survey Cortez District Lander and Eureka Counties, Nevada. Stantec Project Number 203722529.
- Stantec Consulting Services Inc. (Stantec). 2023. Goldrush Project Sensitive Golden Eagle Data Summary. Stantec Project Number 203721577. September 2022. Revised March 2023.
- Steenhof, K., M. N. Kochert, and T. L. McDonald. 1997. Interactive effects of prey and weather on Golden Eagle reproduction. *Journal of Animal Ecology*. 66:350-362.
- Steenhof, K., M. N. Kochert, C. L. McIntyre, and J. L. Brown. Coming to Terms with Describing Golden Eagle Reproduction. *Journal of Raptor Research*. 51(3):378-390.
- United States Fish and Wildlife Service (USFWS). 2013. Eagle Conservation Plan Guidance. Module 1 – Land-based Wind Energy, Version 2. 103 pp.
- United States Fish and Wildlife Service (USFWS). 2016. Final Programmatic Environmental Impact Statement for the Eagle Rule Revision. United States Department of the Interior Fish and Wildlife Service. December 2016.
- United States Fish and Wildlife Service (USFWS). 2023. Interim Golden Eagle Breeding Survey Recommendations in Nevada: FWS R8 Migratory Birds June 13, 2023.
- United States Geological Survey (USGS). 2011. National Gap Analysis Program. Southwest Regional GAP Analysis Project—Land Cover Descriptions. RS/GIS Laboratory, College of Natural Resources, Utah State University.
http://swregap.nmsu.edu/HMdatabase/landc_database_report.pdf

Western Biological LLC. 2020. Cortez Mine District 2020 Raptor Survey Report. June 2020.

Worley, D.K. 1984. Raptor breeding biology and responses to transmission lines in northern Nevada. Master's Thesis. University of Nevada, Reno. 414pp.

FIGURES

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Legend

- | | | | |
|---|--------------------------------------|---|---------------------------------|
|  | Proposed Goldrush Mine Plan Boundary |  | Authorized/Existing Disturbance |
|  | 10-mile Buffer of Mine Boundary |  | Existing Underground Declines |
|  | Cortez Plan of Operations Boundary | | |
|  | Proposed/Reclassified Disturbance | | |



0 2 4 Miles
1 in = 4 miles

T26N, R48E Eureka County, NV
NAD 1983 UTM Zone 11N

DRAWN BY: BT

1ST REVIEW: CJ

2ND REVIEW: SM

DATE: 5/4/2021

PROJECT NO: 203721577

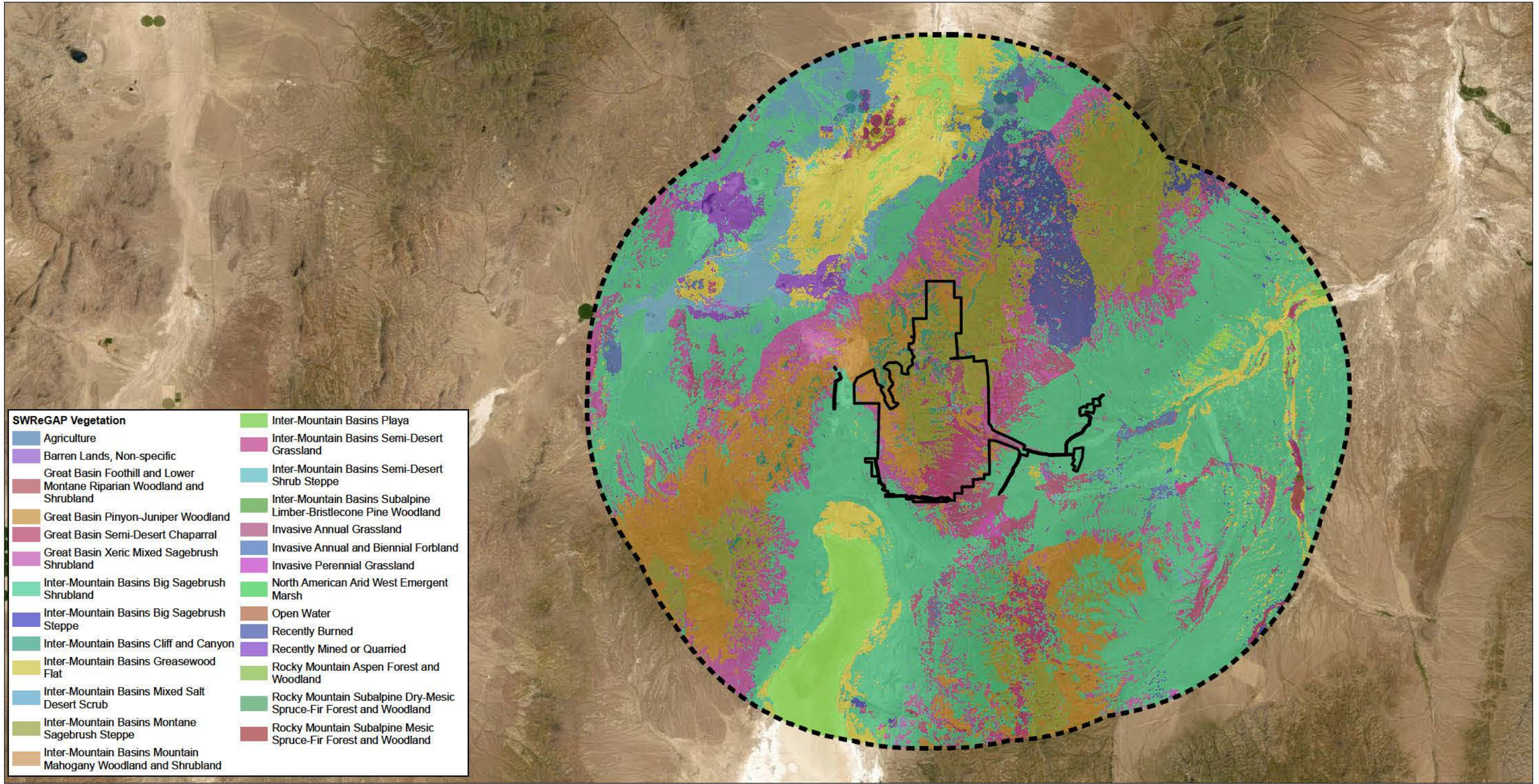
Nevada Gold Mines LLC
Goldrush Project
Eagle Conservation Plan

Figure 2
Existing and
Proposed Facilities

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Legend

-  Proposed Goldrush Mine Plan Boundary
-  10-mile Buffer of Mine Boundary



0 2 4 Miles
1 in = 4 miles

T26N, R48E Eureka County, NV
NAD 1983 UTM Zone 11N

DRAWN BY: BT

1ST REVIEW: CJ

2ND REVIEW: SM

DATE: 5/4/2021

PROJECT NO: 203721577

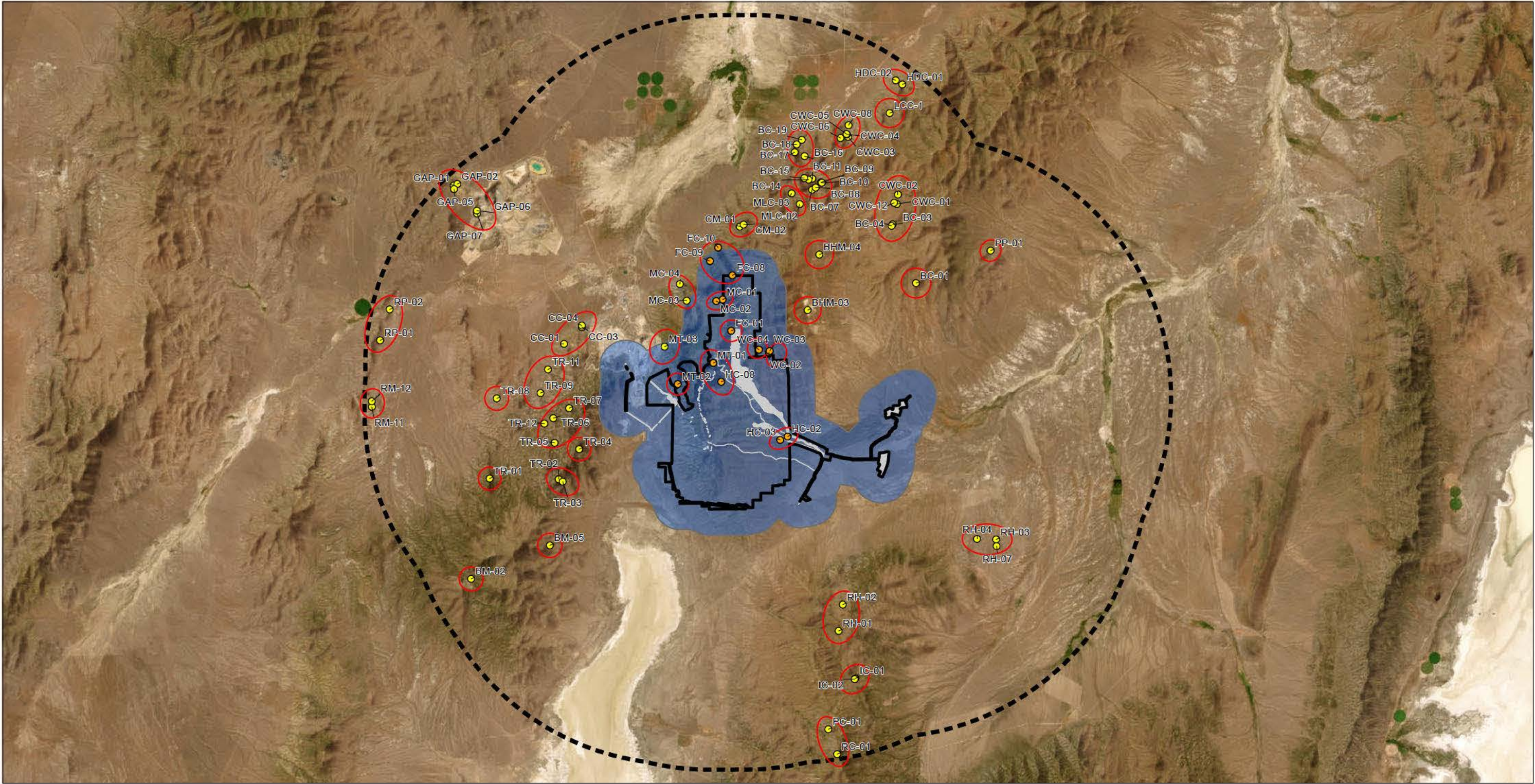
Nevada Gold Mines LLC
Goldrush Project
Eagle Conservation Plan

Figure 3
Foraging Habitat

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Legend

- | | | | |
|--|--------------------------------------|--|-------------------------------------|
| | Proposed Goldrush Mine Plan Boundary | | Golden Eagle Nest Territory |
| | Proposed/Reclassified Disturbance | | Golden Eagle Nest |
| | 10-mile Buffer of Mine Boundary | | Golden Eagle Nest Proposed for Take |
| | 1-mile Buffer of the Mine Boundary | | |



0 10,000 20,000 US Feet
1 in = 20,000 Feet

T26N, R48E Eureka County, NV
NAD 1983 UTM Zone 11N

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1ST REV EW: IH

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DATE: 2023-08-24

PROJECT NO: 203721577

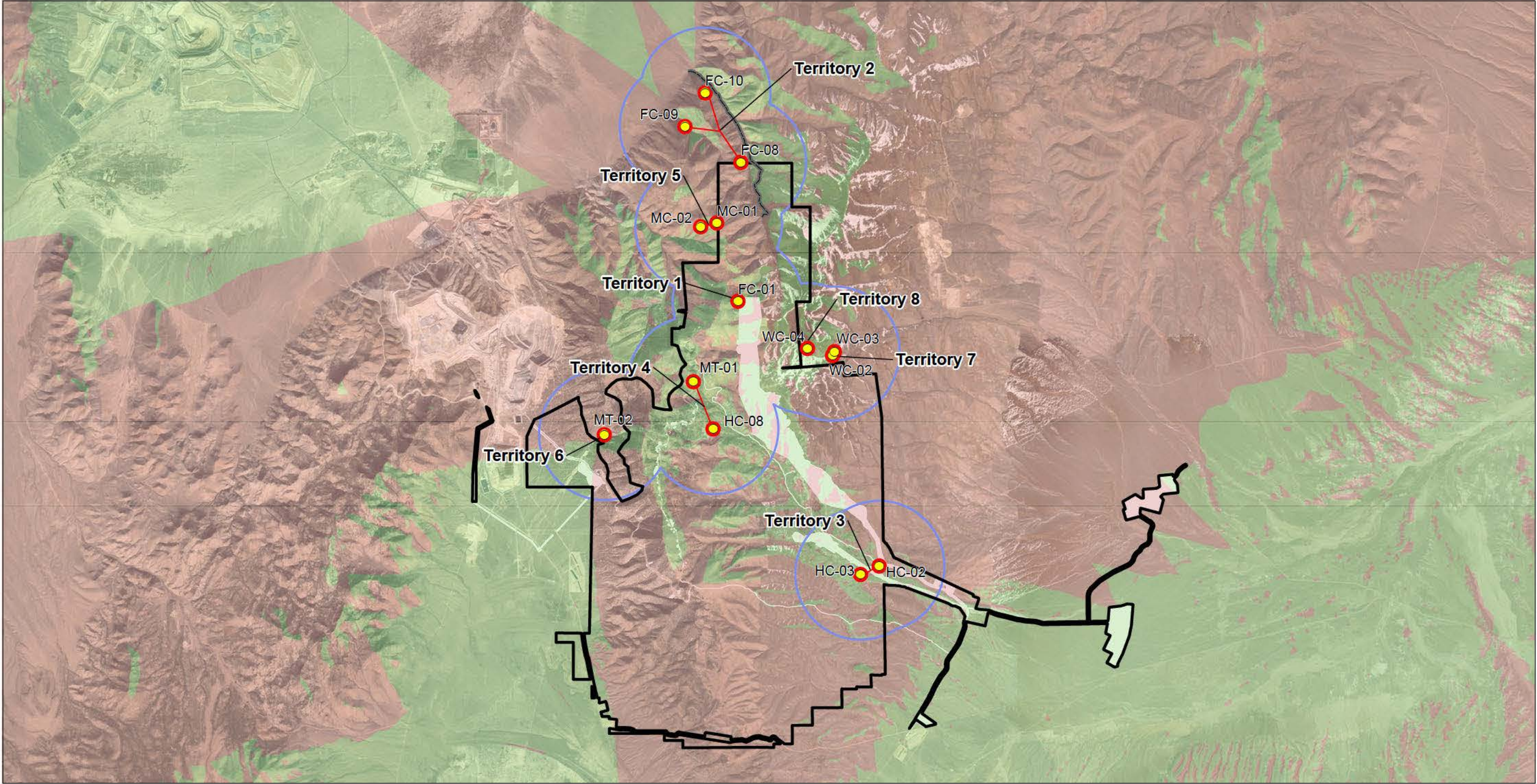
Nevada Gold Mines LLC
Goldrush Project
Eagle Conservation Plan

Figure 4
Golden Eagle Nests
and Territories

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Note: The above viewshed represents a composite of eight territories and their associated nests, which include FC-01, FC-08, FC-09, FC-10, HC-02, HC-03, HC-08, MT-01, MC-01, MC-02, MT-02, WC-02, WC-03, and WC-04.

- Legend**
- Proposed Goldrush Mine Plan Boundary
 - Proposed/Reclassified Disturbance
 - Golden Eagle Nest
 - 1-mile Buffer of Golden Eagle Nest
 - Fourmile Canyon Road
 - Not Visible
 - Visible

N

Stantec

0 4,000 8,000 Feet

1 in = 8,000 Feet

T26N, R48E Eureka County, NV
NAD 1983 UTM Zone 11N

DRAWN BY: BT

1ST REV EW: CJ

2ND REV EW: SM

DATE: 2023-08-24

PROJECT NO:

Nevada Gold Mines LLC
Goldrush Project
Eagle Conservation Plan

Figure 6
Golden Eagle Nests
Viewshed

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Service Layer Credits: World Imagery, Earthstar Geographics

APPENDIX A

Survey Area Figures (2013-2022)

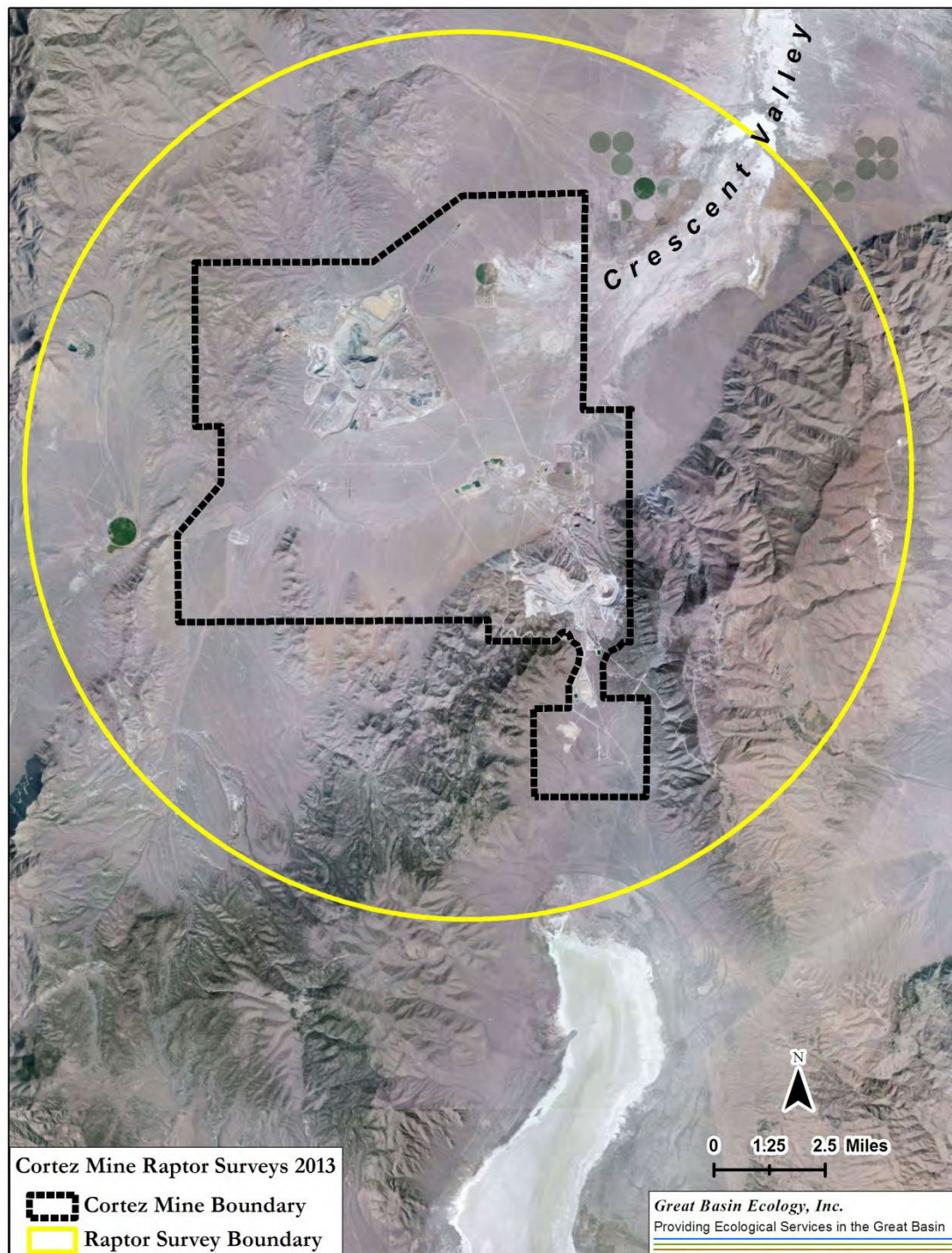


Figure 2: Cortez Mine Area

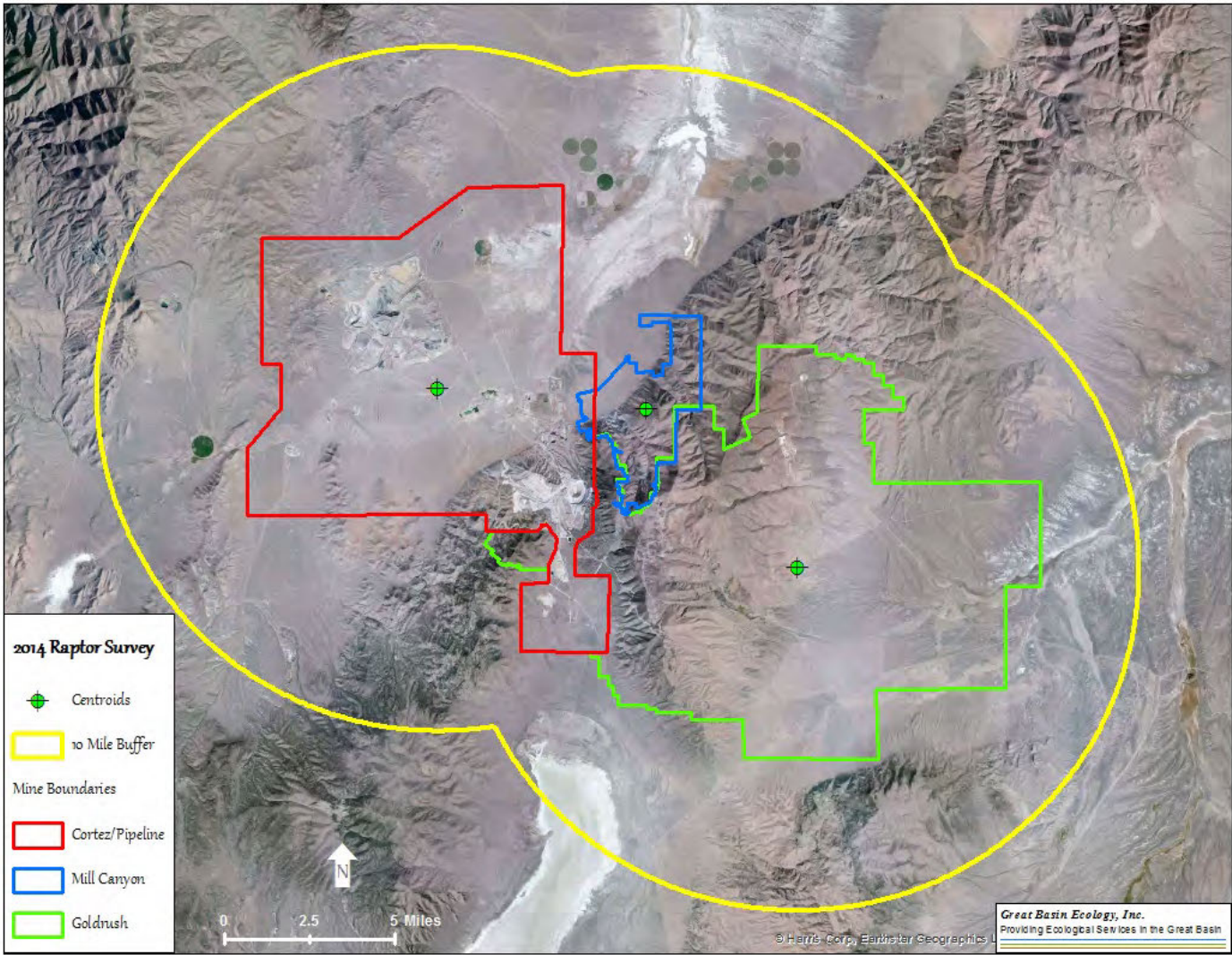


Figure 2: Cortez Mine Complex, PoO Boundaries, and Raptor Survey Area

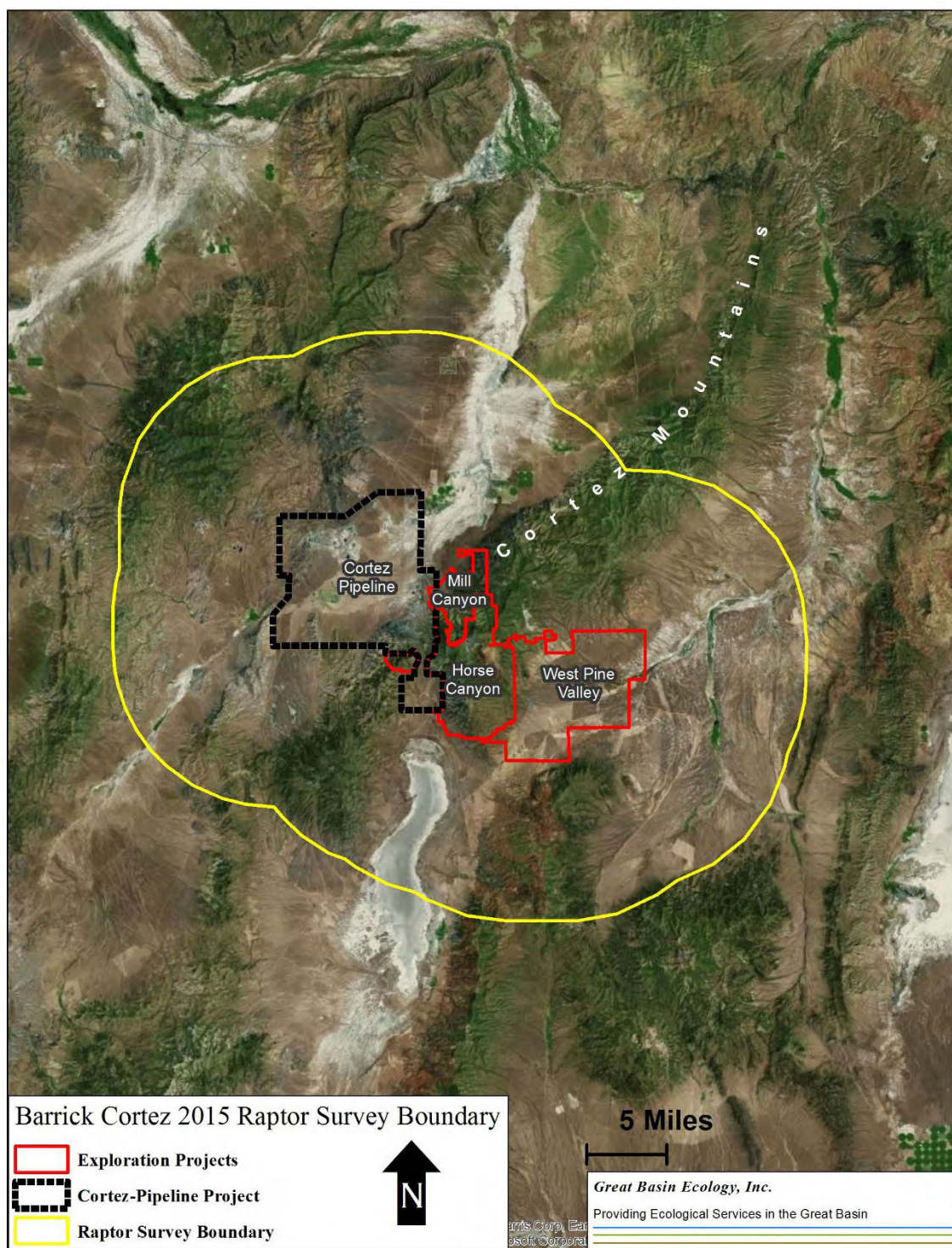


Figure 2: Cortez Mine Complex, PoO Boundaries, and Raptor Survey Area

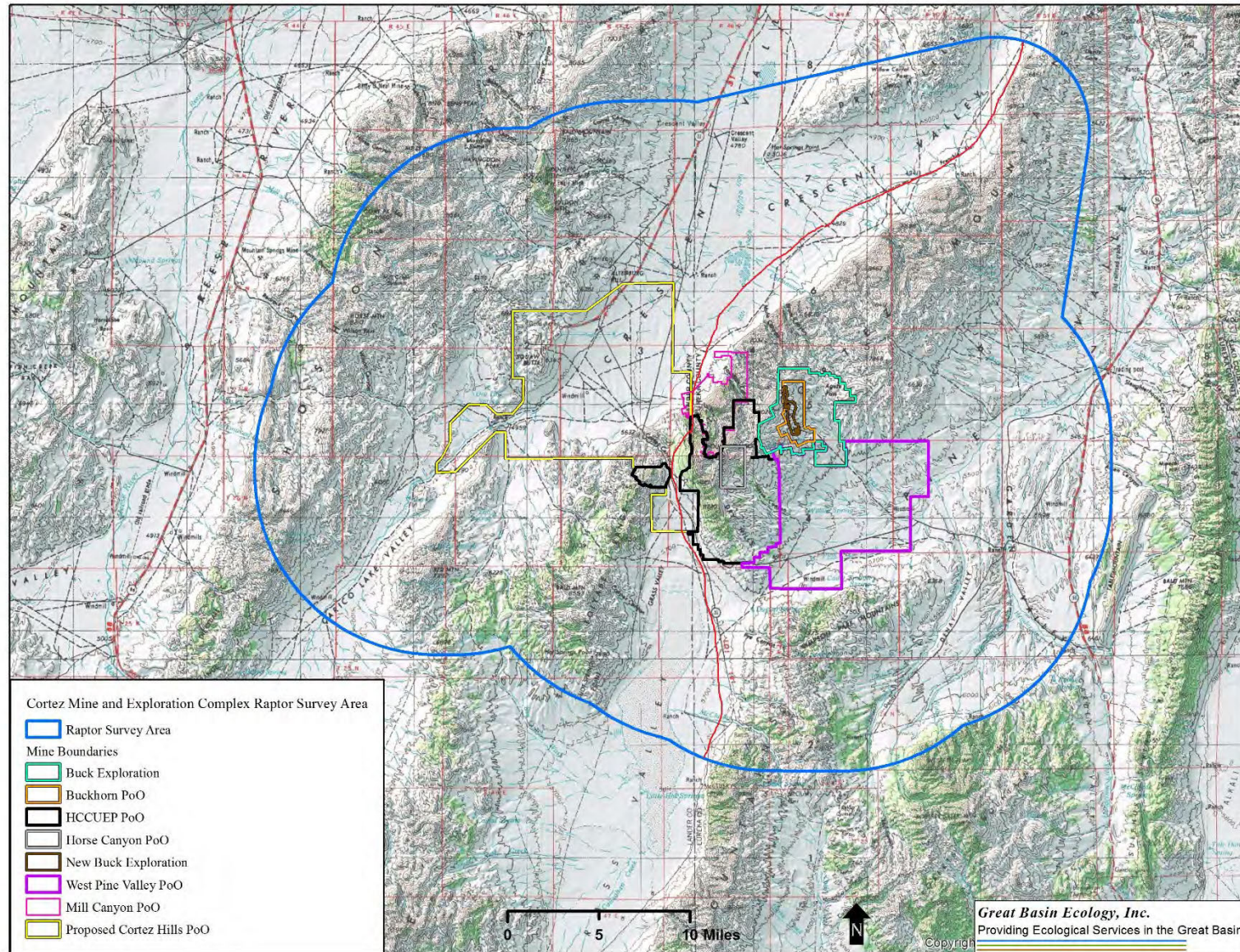
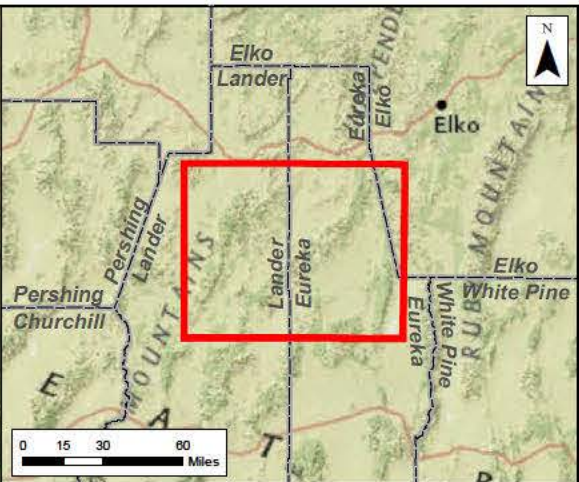
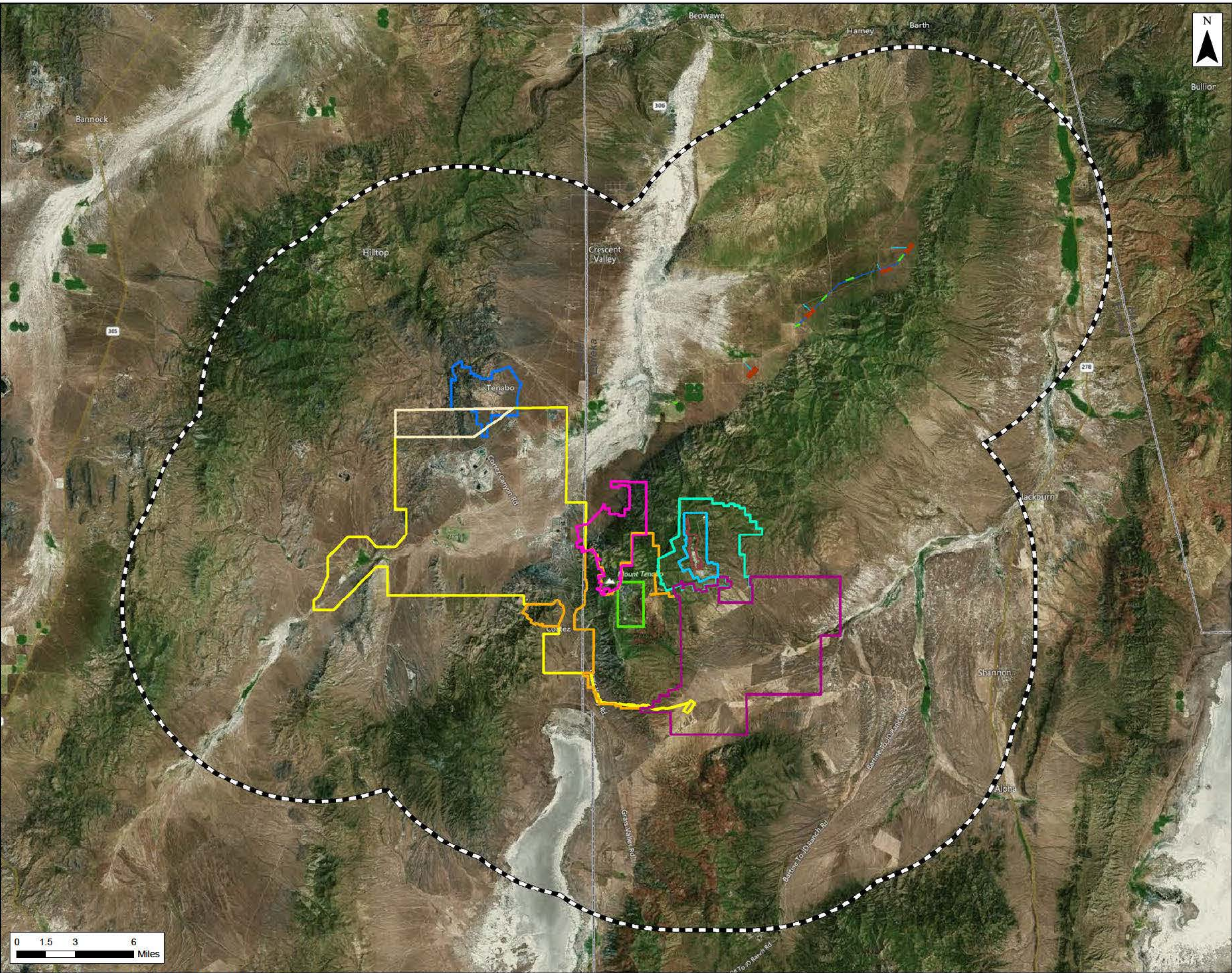


Figure 2: Cortez Mine and Exploration Complex, PoO Boundaries, and 2016 Raptor Survey Area

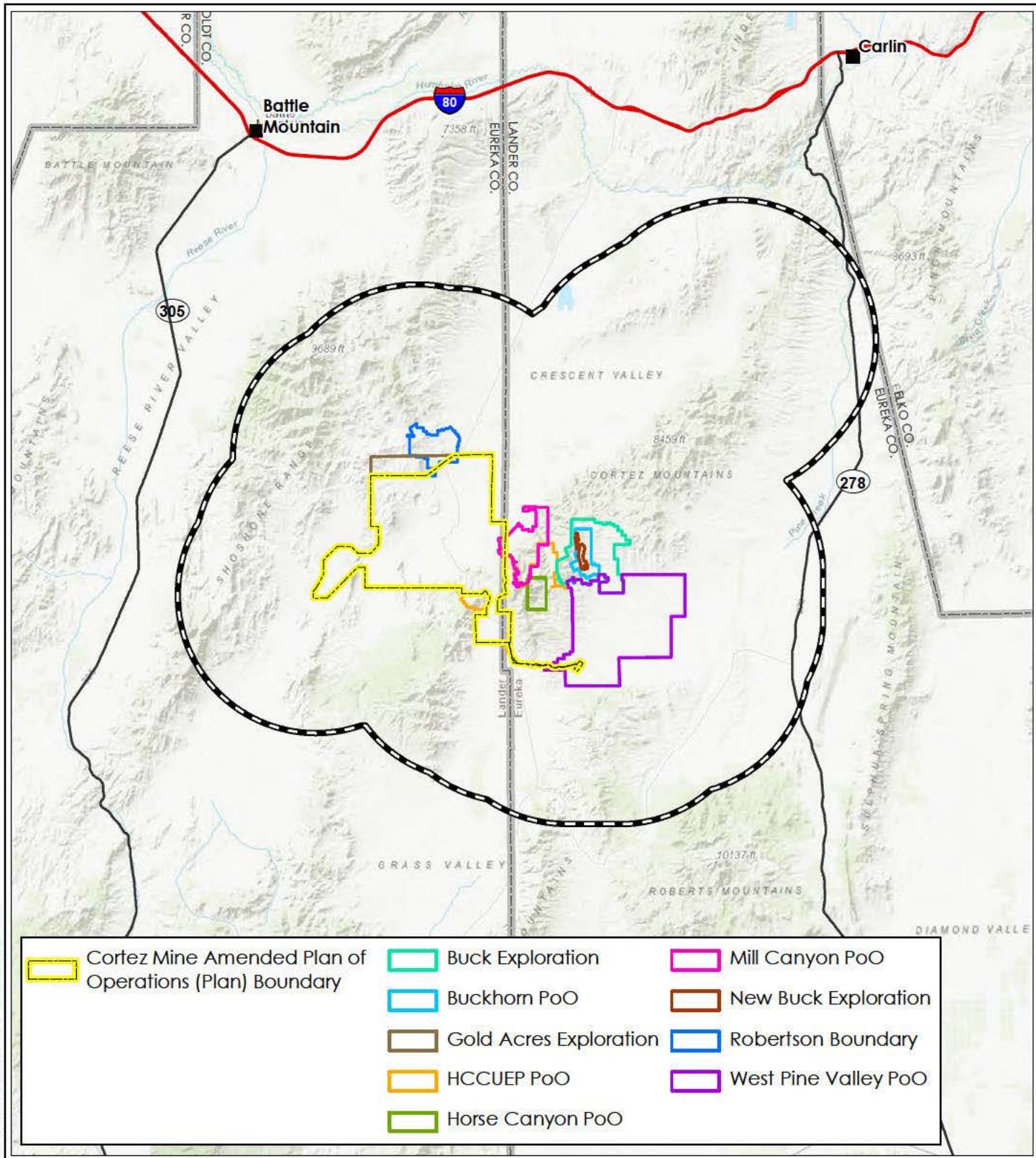
F:\E:\M\Projects\Barrick\Biological Baseline Study\maps\Goldrush Baseline Raptors\ 1 Raptor Survey Areas 20170817.mxd, REVISED: 08/17/2017, SCALE: 1:314,845 when printed at 11x17, DRAWN BY: Under Map Properties



- Legend**
- Buckhorn PoO
 - Cortez PoO
 - HCCUEP PoO
 - Horse Canyon PoO
 - Mill Canyon PoO
 - West Pine Valley PoO
 - Buck Exploration
 - New Buck Exploration
 - Gold Acres Exploration
 - Robertson Boundary
- Deep South**
- Ancillary
 - Infiltration
 - Infiltration Distribution Pipeline
 - Road
- Raptor Survey Area**
- 10 mi Buffer
 - County Boundaries

Figure 1
Raptor Survey Area
Goldrush Biological Baseline
Barrick
Lander and Eureka County, Nevada

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 Cortez Mine Amended Plan of Operations (Plan) Boundary

 Buck Exploration

 Mill Canyon PoO

 Buckhorn PoO

 New Buck Exploration

 Gold Acres Exploration

 Robertson Boundary

 HCCUEP PoO

 West Pine Valley PoO

 Horse Canyon PoO

Legend

 Golden Eagle Survey Boundary (10-mile Plan buffer)



0 5 10 Miles

1 in = 10 miles

Elko Eureka Lander County NV
NAD 1983 UTM Zone 11N

DRAWN BY: CJ

1ST REVIEW: JT

2ND REVIEW: KH

DATE: 7/23/2018

PROJECT NO: 20372017

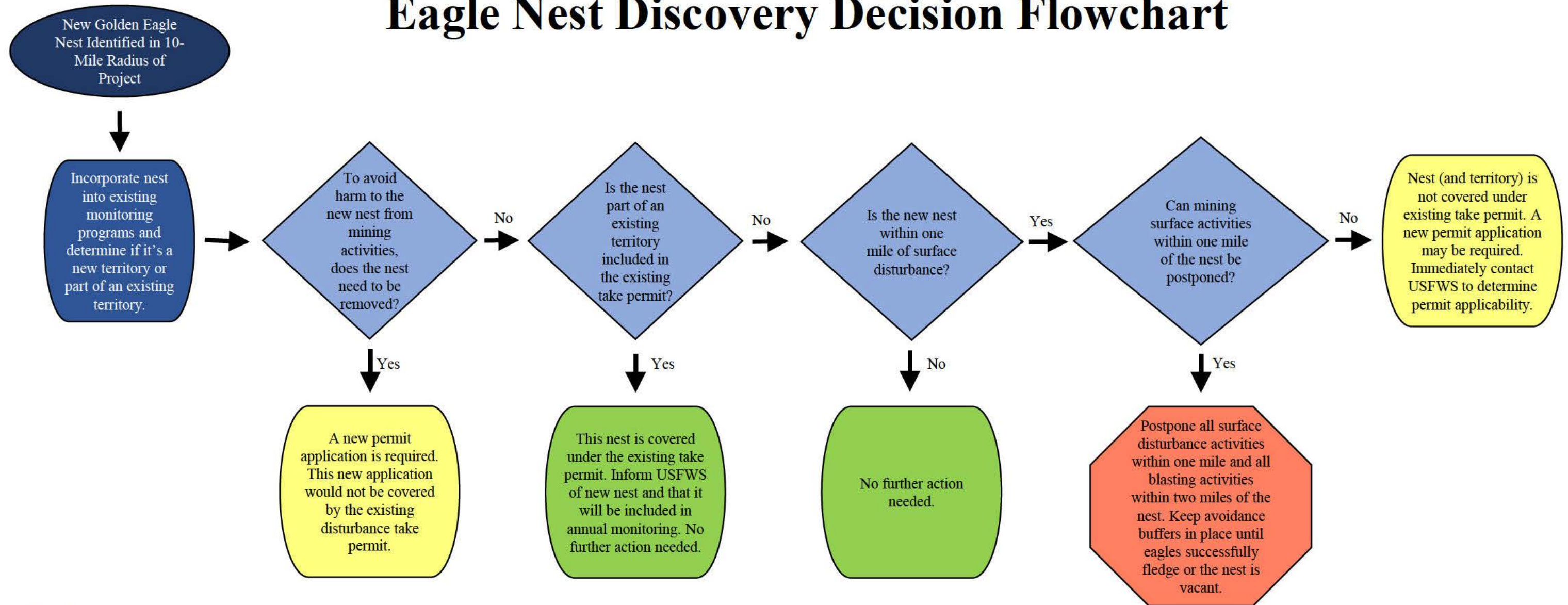
Barrick Cortez Inc.
Cortez Mine
2018 Golden Eagle Nesting Survey

Figure 1
Project Location

APPENDIX B

Eagle Nest Discovery Decision Flowchart

Eagle Nest Discovery Decision Flowchart



Introduction:

For Goldrush, the current application is for disturbance take of eight golden eagle territories.

Issue / problem:

During the 24-year life of the permit, it is possible that golden eagles will build new nests in unforeseeable locations within the study area. The mine will have to determine how to appropriately deal with these new nests.

Objective:

Show the decision process for how to proceed when new golden eagle nests are identified.

Key:

Questions in blue 
No action decisions in green 
Postpone mine activities in red 
New permit application needed in yellow 

Appendix B

Results of Golden Eagle Local Area Population Analysis for Goldrush Mine Nest Disturbance Permit Applications

logfile start

US FWS Cumulative Effects Tool
Summary Results (Golden Eagle)
run 2023-03-31 08:00:54

Focal Project: GoldRushMine

Predicted eagle take (annual)	4.72
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Local Area Population (LAP) Estimates by Local Area Density Unit (LADU):

Focal Project_Density Unit	Estimated Number of Eagles	
GoldRushMine_GREAT_BASIN	860.1	
GoldRushMine LAP (total)	860.1	

1% LAP Benchmark	8.6
5% LAP Benchmark	43

'Permitted' & 'Other' Projects with Overlapping LAPs:

Project ID	Estimated Annual Take	Percent Overlap With Focal Project	Overlapping Area (SqMi)	Overlapping Take
Project 83565D	0.59	0.20%	73.07	0
Project 20776D	0.59	45.61%	17011.24	0.27
Project 16920D	0.59	3.06%	1137.53	0.02
Project 16920D	0.59	3.72%	1383.54	0.02
Project 76086D	0.59	28.16%	10508.01	0.17
Project 53540D	0.59	94.93%	35427.65	0.56
All Projects (total)	3.54			1.04

Results - Permitted Take	Number of Eagles	Percent of LAP
5% LAP Benchmark	43	5%
Total Overlapping Take	1.04	0.12%
Focal Project Predicted Take	4.72	0.55%
Focal Project + Total Overlapping Take	5.76	0.67%

Unpermitted Take Summary

Total Anthropogenic Take (10 years)	441
Average Annual Anthropogenic Take (10 years)	44.1
% of Annual Unpermitted Take in LAP	5.13%