



# United States Department of the Interior

Pacific Southwest Region  
FISH AND WILDLIFE SERVICE  
Reno Fish and Wildlife Office  
1340 Financial Boulevard, Suite 234  
Reno, Nevada 89502



December 28, 2023  
File No. 2022-0079054  
Sent Electronically

Lisa Roberts  
Senior Biologist  
Federal Emergency Management Agency, Region 9  
Department of Homeland Security  
1111 Broadway, Suite 1200  
Oakland, California 94607

Subject: Biological Opinion for the Marlette Lake Dam Resilient Infrastructure Project  
(Pre-Disaster Mitigation Contracts (PDMC)-PJ-09-NV-2018-001)

Dear Lisa Roberts:

This document transmits the U.S. Fish and Wildlife Service's (Service) biological opinion based on our review of the Federal Emergency Management Agency's (FEMA) proposed financial assistance, through the Pre-Disaster Mitigation (PDM) Grant Program, for the Marlette Lake Dam Resilient Infrastructure Project and its effects on the federally listed as threatened Lahontan cutthroat trout (LCT; *Oncorhynchus clarkii henshawi*), in accordance with section 7 of the Endangered Species Act of 1973, as amended (Act) (16 U.S.C. 1531 *et seq.*). We received your request for formal consultation on July 21, 2023.

We have based this biological opinion on your July 21, 2023, letter requesting consultation and the biological assessment (BA) (FEMA 2023) for the proposed action which accompanied it.

## CONSULTATION HISTORY

The lead action agency for this consultation is FEMA. They began initial coordination for this consultation on April 13, 2022, by hosting a teleconference with the Service's Reno Fish and Wildlife Office (RFWO) and other stakeholders to introduce the proposed action and discuss potential impacts. On July 7, 2022, FEMA hosted a second teleconference to clarify the proposed action, establish which federally listed species were likely to be affected, and discuss the consultation process and timeline with RFWO staff and other stakeholders. On December 13, 2022, a final teleconference was held to gather additional information related to stakeholder concerns and ensure FEMA's contractor, CDM Smith, had all the necessary information to develop the biological assessment (FEMA 2023). Formal consultation with the RFWO was

requested by FEMA on July 21, 2023. A phone call between FEMA and RFWO staff was held on November 17, 2023, and an email exchange on December 8, 2023.

## BIOLOGICAL OPINION

### DESCRIPTION OF THE ACTION AREA AND PROPOSED ACTION

#### Action Area

Regulations implementing the Act (50 CFR § 402.02) describe the action area as all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action. The proposed action area was defined by FEMA as Marlette Lake, its earthen-filled dam and upstream and downstream embankments, the concrete spillway, and several existing roads within the area that will be used for various purposes. However, LCT currently only exist within Marlette Lake, and thus can only be affected by project-related activities that occur in and directly adjacent to the lake itself (*i.e.*, the dam, spillway, embankments, immediately adjacent access roads) since all other proposed actions will occur along the road that leads to Marlette Lake from nearby Spooner Lake to the south. Thus, for this consultation, the action area is Marlette Lake, the dam construction area, the storage and stockpiling area near Nevada Department of Wildlife's (NDOW) spawning station, and the portion of the Tahoe Flume Trail that will be used to access the dam construction area adjacent to the lake. Marlette Lake is approximately 1 mile east of Lake Tahoe in the Tahoe LCT Management Unit (Figure 1).



**Figure 1.** Map depicting the location of Marlette Lake within the Tahoe LCT Management Unit, as well as other LCT occupied habitats within the unit.

## Proposed Action

The proposed action is to retrograde Marlette Lake's existing earthen dam structure to improve its ability to withstand larger seismic events. The proposed action includes several activities, including enlarging the downstream embankment of the dam and adding a toe drain, removing and replacing the existing riprap protection on the upstream slope of the dam, removing and replacing the concrete spillway associated with the dam, and upgrading intake/outlet structures and piping (FEMA 2023). Enlarging the downstream embankment of the dam would require heavy equipment (*i.e.*, CAT 966, D6, 330, 345, or equivalent) to first remove vegetation on the dam and its embankments to allow access. Next, all soil and loose, weathered, oversized rock material along the downstream embankment would be removed down to dense bedrock material, including the existing boulder wall about halfway down the dam face. Then, approximately 2,860 cubic yards of new buttress fill would be placed in the excavated embankment (replacing the removed material) and compacted in lifts to achieve a grade of 3:1. The new fill would extend downstream 48 feet further than the embankment's current footprint. The new two-stage toe drain would be installed under the new downstream fill. To remove and replace the upstream embankment slope riprap protection, heavy equipment will first excavate the existing material. Once excavated, new riprap protection will be placed and compacted at the same slope as the current embankment.

Additional operational outlet improvements would also occur as part of this proposed action. First, the existing spillway would be completely removed by heavy equipment and replaced with a new concrete box culvert that is within basically the same footprint (11 feet wide by 6 feet tall by 78 feet long) and at the same slope; after removal of the existing spillway, the soil would be excavated an additional 12 inches to accommodate a compacted aggregate base for the culvert to rest upon. Lastly, all existing outlet pipes within the dam would be completely replaced and updated with new ones during embankment work, including the addition of an automated outlet control system to be housed in a 10-foot by 10-foot masonry building on the dam crest. Because the new outlet pipes will have water exiting the lake onto a different portion of Marlette Creek (48 feet further downstream than today), the creek would be regraded to facilitate the construction of a riprap stilling basin to dissipate erosive flows. As well, the new intake for the outlets would be replaced with an elevated trash rack to prevent siltation.

All of these proposed activities would occur in a dry forebay work area, disconnected from the lake and its inhabitants, and for the most part are the direct removal and replacement of existing infrastructure (except for the addition of the toe drain in the enlarged downstream dam embankment and creek stilling basin). To complete the dam retrograde, the water level in Marlette Lake will need to be reduced to 22 feet below the spillway crest (full lake level), dropping the lake's water level to approximately 7,820 feet above mean sea level (AMSL). This would reduce the lake's volume by over 52 percent of the normal approximately 10,000 acre-feet to an estimated 4,750 acre-feet. Dewatering is proposed to begin in October 2024, at which time the lake should be at the seasonally low water level of 7,837 feet AMSL. Dewatering would slowly occur over several months, by discharging lake water through the existing primary outlet at a rate not to exceed 25 cubic feet per second, to reduce downstream impacts.

Once the lake is dewatered to 7,820 feet AMSL, a large sediment bar would be exposed about 230 feet northeast of the dam, providing a foundation for the installation of a water-filled

cofferdam; this is expected to occur by March 2025. Silt screens and other sediment-reducing activities (like slowly pumping water out of the forebay work area) are proposed ahead of the cofferdam installation to reduce impacts to fish remaining in Marlette Lake. This cofferdam would then allow for the further dewatering of the forebay work area (theoretically, without further dewatering of the lake itself) another 15 feet or so to completely expose the forebay work area. During forebay dewatering activities, qualified NDOW biologists are proposing to conduct fish capture and relocation of LCT and other entrained trout to reduce mortality. Once the forebay work area is completely dewatered, construction activities on the dam would begin; these activities would have little to no effect on the fish remaining in Marlette Lake because they have little to no chance of introducing contaminants or sediment to the lake itself due to the proposed best-management practices and because the work area would be dry and disconnected from the lake itself.

### **Timeline**

The proposed action would begin in October 2024, with the slow dewatering of Marlette Lake throughout the fall and winter. In March 2025, a cofferdam would be installed to isolate the forebay work area, and through May 2025, the forebay work area would be dewatered to allow access to the dam's intake/outtake structures, embankments, and spillway. Construction activities on the dam are proposed to start in May 2025 and be completed by October 2025, at which time the forebay work area would be allowed to naturally refill. Once the forebay work area is refilled, the cofferdam would be removed slowly to reduce sedimentation and the retrograded Marlette Lake Dam outlet structure would be closed. This would result in Marlette Lake naturally refilling through time back up to the Dam's spillway crest; it is estimated that it may take up to 6 years to completely refill.

Section 2.4 Best Management Practices and 2.5 Specific Measures for Lahontan Cutthroat Trout in the BA (FEMA 2023) outline the best management practices (BMPs) that would be incorporated as part of the proposed action to minimize impacts to LCT. These are:

To minimize soil erosion and protect water quality, BMPs would be implemented in accordance with the Tahoe Regional Planning Agency Handbook of Best Management Practices. A Stormwater Pollution Prevention Plan also would be prepared by a qualified professional, which would include BMPs and monitoring of BMP efficacy throughout construction. BMPs for the protection of soil and water resources would include:

- BMP 1. Boundary fencing (*i.e.*, orange construction fencing or highly visible rope fencing) will be placed and maintained to clearly identify the limits of site grading, equipment staging and material stockpiling areas, and identified pullouts to protect adjacent vegetation.
- BMP 2. Excavated soils will be stockpiled temporarily within previously disturbed, upland staging areas or immediately off loaded into a haul truck. Sediment barriers will be placed around the downslope perimeter of temporary soil stockpiles.
- BMP 3. Sediment barriers will be placed around the downslope side of loose/erodible cut/fill slopes along the base of the dam embankment and at temporary road pullouts/staging areas to prevent sediment from washing into Marlette Creek.

- BMP 4. Sediment barriers will be inspected weekly for damage and appropriate placement to reduce potential erosion. Any damaged barriers will be repaired, or new barriers installed, within 24 hours upon identification of damage. Accumulated sediment will be removed when it reaches a maximum of one-third the height of the silt fence or one-half the height of the fiber roll.
- BMP 5. Work within regulated waters will be completed under low flow or no flow conditions. Water levels within the lake will be lowered via the existing outlet works prior to construction. A temporary hydraulic cofferdam will then be installed within Marlette Lake and water will be pumped around the cofferdam such that the replacement of the intake structures and work on the dam can occur in a dry environment.
- BMP 6. A turbidity curtain will be deployed up-gradient of the cofferdam to contain any turbidity caused by cofferdam installation.
- BMP 7. All upland areas temporarily disturbed by construction activities will be revegetated in accordance with the Tahoe Regional Planning Agency Best Management Practices Handbook.
- BMP 8. Staging and storage of equipment, materials, fuels, lubricant, and solvents will be located more than 100 feet from aquatic resources, including wetlands and lakes. Equipment will be fueled and maintained within the designated staging areas. Adequate supplies will be available at all times to handle spills, leaks, and disposal of used liquids.
- BMP 9. Loose construction materials, packaging, and litter will be cleaned up daily and disposed of or stored appropriately.
- BMP 10. All ground-disturbing activities will be effectively controlled of fugitive dust emissions using various methods.

Additionally, the following BMPs will be implemented to protect biological resources:

- BMP 11. If vegetation removal is scheduled during the nesting season (March 1 to August 31), a focused survey for nests will be completed by a qualified wildlife biologist at a minimum radius of 500 feet for migratory birds and 0.5 mile for raptors around the project area. If active nests are found, the nest will be avoided and a disturbance buffer established by the project biologist in coordination with NDOW. The extent of the buffer will be dependent on the species, noise levels or construction disturbance, and other topographical or artificial barriers. The buffer will be kept in place until the nesting season ends or the project biologist confirms the young have fledged.
- BMP 12. A screen-covered drafting box will be used while drafting or dewatering to minimize removal of aquatic species, including juvenile fish, from aquatic habitats. The pump intake screens will be sized according to the pump intake capacity and approved by an NDOW fisheries biologist.
- BMP 13. NDOW will perform any fish salvage procedures necessary before and/or during the dewatering of the waterward side of the dam (*i.e.*, the forebay work area).

- BMP 14. Tightly woven fiber netting, plastic monofilament netting or similar material will not be used for erosion control or other purposes adjacent to aquatic resources, including wetlands.
- BMP 15. Vegetation removal will be minimized to the extent practicable. Where necessary within the construction access corridor and at designated passing areas, existing vegetation will be trimmed to a height necessary for construction equipment while keeping the existing plants alive. Vegetation within equipment access areas that could pose a fire danger if left in place will be removed.
- BMP 16. All construction equipment and vehicles will be washed and inspected for weed seeds and plant parts prior to bringing them onto the property. Vehicles or other traffic that may transport weed seed or plant materials will be restricted from entering the site.
- BMP 17. Certified weed-free mulch will be used for all site restoration areas.
- BMP 18. Infestations of invasive plants that are discovered during project implementation will be documented and locations mapped.
- BMP 19. To the maximum extent practicable, project-related vehicles will observe a 15-mile-per-hour speed limit within construction areas and on access roads.
- BMP 20. All food and food-related trash items will be enclosed in sealed trash containers and properly disposed of off-site.
- BMP 21. No pets will be allowed anywhere within the action area (AA) during project implementation.
- BMP 22. To the maximum extent practicable, construction and ground disturbance will occur only during daytime hours, and will cease no less than 30 minutes before sunset and will not begin again earlier than 30 minutes after sunrise.

In addition to the BMPs indicated above, the following species-specific measures would be incorporated into the Proposed Action to minimize potential impacts on LCT:

- LCT 1. In coordination with the Service and NDOW, the Subapplicant will facilitate the collection and relocation of LCT from Marlette Lake prior to reservoir drawdown. This will reduce the number of fish that would be subject to stressors associated with post-drawdown conditions. Capture and relocation activities will only be conducted by Service-approved biologists and support staff with knowledge and experience in handling, collecting and relocating LCT. No collection and relocation of LCT will occur following reservoir drawdown because resultant access limitations would preclude such activities.
- LCT 2. During dewatering and rewatering of the forebay work area, the following measures will be implemented to minimize the contribution of turbidity to Marlette Lake:
  - o Suspended sediment in water pumped or removed from the dewatered forebay work

area will be filtered or allowed to settle before its release or allowed to filter through vegetated upland areas prior to being returned to the lake.

o When construction is complete, the forebay area will be rewatered slowly by methodically pumping water from the lake to the dewatered work zone. This will be performed in a manner that will avoid abrupt flows and turbidity. Once the water elevation is level on both sides of the cofferdam, the cofferdam will be removed.

## ANALYTICAL FRAMEWORK FOR THE SECTION 7(a)(2) DETERMINATIONS

### Jeopardy Determination

Section 7(a)(2) of the Act requires that Federal agencies ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of listed species. “Jeopardize the continued existence of” means “to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species” (50 CFR 402.02).

The jeopardy analysis in this biological opinion relies on four components: (1) the Status of the Species, which describes the current rangewide condition of LCT, the factors responsible for that condition, and its survival and recovery needs; (2) the Environmental Baseline, which analyzes the condition of LCT in the action area, the factors responsible for that condition, and the relationship of the action area to the survival and recovery of LCT; (3) the Effects of the Action, which determines all consequences to LCT caused by the proposed action that are reasonably certain to occur in the action area; and (4) the Cumulative Effects, which evaluates the effects of future, non-Federal activities, that are reasonably certain to occur in the action area, on LCT.

In accordance with policy and regulation, the jeopardy determination is made by evaluating the effects of the proposed Federal action in the context of the current status of LCT, taking into account any cumulative effects, to determine if implementation of the proposed action is likely to reduce appreciably the likelihood of both the survival and recovery of LCT in the wild by reducing the reproduction, numbers, and distribution of that species.

### STATUS OF THE SPECIES

On October 13, 1970, LCT were federally listed as endangered under the Endangered Species Conservation Act of 1969 (Service 1970). On July 16, 1975, LCT were reclassified as threatened under the ESA in conjunction with a special 4(d) rule to facilitate management by the states and allow state-permitted sport harvest (Service 1975). The 4(d) rule for LCT exempts the take of LCT from the section 9 prohibitions of the ESA when such take is in accordance with applicable state law (50 § CFR 17.44(a)(1)). Critical habitat has not been designated for LCT, however, LCT is listed as threatened, wherever found, and thus if States or other agencies stock LCT (like any other sportfish) for recreational purposes, and a Federally authorized or funded project occurs in that location that would result in adverse effects to LCT in that fishery, consultation is required.

## Rangewide Status and Recovery

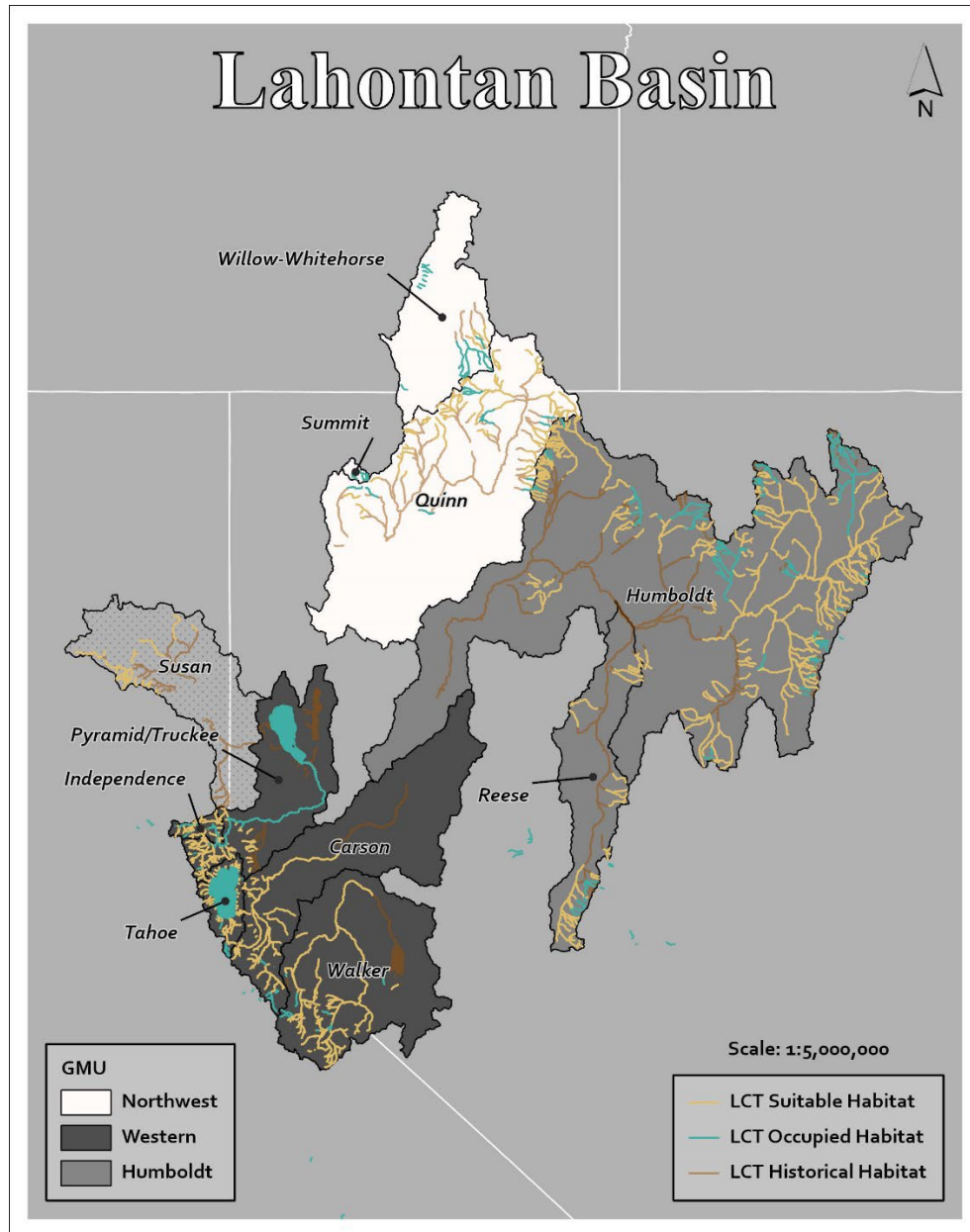
Relevant information on the status of LCT, life history traits, population dynamics, habitat requirements, threats, and distribution can be found in the Recovery Plan for the Lahontan Cutthroat Trout (Service 1995), Updated Goals and Objectives (LCT Coordinating Committee 2019), and the Lahontan Cutthroat Trout Status Reviews (Service 2009, Service 2023). Lahontan cutthroat trout evolved within the geographically isolated Lahontan Basin, which historically contained a large Pleistocene-era lake known as Lake Lahontan. At its largest expanse, Lake Lahontan covered what is now northern Nevada, eastern California, and southern Oregon (Service 1995). About 13,500 years ago, Lake Lahontan began to desiccate, due to a warming environment (Thompson *et al.* 1986, Benson and Thompson 1987), resulting in a smaller network of lakes and sinks within the Lahontan Basin fed by river and/or stream systems. This reduced area is located in what is now known as the Truckee, Carson, Walker, Susan, Humboldt, Quinn, Summit Lake/Black Rock Desert, and Coyote Lake watersheds (Figure 2). The approximate 370,000.0 surface acres of lake habitat and 7,400.0 miles of stream/river habitat is thought to have been occupied or had the potential to have been occupied by LCT circa 1800 (Gerstung 1986, Service 2009, LCT Coordinating Committee 2019).

By the mid-1800s, significant changes occurred across the landscape of the Lahontan Basin due to European settlement of Nevada, California, and Oregon. These changes included over-harvesting of LCT, mining, logging, water pollution, water diversions, dam and reservoir construction, and introduction of nonnative trout species into LCT-occupied habitats (Service 2009, LCT Coordinating Committee 2019). By the early 1900s, noticeable reductions in LCT abundance had occurred; by the mid-1900s, LCT were extirpated from substantial portions of all major drainage basins, and generally restricted to isolated headwater streams or small lake systems (Service 1995, LCT Coordinating Committee 2019). Within the estimated historical range of LCT (circa 1800), approximately 68.0 percent of stream and lake habitat provide occupied and/or potentially suitable habitat for LCT today (LCT Coordinating Committee 2019). The loss of potentially suitable habitat over time is due to climatic and anthropogenic factors discussed further below. Some habitat considered unsuitable for LCT today could potentially be restored and made suitable in the future with management action (LCT Coordinating Committee 2019).

As of 2023, 71 LCT populations that are self-sustaining to some degree exist in approximately 17.0 percent of the remaining potentially suitable habitat (Service 2023). A significant portion of existing populations occur in smaller, isolated habitat fragments, compete with nonnative trout, and/or have degraded habitat conditions. As a result, over half of existing populations are currently unlikely to be resilient or are at risk of extirpation (Service 2023). In addition, recent genetic evidence indicates that hybridization with rainbow trout (*Oncorhynchus mykiss*) is an issue in populations previously thought to be resilient (Service 2023).

The LCT Coordinating Committee (CC) identified and communicated the context and efforts necessary to conserve and ultimately recover LCT in the 2019 Updated Goals and Objectives (LCT Coordinating Committee 2019). The 3 Rs of representation, resiliency, and redundancy formed the framework of what conservation goals and objectives are needed to advance recovery of LCT in the future. These principles are well-accepted by the scientific community because they are rooted in findings from ecological theory and empirical studies (Shaffer and Stein 2000,

Wolf *et al.* 2015), and are aligned with guidance provided by the Service (Service 2016). The range of LCT was divided from 3 Geographic Management Units (GMUs; Service 1995) into 10 LCT Management Units (LMUs), where focus was placed on conserving the adaptive capacity of the species by ensuring its life-history characteristics and genetic diversity are conserved in the variable geographic and ecological settings in which the subspecies evolved (LCT Coordinating Committee 2019). This can be accomplished by ensuring LCT populations are represented (*i.e.*, conserve genetic and behavioral diversity within a variety of ecological and geographic settings), resilient (*i.e.*, contain enough individuals in larger, more diverse habitat fragments), and redundant (*i.e.*, spread the risk of extirpation due to catastrophic events) within each LMU.



**Figure 2.** Probable historical (brown streams and waterbodies), potentially suitable (yellow streams and waterbodies) and currently occupied (blue streams and waterbodies) LCT habitat separated into LCT Management Units within the Lahontan Basin (Service 2023).

## Threats to Lahontan Cutthroat Trout

The 2009 Service's 5-Year Status Review included a rangewide evaluation of threats to LCT (Service 2009); this evaluation is still applicable to LCT today. The 5-Year Status Review identified nonnative species, habitat fragmentation and isolation, degraded habitat conditions from land use activities, and impacts from climate change as the primary threats affecting the species' long-term persistence. These threats are described below.

### *Nonnative Salmonids*

Nonnative fish, especially salmonid species, are currently the greatest threat to LCT rangewide, resulting in loss of available habitat and range constrictions primarily through competition and hybridization. Nonnative salmonids including brook trout (*Salvelinus fontinalis*), brown trout (*Salmo trutta*), and rainbow trout pose significant threats to the resiliency of many LCT populations (at least 35.0 percent) across its range (Service 2009, Service 2023).

Brook trout in particular have been shown to out compete native cutthroat trout, including LCT (Service 2023). When brook trout invade streams occupied by cutthroat trout, the native cutthroat trout decline or are displaced due to higher densities, biomass, and production exhibited by brook trout (Griffith 1988, Behnke 1992, Young 1995, Benjamin and Baxter 2012). Competition with brook trout reduces recruitment of cutthroat trout and reduces inter-annual survival of juveniles, leading to a reduction of population size of the native cutthroat trout population (Peterson *et al.* 2004, McGrath and Lewis 2007). When LCT occur in the same stream as brook trout, LCT typically occupy the colder, headwater reaches and the nonnative trout occupy areas downstream (Dunham *et al.* 1999, Dunham *et al.* 2002).

Brown trout have also been shown to displace native cutthroat trout populations through competitive advantages (Wang and White 1994, De la Hoz Franco and Budy 2005, McHugh and Budy 2005, McHugh and Budy 2006, Budy *et al.* 2008, Shemai *et al.* 2007, McHugh *et al.* 2008). Brown trout occupy the best habitat, have higher growth rates, are associated with reduced survival of cutthroat trout, and have a distinct allopatric (in different geographic areas) distribution within a watershed when they co-occur with native cutthroat trout (Wang and White 1994, De La Hoz Franco and Budy 2005, McHugh and Budy 2005, McHugh and Budy 2006, Shemai *et al.* 2007, Budy *et al.* 2008).

Hybridization from nonnative salmonids is a common threat to all native western trout species, including LCT (Gresswell 1988, Behnke 1992, Young 1995, Service 2009). Nonnative rainbow trout readily hybridize with native cutthroat trout and produce fertile offspring; however, fitness and survival rates decrease over time as the proportion of rainbow trout admixture increases (Muhlfeld *et al.* 2009, Rasmussen *et al.* 2010). Even with reduced fitness over time, hybridization spreads rapidly because the initial F<sub>1</sub> hybrids have relatively high fitness, hybrids tend to stray more frequently, and all offspring of hybrids are hybrids (Boyer *et al.* 2008, Muhlfeld *et al.* 2009). Extensive genetic mixing of natives, nonnatives, and hybrids contributes to the loss of locally adapted genotypes and can lead to the extinction of a population or an entire species (Leary *et al.* 1995, Rhymer and Simberloff 1996). Isolating populations of native salmonids from nonnative salmonids has become a frequently used management option;

however, barriers can restrict life history traits, isolate populations in small habitats which reduces long-term survival, and do not allow for recolonization if the population is extirpated (Fausch *et al.* 2009).

### *Habitat Fragmentation and Population Isolation*

Habitat fragmentation is one of the leading causes of cutthroat trout population declines in the western United States (Dunham *et al.* 1997). Habitat fragmentation reduces the total habitat available, reduces habitat complexity, and prevents gene flow (Dunham *et al.* 1997). Fragmentation accelerates extinction, especially when movement of fish among stream segments is not possible (Fagan 2002). Isolated populations are more vulnerable to extinction through demographic stochasticity, environmental stochasticity, loss of genetic heterozygosity, and human disturbance (Lande 2002).

A significant portion of LCT populations (about 72.0 percent) are completely isolated in small stream reaches lacking adequate habitat size and complexity (Service 2009, Service 2023). Evidence of loss of genetic diversity has been found in small, isolated LCT populations (Neville *et al.* 2006, Peacock and Kirchoff 2007). Several studies found that population viability of cutthroat trout is correlated with stream length or habitat size (Hilderbrand and Kershner 2000, Harig and Fausch 2002). A shorter stream reach could mean that one or more of LCT's required habitats is either missing or inadequate for completion of the species' life cycle.

### *Habitat Degradation*

#### Livestock Grazing

Some level of livestock grazing is associated with the majority (about 90.0 percent) of LCT populations (Service 2009, Service 2023). Livestock grazing can affect riparian areas by changing, reducing, or eliminating vegetation (Schulz and Leininger 1990, Green and Kauffman 1995), and by the actual loss of riparian areas through channel widening (Overton *et al.* 1994), channel degradation, or lowering of the water table (Chaney *et al.* 1990). Effects to fish habitat include reduction of shade and cover and resultant increases in water temperature, changes in stream morphology, and the addition of sediment due to bank degradation and off-site soil erosion (Platts 1991, Belsky *et al.* 1999).

#### Water Management

Water management can negatively impact LCT through reduced water quality and quantity, fish entrainment into irrigation systems, fish barriers, and the loss of habitat diversity (Service 2009). Water management is a threat to LCT throughout its range (Service 2023) and impacts from water management activities to LCT occur conspicuously in the Truckee, Walker River, Reese River, and Humboldt River watersheds. Natural low flows caused by droughts have occurred historically but are now exacerbated by flow diversions. Where water diversions lead to lower instream flows, LCT are affected by increased water temperature, limited access to aquatic habitats, and increased opportunity for competition between fish species (Spence *et al.* 1996, Harvey *et al.* 2006). Dewatering of stream channels for irrigation may result in stranding of fish, exposure and desiccation of spawning redds and nursery habitat, and disruption of LCT

migratory patterns (Spence *et al.* 1996).

Many diversion structures fragment watersheds and act as barriers to fish migration, limiting the ability of migrating adults, juveniles and fry to migrate to required life history habitats (Fausch *et al.* 2002, Ovidio and Philippart 2002, Compton *et al.* 2008). Certain barriers are complete obstructions to upstream immigration, while others may be partial barriers. When access is limited, fish may spawn in and utilize sub-optimal habitat. Out-migrating fry and juveniles may be injured or killed during downstream migration through entrainment into irrigation canals or passage over obstructions (Carlson and Rahel 2007, Roberts and Rahel 2008, Simpson and Ostrand 2012, Walters *et al.* 2012, Walters *et al.* 2013).

### Mining

While mining is thought to be a low-magnitude threat to LCT on a rangewide basis, areas of concentrated impact do exist across the species' range, such as in the North Fork Humboldt River drainage (Service 2023). The effects of mining on receiving water systems can represent a severe threat to all aquatic organisms in localized situations (Nelson *et al.* 1991). Mining can contribute toxic substances into waterways, alter stream morphology, and dewater streams completely (Nelson *et al.* 1991, Service 2008). Mining can also have dramatic impacts to groundwater dependent ecosystems. Mining activities through exploratory drilling, open pit and underground mining, or dewatering alter the hydrologic pathways near the mine site, which can cause a multitude of impacts such as declining aquifers, drying of springs, and reducing streamflow in nearby streams (Younger and Wolkersdorfer 2004).

### Climate Change

Effects of climate change include, but are not limited to, changes in types and amounts of precipitation (Knowles *et al.* 2006; Seager *et al.* 2007), reduced snowpack (Mote *et al.* 2005; Pierce *et al.* 2008), earlier spring run-off (Stewart *et al.* 2005; Hidalgo *et al.* 2009), longer and more intense fire seasons (Brown *et al.* 2004; Westerling *et al.* 2006; Bachelet *et al.* 2007), and more frequent extreme weather events (Diffenbaugh *et al.* 2005; Rosenzweig *et al.* 2007; Kunkel *et al.* 2009). Climate change is predicted to have several effects on cold water habitat including: (1) Increased water temperature; (2) decreased stream flow; (3) change in the hydrograph; (4) increased frequency and severity of extreme events such as drought and floods; and (5) changing biotic interactions between native and nonnative species (Stewart *et al.* 2005; Ficke *et al.* 2007; Bates *et al.* 2008; Webb *et al.* 2008; Williams *et al.* 2009; Haak *et al.* 2010; Kaushal *et al.* 2010; Point Reyes Bird Observatory (PRBO) Conservation Science 2011; Wehner *et al.* 2011; Wenger *et al.* 2011; Leppi *et al.* 2012; Arismendi *et al.* 2013; Roberts *et al.* 2017).

Climate change is expected to have multiple negative impacts to cold water salmonids, including but not limited to rising water temperatures. Haak *et al.* (2010) analyzed the potential cumulative impacts of four climate risk factors (increased stream temperatures, winter flooding, wildfire, and drought) on the persistence of 10 native salmonids in the western United States, including LCT. The primary climate risk factors for LCT are drought and increased stream temperatures (Haak *et al.* 2010).

### Drought

Drought-related effects can impact many different scales of organizational complexity, including effects to individuals, local populations, local fish assemblages, metapopulations, watershed or regional faunas, ecosystems, and evolutionary impacts (Labbe and Fausch 2000, Lake 2003, Matthews and Marsh-Matthews 2003). In a review of 50 different studies on drought-related impacts to fish, Matthews and Marsh-Matthews (2003) reported the most common impacts were decreases in numbers at the population and community level, loss of habitat, poor water quality (*i.e.*, hypoxia and temperature), decreased ability for movement, crowding, and desiccation. Drought related decreases in several LCT populations have been documented (Dunham 1996, Ray *et al.* 2007, Neville *et al.* 2016).

Small streams are more susceptible than larger streams to drying, increased stream temperatures during the summer, and freezing during the winter (Lake 2003). Given that many LCT populations exist in small, headwater streams, populations are at disproportional risk to these effects. Although not all small streams have equal risk from drought (*i.e.*, spring-dominated flow has less risk than snowmelt-dominated flow), small headwater streams, especially those with an inadequate number of deep pools, are most likely to lose suitable habitat (Lake 2003). However, functioning small streams with good quality habitat (*e.g.*, deep pools, healthy riparian vegetation) and limited anthropogenic influences can sustain salmonids during drought conditions (Magoulick and Kobza 2003, White and Rahel 2008).

### Wildfire

Although LCT evolved in a fire-prone environment, increases in wildfire frequency and severity due to increased fuel loads and effects from climate change (Westerling *et al.* 2006, Miller *et al.* 2019) increases the threat to LCT. Wildfires are also a threat to LCT because of existing habitat loss and the fragmented and isolated state of occupied habitat.

Direct mortality of fish has been observed, mainly in smaller streams due to greater impacts from fire on smaller aquatic habitats (Rinne and Jacoby 2005, Howell 2006). Most negative effects to aquatic species after wildfire are due to the immediate loss or alteration of habitat. Riparian vegetation is directly consumed by fire, which may cause an increase in water temperature and the loss of cover for aquatic species (Dunham *et al.* 2007). Increases in stream temperature are a common occurrence after a wildfire due to loss of riparian vegetation and increased solar radiation (Gresswell 1999, Moore *et al.* 2005, Dunham *et al.* 2007, Isaak *et al.* 2010, Mahlum *et al.* 2011). Post-fire hydrologic events can severely reduce or extirpate local fish populations (Gresswell 1999, Burton 2005, Sestrich *et al.* 2011). Isolated fish populations are at a much higher risk of extinction because they cannot recolonize after a large disturbance (Rinne 1996, Burton 2005, Dunham *et al.* 2007). Additionally, effects on small streams are more severe because larger proportions of the drainage are burned at these smaller spatial scales, in contrast to larger stream orders, where relatively small proportions of the drainage burn (Romme *et al.* 2011, Sestrich *et al.* 2011).

## **ENVIRONMENTAL BASELINE**

The implementing regulations for section 7(a)(2) (50 CFR 402.02) define the environmental

baseline as “the condition of the listed species or its designated critical habitat in the action area, without the consequences to the listed species or designated critical habitat caused by the proposed action. The environmental baseline includes the past and present impacts of all Federal, State, or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early section 7 consultation, and the impact of State or private actions which are contemporaneous with the consultation in process. The consequences to listed species or designated critical habitat from ongoing agency activities or existing agency facilities that are not within the agency’s discretion to modify are part of the environmental baseline.”

### **Status of the Species in the Action Area**

Lahontan cutthroat trout historically were the only native trout in the Lake Tahoe watershed, and subsequently the Tahoe LCT Management Unit; prior to western settlement, they likely occupied most of the available stream and lake habitats that were accessible through Lake Tahoe. Although Marlette Lake did not exist at that time (see next section), it is likely that LCT used Marlette Creek, at least to some degree. Currently, LCT occupy several different locations for various purposes within the Tahoe LCT Management Unit, including a resilient, recovery population within the Upper Truckee River system that is currently being expanded downstream towards Lake Tahoe, stocked recreational and research populations within Fallen Leaf Lake and Lake Tahoe, and the recreational population found within Marlette Lake.

### ***Habitat Characteristics and Existing Condition of the Action Area***

Marlette Lake is an artificial reservoir first created *via* the construction of a dam in the late 1800s that was further fortified and raised in 1959 (NDOW 2023). Today, it provides alpine lake habitat, suitable for a productive cold-water fishery. Due to the stocking of LCT and rainbow trout annually by NDOW, the lake supports a popular recreational sport-fishery. Water from Marlette Lake is also used for domestic purposes and for drinking water. Mostly, this area experiences backcountry-only use, with heavier use occurring in the summer months, including consumptive angling of LCT.

### ***Condition (Status) of the Species in the Action Area***

As previously mentioned, LCT are present within Marlette Lake for recreational, and not recovery, purposes. Each spring, NDOW operates a spawning station on a small tributary that enters the lake along its southern edge; rainbow trout and LCT are captured, spawned, and released. Milt and eggs are combined to produce pure rainbow trout, cuttbows (by crossing a pure LCT with a pure rainbow trout), and pure LCT. These fertilized eggs are incubated and hatched within NDOW facilities; fish are held on station for various lengths of time and are stocked through Nevada for recreational purposes. Because LCT cannot naturally reproduce in the tributaries associated with Marlette Lake, NDOW annually stocks them to maintain the recreational fishery and continue to develop brood for spawning activities; thus, only adult LCT exist in the lake.

It was conservatively estimated, by totaling NDOW’s annual stocking numbers for the last 5

years, that up 21,000 LCT could be present in Marlette Lake in October 2024 when the proposed action would begin (FEMA 2023). Five years was chosen as it was assumed that the average lifespan of LCT in Marlette Lake is 5 years based on expert opinion (FEMA 2023). However, simply totaling the number of stocked LCT year over year for its expected lifespan in that habitat does not provide an accurate estimate of the population's size. That is because LCT are subject to mortality after each stocking event due to their inability to adapt to a new environment (with variable mortality rates, but relatively high normally), competition with and likely predation by resident non-native rainbow trout and LCT, and consumptive angling throughout the summer months by the public. Thus, there will likely be many fewer LCT than the estimated 21,000 individuals when the proposed action would begin. However, because demographic surveys are not completed for this lake as it is mostly used as a production lake, this is the best way available to estimate the current population size.

### ***Recovery***

Marlette Lake is not identified as a priority population for the conservation and recovery of LCT in either the 1995 Recovery Plan for LCT (Service 1995) or the 2019 Updated Goals and Objectives for the Conservation of LCT, which reflect the recovery team's current recovery goals and objectives (LCT Coordinating Committee 2019).

### **EFFECTS OF THE ACTION**

The implementing regulations for section 7(a)(2) (50 CFR § 402.02) define effects of the action as “all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action. A consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action” (50 CFR 402.17).

The regulations for section 7(a)(2) note that “a conclusion of reasonably certain to occur must be based on clear and substantial information, using the best scientific and commercial data available” [50 CFR § 402.17(a)]. When considering whether activities caused by the proposed action (but not part of the proposed action) or activities reviewed under cumulative effects are reasonably certain to occur, we consider factors such as (1) past experiences with activities that have resulted from actions that are similar in scope, nature, and magnitude to the proposed action; (2) existing plans for the activity; and (3) any remaining economic, administrative, and legal requirements necessary for the activity to go forward.

In conducting this analysis, we have considered factors described and referenced above in the Status of the Species section of this document and within the Biological Assessment associated with this proposed action (FEMA 2023) in determining whether effects are reasonably certain to occur. Because natural spawning cannot occur in Marlette Lake and NDOW manages this population for fish production mostly, only adult LCT will be present at the time of the proposed action; thus, effects to eggs, fry, or young-of-year were not considered in this consultation. We have also determined that certain consequences are not caused by the proposed action, such as the increase or spread of disease, poaching, or collecting, because they are so remote in time, or

geographically remote, or separated by a lengthy causal chain, so as to make those consequences not reasonably certain to occur.

## **Effects of the Proposed Action on Lahontan Cutthroat Trout**

### ***Construction***

The actual retrograding of Marlette Lake Dam will have little effect on LCT within Marlette Lake. All the construction activities (*e.g.*, removing rip-rap and regrading/replacing embankments of the dam, removing and replacing the concrete spillway associated with the dam, adding/upgrading intake/outlet structures and piping) will occur in a dry forebay work area disassociated from the lake. Due to the numerous best management practices in place (see Section 2.4: Best Management Practices, FEMA 2023, for more information), it is also unlikely that these construction activities would influence water quality in Marlette Lake during re-watering of the forebay work area either. Moreover, most of the work on the dam is replacement of aged infrastructure (except for the addition of a toe drain and the enlargement of the downstream embankment), so upon re-watering, it would be very similar to the existing condition for LCT. The enlargement of the downstream embankment will not change existing conditions for LCT because LCT do not have access to the downstream portion of the dam.

However, the dewatering of the proposed action area will undoubtedly adversely affect LCT in Marlette Lake.

### ***Dewatering/Rewatering***

The dewatering of Marlette Lake will result in significant adverse effects to LCT. The available lake habitat will be reduced by at least 52 percent over the course of six months (October 2024–March 2025), and dewatering will occur during the winter when reducing the lake volume increases the likelihood that more of the lake’s water will freeze. These factors will increase competition for resources and decrease available food and habitat, which is likely to result in mortality of at least a portion of the existing LCT population.

The NDOW will capture and relocate as many LCT as they reasonably can to waters unaffected by the proposed action prior to both dewatering activities. It is unclear how many individuals will be captured and relocated during these efforts, or how many might die during or because of these activities. It is clear, however, that these proposed capture and relocation activities are also likely to result in mortality of at least several LCT individuals.

It is unlikely that rewatering activities will have significant impacts on LCT remaining in the lake after construction is completed due to the various best management practices in place to reduce turbidity and the rate of change (see Section 2.4: Best Management Practices, FEMA 2023, for more information). For example, it is proposed to slowly rewater the forebay work area to reduce effects from increased sediment in the water column and to keep sediment barriers in place until all disturbance associated with construction is completed. In fact, the LCT that remain in the lake after construction is completed are likely to benefit from increased habitat availability due to the reduction in overall LCT numbers, and through time, increased food availability and

decreased competition while the lake rewaters naturally and more food and habitat become available; this will likely continue to occur for the 6 years following the completion of the proposed action, or at least until NDOW resumes trout stocking activities.

### ***Operations/Maintenance***

Marlette Lake Dam has existed in its current form since 1957. Operations and maintenance activities have not been examined previously and were not included in the biological assessment for the proposed action. However, future maintenance activities will likely be largely reduced by the proposed action. In addition, several of the components being replaced or installed (e.g., intake piping, toe drain) are more modern and contain improved safety features, likely further reducing impacts to fish in the lake. Therefore, it is unlikely that impacts to LCT of operations or maintenance of Marlette Lake Dam will be increased beyond previous levels upon completion of the proposed action.

### **Effects on Recovery**

The effects of the proposed project are not expected to reduce recovery potential for LCT. The Marlette Lake population of LCT is not prioritized for recovery or conservation of the species in either the 1995 Recovery Plan or the 2019 Updated Goals and Objectives for LCT. Furthermore, this population is maintained solely for recreation and as a broodstock, and due to this was not examined in the most recent Status Review, which focused on evaluating LCT populations which are prioritized for the recovery of the species. Recovery actions in this basin are currently ongoing elsewhere, and the inclusion of the Marlette Lake recreational population is not considered essential to achieving recovery.

### **Summary of Effects**

This project will significantly and adversely affect LCT within Marlette Lake. It is likely that at least 52 percent of the habitat within Marlette Lake will be lost through the dewatering of the lake to allow for dam retrograde activities. This will kill a significant number of the LCT from this population through the loss of habitat, which will increase competition and predation, and decrease food availability. The effects to individuals have been minimized as much as possible through the inclusion of extensive best management practices, but to retrograde the existing dam, over half of the lake's water must be removed. However, it is possible that NDOW can capture and relocate many LCT prior to or during dewatering activities though, reducing the loss caused by the proposed action. In the end, the loss of LCT in this system does not affect the recovery of this species, as this population is managed for recreational and broodstock purposes only.

### **CUMULATIVE EFFECTS**

Cumulative effects include the effects of future State, tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. We do not consider future Federal actions that are unrelated to the proposed action in this section because they require separate consultation pursuant to section 7 of the Act. As previously mentioned, NDOW manages this LCT population as a recreational sport-fishery and stocks LCT and rainbow trout annually within it to maintain the resource. Additionally, NDOW staff operate a

spawning station in the summer and brood in this lake as used to create offspring that are stocked in other water bodies throughout Nevada. It is likely that these activities will continue upon the rewatering of Marlette Lake. It is also likely that the public continues to consumptively fish for LCT and rainbow trout in this lake upon the reestablishment of the sport-fishery. Other than what was occurring before this proposed action, there are no other known cumulative effects to be considered.

## **CONCLUSION**

The regulatory definition of “to jeopardize the continued existence of the species” focuses on assessing the effects of the proposed action on the reproduction, numbers, and distribution, and their effect on the survival and recovery of the species being considered in the biological opinion. For that reason, we have used those aspects of LCT status as the basis to assess the overall effect of the proposed action on the species.

The proposed project will undoubtedly significantly reduce the numbers of LCT in Marlette Lake as the lake’s available habitat and food resources are reduced during and after dewatering. It is likely that the reduction in numbers of LCT will mirror the loss of habitat (by over at least 52 percent) of the conservatively estimated population of 21,000. It won’t affect the reproduction of LCT in this system because they do not naturally reproduce. LCT, at least in small numbers, may survive the dewatering event, but their distribution in the lake will be greatly reduced (to at least less than 47 percent of the current lake habitat). Regardless of whether most or all the LCT die due to the proposed action, it will not affect the recovery of the species, as NDOW manages this population, and it only exists because of their annual spawning and stocking activities. Lastly, NDOW is reasonably certain to reestablish this recreation sport-fishery upon the rewatering of Marlette Lake.

After reviewing the current status of LCT, the environmental baseline for the action area, the effects of the proposed Marlette Lake Dam Resilient Infrastructure Project and the cumulative effects, it is the Service's biological opinion that the Marlette Lake Dam Resilient Infrastructure Project, as proposed, is not likely to jeopardize the continued existence of LCT.

## **INCIDENTAL TAKE STATEMENT**

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened wildlife species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm in the definition of “take” in the Act means an act which actually kills or injures wildlife. Such [an] act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering (50 CFR 17.3). Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not the purpose of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this incidental take statement.

## AMOUNT OR EXTENT OF TAKE

The Service anticipates that the proposed project considered in this biological opinion is reasonably certain to result in direct take of adult LCT during capture and relocation activities or during/after dewatering. The Service is reasonably certain that the incidental take described here will occur because: (1) LCT are known to occur in Marlette Lake and have no access to other waterways into which they could move; and (2) the proposed project will impact habitat that could impair feeding or sheltering for LCT.

We cannot quantify the precise number of LCT that may be taken as a result of the proposed action because it is unclear how many LCT may be captured *via* electrofishing and subsequently relocated, or how the dewatering of the lake by 52 percent of its normal volume will ultimately affect the food/habitat availability in the lake, and the resulting effect that will have on any remaining LCT. For example, the lake may freeze solid because of its reduced volume, and then all the fish present in the remaining amount of water may die. In contrast, the winter may be mild, and the lake may warm up sooner in the spring/summer than normal because of its reduced volume, increasing algal/plant production and ultimately habitat complexity and food availability. In addition, finding a dead or injured LCT will be challenging as scavengers will likely eat carcasses quickly if on the surface or shore, or individuals may sink to the bottom of the lake eluding detection. Accessing the lake following dewatering to confirm mortality numbers may also be impossible due to conditions of the dewatered lake shore.

We also recognize that for every LCT found dead or injured, other individuals may be killed or injured that are not detected, so when we determine an appropriate take level we are anticipating that the actual take would be higher and we set the number below that level. Similarly, for estimating the number of LCT that would be taken by capture, we cannot predict how many may be encountered for reasons stated earlier. Also, because capture can be highly variable, depending upon the species and the timing of the activity, we do not anticipate a number so low that reinitiation would be triggered before the effects of the activity were greater than what we determined in the Effects Analysis. Consequently, we are unable to reasonably anticipate the actual number of LCT that would be taken by the proposed action; however, we must provide a level at which formal consultation would have to be reinitiated.

Based on the best available scientific and commercial information, it is estimated that there are, at most, 21,000 LCT in Marlette Lake. Given the analysis above and in the Environmental Baseline and Effects Analysis sections of this biological opinion, it is reasonable to estimate that adverse effects to LCT will likely be high given the nature of the proposed activities, and in fact may result in total loss of the population. As this population is not a priority for recovery and conservation of the species, it seems reasonable to allow this amount of incidental take. If more than 21,000 LCT are found dead or wounded or are captured, FEMA must contact our office immediately to reinitiate formal consultation. Moreover, this fishery is reasonably certain to be reestablished upon lake rewatering, resulting in the replacement of the LCT lost because of this project. Project activities that are likely to cause additional take should cease as the exemption provided pursuant to section 7(o)(2) may lapse and any further take could be a violation of section 4(d) or 9.

## **REASONABLE AND PRUDENT MEASURES**

The measures described below are non-discretionary and must be undertaken by FEMA or made binding conditions of any grant or permit issued to the Nevada Division of Emergency Management (NDEM), as appropriate, for the exemption in section 7(o)(2) to apply. FEMA has a continuing duty to regulate the activity covered by this incidental take statement. If FEMA (1) fails to assume and implement the terms and conditions or (2) fails to require the NDEM to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. To monitor the impact of incidental take, FEMA must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement [50 CFR 402.14(i)(3)].

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize impacts of incidental take of LCT:

- 1) Minimize effects of electrofishing to LCT captured for relocation.
- 2) Monitor incidental take resulting from the proposed project and report the findings of that monitoring to the RFWO.

## **TERMS AND CONDITIONS**

To be exempt from the prohibitions of section 9 of the Act, FEMA must comply with the following terms and conditions, which implement the reasonable and prudent measures described above and outline reporting and monitoring requirements. These terms and conditions are non-discretionary.

1. Electrofishing guidelines (Enclosure) shall be followed during the LCT capture and relocation portion of the proposed action. The guidelines require that field crews be trained in observing animals for signs of stress and shown how to adjust electrofishing equipment to minimize that stress. All electrofishing equipment operators shall be trained by qualified personnel to be familiar with equipment, handling, settings, maintenance, and safety. Only direct current (DC) electrofishing equipment shall be used, and the equipment shall be regularly maintained to ensure proper operating condition. Voltage, pulse width, and rate shall be kept at minimum levels, and water conductivity shall be tested before electrofishing starts so the minimum levels can be determined. Due to the low settings used, shocked fish normally revive instantaneously. Fish requiring revivification shall receive immediate, adequate care.
2. FEMA shall provide the Service with annual reports of project implementation including photo documentation of all aspects of the project. The annual report should briefly summarize the previous year's activities, including: (1) Implementation and effectiveness of the terms and conditions, (2) documentation of take of LCT associated with the capture and relocation portion of this project, to include numbers captured and released, their disposition, and any mortality, and (3) documentation of take of LCT associated with the dewatering portion of the proposed project, to include to the best knowledge, the number of LCT found injured or deceased. Additional information may be included as necessary or requested by the

Service. The first annual report shall be due to the Service on or before December 31 of the first year of project implementation and every year thereafter for the duration of the proposed project. The address for the Reno Fish and Wildlife Office is:

Field Supervisor  
U.S. Fish and Wildlife Service  
1340 Financial Boulevard, Suite 234  
Reno, Nevada 89502  
Telephone: (775) 861-6300

## REPORTING REQUIREMENTS

Pursuant to 50 CFR 402.14(i)(3), FEMA must report the progress of the action and its impact on the species to the Service as specified in this incidental take statement. Given the context of the Project and proposed action, LCT take is expected as a result of project activities. Care must be taken in handling sick or injured LCT to ensure effective treatment and care and in handling dead specimens to preserve biological material in the best possible state. In conjunction with the care of sick and injured fish or wildlife and the preservation of biological materials from a dead specimen, FEMA has the responsibility to ensure that information relative to the date, time, and location of the fish, when found, and possible cause of injury or death of each is recorded and provided to the Service via the annual reporting requirements defined in Reasonable and Prudent Measure Number 2 of this BO.

## REINITIATION NOTICE

This concludes formal consultation on the actions outlined in FEMA's request for consultation letter for the Marlette Lake Dam Resilient Infrastructure Project. As provided in 50 CFR 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, the exemption issued pursuant to section 7(o)(2) may have lapsed and any further take could be a violation of section 4(d) or 9. Consequently, we recommend that any operations causing such take cease pending reinitiation.

If you have any questions about this biological opinion, please contact Sean Vogt of my staff at 775-861-6330, or by electronic mail at [sean\\_vogt@fws.gov](mailto:sean_vogt@fws.gov).

Sincerely,

JODIE  
MAMUSCIA

Digitally signed by  
JODIE MAMUSCIA  
Date: 2023.12.28  
11:41:25 -07'00'

Jodie Mamuscia  
Acting Field Supervisor

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