

**ENVIRONMENTAL ASSESSMENT
FOR SMALL HYDROELECTRIC PROJECT
EXEMPTION**

Camp McDowell Project
FERC Project No. 14793-000
Alabama

Federal Energy Regulatory Commission
Office of Energy Projects
Division of Hydropower Licensing
888 First Street, NE
Washington, D.C. 20426

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ENVIRONMENTAL ASSESSMENT

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Washington, D.C.**

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FERC No. 14793-000, AL**

1.0 APPLICATION

On July 12, 2016, the Domestic and Foreign Missionary Society of the Protestant Episcopal Diocese of Alabama (Episcopal Diocese) filed, with the Federal Energy Regulatory Commission (Commission), an application for a small hydroelectric project (10 megawatt [MW] or less) exemption from licensing for the proposed 140-kilowatt (kW) Camp McDowell Hydroelectric Project (project). The project would be located on Clear Creek, near the town of Nauvoo, in Winston County, Alabama (Figure 1). The project would not occupy federal land.

2.0 PURPOSE OF ACTION AND NEED FOR POWER

2.1 Purpose of Action

The Commission must decide whether to grant Episcopal Diocese an exemption from licensing for the project and what conditions, if any, should be included in any exemption issued. Issuing an exemption from licensing would allow Episcopal Diocese to generate electricity, making about 950 megawatt-hours (MWh) of electric power from a renewable resource available to the region annually. In this Environmental Assessment (EA), we assess the effects of constructing and operating the project as proposed by Episcopal Diocese, alternatives to the proposed project including a no-action alternative, and recommend conditions to become a part of any exemption from licensing that may be issued.

2.2 Need for Power

Under section 213 of the Public Utility Regulatory Policies Act (PURPA), the authority of the Commission to grant an exemption from licensing is not limited by a determination of the need for power. See *Briggs Hydroelectric*, 32 FERC ¶ 61,399 (1985). See also *David Cereghino*, 35 FERC ¶ 61,067 (1986).

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Figure 1: Camp McDowell Project site plan and general location (see insert) in Alabama. (Source: GoogleMaps, staff).



3.0 PROPOSED ACTION AND ALTERNATIVES

3.1 Proposed Action

3.1.1 Project Description

The Camp McDowell Project would consist of an existing 157-foot-long, 13.5-foot-high concrete/masonry dam consisting of: (1) a 113-foot-long spillway with a crest elevation of 513.5 feet North American Vertical Datum of 1927 (NAVD 27); (2) a 9-foot-long non-overflow section with a 5-foot-diameter low level gated release pipe; and (3) a 35-foot-long non-overflow section. The dam creates a 10-acre impoundment, on Clear Creek, at a normal water surface elevation of 513.5 feet.

New facilities to be constructed by Episcopal Diocese would include: (1) a 26-foot-wide, 1.3-foot-deep gated intake located on top of the spillway protected by a 6-foot-high, 30-foot-wide steel trash rack with 6-inch clear bar spacing; (2) a 27-foot-long, 6-foot-wide, concrete sluiceway; (3) a concrete controller housing located at the top of the sluiceway; (4) a single 50-foot-long by 9-foot diameter Archimedes screw turbine-generator unit (ASG unit), rated at 140 kW; (5) a water-level sensor, and automatic intake gate controller; (6) a 650-foot-long, 460-volt, above-ground transmission line connecting the powerhouse electrical panel to the National Grid's distribution system via a transformer bank located about 75 feet North of Camp McDowell's Epps Dining Hall; and (7) appurtenant facilities.

The gated intake for the project is designed to draw water from the surface of the reservoir. During operation, water would pass through the intake gate protected by the trashrack, down the concrete sluiceway, and into the ASG unit. Water passing through the ASG unit would be discharged immediately downstream into Clear Creek. There would be no bypassed reach, and the base of the dam would continue to be watered by backwater effect from the downstream Lewis Smith¹ impoundment. Power would be transmitted to the regional distribution grid. The average annual generation would be about 950 MWh.

¹ Alabama Power Company operates the Lewis-Smith Development as a storage reservoir with water surface elevations between 510 feet and 522 feet mean sea level. 130 FERC ¶ 62,271 (2010).

3.1.2 Project Operation

Episcopal Diocese proposes to operate the project in run-of-river mode, where outflow from the project approximates inflow, and water levels in Clear Creek would not be drawn down below the level of the spillway for electric generation.

The hydraulic capacity of the project would range from 115 to 175 cubic feet per second (cfs), the minimum and maximum hydraulic capacities of the ASG unit, respectively. When inflow to the impoundment is less than 115 cfs, the project would not operate and all flow would be released over the spillway. When inflow is greater than 175 cfs, the project would operate at its maximum hydraulic capacity and all remaining flows would be passed over the spillway. Inflows to the project are not sufficient to operate the project year-round. Flows at the project exceed the 115 cfs minimum hydraulic capacity of the generating unit about 50 percent of the time, and adequate flows would be available for generation about 7 months out of the year (October through April).

To maintain run-of-river operation, Episcopal Diocese would use a water-level sensor to monitor the impoundment, and an automatic controller to operate the intake gate. The intake gate would be raised or lowered to maintain the impoundment at a level that would be no lower than the level of the spillway when the project is operating.

3.1.3 Proposed Measures

In addition to the proposed measures above, Episcopal Diocese proposes the following:

- Construct the project during low flow conditions and use best management practices (BMPs) to minimize soil erosion and in-river siltation during project construction.
- Develop a plan for public safety to include installing warning signs, visible from the water and the shoreline, to protect boaters and hikers from potential hazards of the project.
- Tree removal activities, if necessary, will be done between October 15th and March 31st, in accordance with the Range-Wide Indiana Bat Summer Survey Guidelines, January 2014, and the Northern Long-Eared Bat Interim Conference and Planning Guidance, January 6, 2016.

3.2 Section 30(C) Conditions

Pursuant to section 30(c) of the FPA, 16 U.S.C. § 823a(c), federal and state fish and wildlife agencies have mandatory conditioning authority on exempted projects. No entities filed conditions.

3.3 Additional Staff-recommended Measures

The staff alternative includes Episcopal Diocese's proposed measures and the following additional staff-recommended measures or modifications: (1) develop a soil erosion and sediment control plan that includes the proposed BMPs; (2) consult with the Alabama State Historic Preservation Officer (Alabama SHPO) and potentially affected Indian tribes prior to implementing any project modifications, including maintenance activities, land-clearing or land-disturbing activities, or changes to project operation or facilities, that do not require Commission approval, but could affect cultural resources; and (3) consult with the Alabama SHPO and potentially affected Indian tribes if previously unidentified cultural resources are discovered during the course of constructing, operating or maintaining project works or other project facilities. Below, in section 5.0, we briefly discuss the anticipated environmental effects of issuing an exemption from licensing for the proposed project under the staff alternative

3.4 No-Action Alternative

Under the no-action alternative (i.e., denial of the application), the project would not be constructed. The project would not annually generate an estimated average of 950 MWh, nor would environmental resources in the project area be affected.

4.0 CONSULTATION AND COMPLIANCE

4.1 Agency Consultation

The Commission's regulations require that applicants consult with appropriate state and federal agencies, tribes, and the public before filing an exemption application. This consultation is required to comply with the Endangered Species Act, the National Historic Preservation Act, and other federal statutes. Pre-filing (or initial) consultation must be completed and documented in accordance with Commission regulations.

4.2 Public Outreach and Scoping

On April 26, 2016, Episcopal Diocese conducted a pre-filing meeting and site visit at the project location. Episcopal Diocese invited federal, state, and local agencies and

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the general public to participate in the meetings and site visit. The U.S. Fish and Wildlife Service (FWS) was the only attendee for the on-site meeting.

On July 12, 2016, Episcopal Diocese filed its application for exemption from licensing. On July 27, 2016, the Commission issued a public notice tendering the final application for exemption from licensing and soliciting additional study requests.

On September 1, 2017, the Commission issued a public notice accepting the exemption application, soliciting motions to intervene, stating the Commission's intent to waive scoping, stating that the application was ready for environmental analysis, and requesting comments, terms and conditions, and recommendations. The notice established that motions to intervene and protests, as well as comments, terms and conditions, and recommendations were due 30 days from the issuance date of the notice. No requests to intervene were filed. The U.S. Department of the Interior (Interior) filed a letter on September 27, 2017, stating that it had no comments.

4.3 Endangered Species Act

Section 7 of the Endangered Species Act (ESA) requires federal agencies to ensure that their actions are not likely to jeopardize the continued existence of endangered or threatened species or result in the destruction or adverse modification of the critical habitat of such species. Five federally listed endangered species (Indiana Bat, rush darter, Black Warrior waterdog, dark pigtoe, and ovate clubshell) and five federally listed threatened species (northern long-eared bat, flattened musk turtle, Alabama streak-sorus fern, white fringeless orchid, and Mohr's Barbara's buttons) could potentially occur in the vicinity of the Camp McDowell Project.²

Critical habitat has been designated for the rush darter, the dark pigtoe and ovate clubshell mussels, and the Black Warrior waterdog. However, none of the designated critical habitat for the species is located within the project area.

The rush darter has not been documented in the lower reaches of Clear Creek, including the project area, where river size is much larger than that preferred by the species. The dark pigtoe and ovate clubshell have not been documented to occur in Clear Creek. The flattened musk turtle, Black Warrior waterdog, Alabama streak-sorus fern,

² See Interior's official list of threatened and endangered species accessed by staff using the IPaC website (<https://ecos.fws.gov/ipac/>) on November 17, 2017, and filed on January 10, 2018. By letter filed January 10, 2018 FWS identified three species: the rush darter, flattened musk turtle, and Black Warrior waterdog. Staff's review of Interior's official list identified 7 additional species for a total of ten threatened or endangered species.

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white fringeless orchid, and Mohr's Barbara's buttons also have not been found in the Clear Creek drainage, and are not likely to be found in the project area. The northern long-eared bat and Indiana bat could occur in the project area, though none have been documented in the immediate vicinity of the proposed project, nor is there any known roosting habitat in the project area. In any case, Episcopal Diocese does not propose to disturb potential habitat in the project area. However, tree removal activities, if necessary, would be done between October 15th and March 31st.

Our analysis of project effects on the aforementioned 10 listed species is presented in section 5.3.4, *Threatened and Endangered Species*, and our recommendations in section 6.0, *Recommended Alternative*. Based on available information, we conclude that issuing an exemption for the proposed project would have no effect on the rush darter, dark pigtoe, ovate clubshell, flattened musk turtle, Black Warrior waterdog, northern long-eared bat, Indiana bat, Alabama streak-sorus fern, white fringeless orchid, or Mohr's Barbara's buttons.

4.4 Section 106 of the National Historic Preservation Act

Section 106 of the National Historic Preservation Act (NHPA) requires that federal agencies "take into account" how the agency's undertakings could affect historic properties. Historic properties are districts, sites, buildings, structures, traditional cultural properties, and objects significant in American history, architecture, engineering, and culture that are eligible for inclusion in the National Register of Historic Places (National Register).

By letter filed June 5, 2017, the Alabama SHPO determined that the project will have no effect on any cultural resources listed on or eligible for the National Register.

5.0 ENVIRONMENTAL ANALYSIS

In this section, the general environmental setting in the project area and cumulative effects are described. An analysis of the environmental effects of the proposed action and action alternatives is also included. Sections are organized by resource area (aquatic resources, cultural resources, etc.). Under each resource area, historic and current conditions are first described. The existing condition is the baseline against which the environmental effects of the proposed action and alternatives are compared, including an assessment of the effects of proposed mitigation, protection, and enhancement measures. Staff conclusions and recommended measures are discussed in section 6.0 of the EA.

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Unless noted otherwise, the sources of our information are Episcopal Diocese's exemption application filed on July 12, 2016, and additional information filed on November 18, 2016, January 13, 2017, June 5, 2017, and August 31, 2017.

5.1 General Description of the Area

The proposed project would be located in north central Alabama on Clear Creek near the town of Nauvoo, in Winston County, Alabama at the existing Camp McDowell Dam. Located about 1 mile upstream of the project boundary for Alabama Power Company's Warrior River Hydroelectric Project No. 2165, Camp McDowell is about 10 miles upstream of the Lewis-Smith Development.

Located in the Southwestern Appalachian Mountains, Clear Creek is one of thirteen sub-watersheds draining portions of Winston, Walker, and Cullman Counties to the Sipsey Fork, which then flows to the Black Warrior River. The Sipsey Fork is about 70 miles long with about 60 miles flowing through the Bankhead National Forest, including its headwaters and tributaries (Alabama DEM, n.d.). Clear Creek is about 12.5 miles long (Alabama DEM, 2016), and is a generally a high gradient, riffle-run stream (Energy Protection Agency, n.d.).

The topography at Clear Creek includes rolling hills, flat plateaus, and meandering flood plains. The climate is moist and temperate with long, warm, and humid summers and relatively short, cool winters. Mean annual precipitation within the drainage area is about 54 inches, occurring primarily as rainfall. Average monthly temperatures within the basin vary from 42° to 46° Fahrenheit (°F) during the winter to 77° to 80° F during the summer. Winter temperatures can dip below 32° F for short periods. Summer temperatures can often reach into the 90's with relatively high humidity.

5.2 Scope of Cumulative Effects Analysis

According to the Council on Environmental Quality's regulations for implementing NEPA (40 C.F.R., section 1508.7), an action may cause cumulative impacts on the environment if its impacts overlap in time and/or space with the impacts of other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes such actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time, including hydropower and other land and water development activities.

Based on our review of Episcopal Diocese's application for an exemption from licensing, agency and public comments, and our independent analysis, we have identified no resources that could be cumulatively affected by constructing and operating the Camp McDowell Project. Construction would be limited to a small area and would not likely

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disturb soils, and run-of-river operation would result in no change in the volume or periodicity of flows downstream of the project.

5.3 Proposed Action and Alternatives

Only resources that would be affected, or about which comments have been received, are addressed in this EA and discussed in this section. We have not identified any land use, aesthetics, or socioeconomic issues associated with the proposed action. Therefore, we do not assess effects on these resources in this EA.

5.3.1 Geology and Soils

5.3.1.1 Environmental Effects

Episcopal Diocese proposes to construct a new intake gate on the dam protected by a 6-inch spaced trash rack, sluiceway, a turbine bay and ASG turbine, power poles and a transmission line, and sensors for an automatic gate controller. Episcopal Diocese would construct the new intake and place the pre-built ASG unit at the base of the dam during low flow conditions. If low flow conditions are not available a temporary coffer dam may be needed to construct the new intake. In this case, to minimize erosion and re-suspension of river sediments during project construction, Episcopal Diocese proposes to use BMPs that include: (1) using water and/or crushed stone to control dust on temporary roads leading to the construction site; (2) placing erosion control barriers around upland work areas prior to the start of ground disturbing activities; (3) grading and riprapping slopes in a manner that protects and stabilizes slopes; and (4) installing a silt curtain downstream of the dam. The areas within the cofferdam would be dewatered by pumping water through on-site filter bags.

In addition to the above, Episcopal Diocese proposes to construct a 650-foot-long, 460-volt, above-ground transmission line, connecting the powerhouse electrical panel to National Grid's distribution system via a transformer bank located on a utility pole about 75 feet North of Camp McDowell's Eppes Dining Hall.

Our Analysis

The project construction area would be limited to the crest of the dam and the base of the dam, and would not disturb areas outside the riverbed. Installing and dewatering temporary cofferdams in the reservoir and immediately downstream of the dam including the silt curtain, would minimize sedimentation, disturbance of riverbed material, and re-suspension of sediments in Clear Creek during project construction.

Constructing the proposed 650-foot-long transmission line would disturb a small amount of vegetation on project lands because all 650 feet of the line would be installed above ground along an existing access road leading to the powerhouse. Installation of the project transmission line would result in little or no additional erosion along the length of the proposed transmission line route because the line would be placed on established pathways, and along an established roadway.

Developing a soil erosion and sediment control plan that includes Episcopal Diocese's proposed BMPs would limit erosion and re-suspension of sediments in the project area and river during project construction.

5.3.2 Aquatic Resources

5.3.2.1 Affected Environment

Water Quantity and Quality

Hydrologic data recorded at a USGS gage (No. 02450825), located about 11 miles upstream of the proposed project on Clear Creek, show that Clear Creek has higher flows between November and May and lower flows between June and October. The average annual flow ranges from 100 cfs to 285 cfs at Clear Creek Dam, with the maximum and minimum recorded flows of 4,000 cfs and 30 cfs, respectively. The 50 percent annual exceedance flow is about 100 cfs, with a flow of 27 cfs exceeded 90 percent of the time and a flow of 406 cfs exceeded 10 percent of the time. Flows in Clear Creek are estimated to meet or exceed the maximum operating capacity of the project (175 cfs) about 30 percent of the time and meet or exceed the minimum operating capacity of the project (115 cfs) about 45 percent of the time. The impoundment created by the project dam has a surface area of about 10 acres at an elevation of 513.5 feet, and a maximum depth of about 20.0 feet.

Alabama Department of Environmental Management (Alabama DEM) water monitoring found that Clear Creek meets the criteria³ for Category 1 for public water supply and 2B for Fish and Wildlife (Alabama DEM, 2016).⁴ Additionally, in 2016, Alabama DEM categorized the downstream Smith Lake as Category 5 for poor water

³ The terms fully attained and impaired have been replaced with meets criteria or exceeds criteria respectively.

⁴ Category 1 is a use that is fully attained or describes unimpaired waters, and Category 2B is a use that does not have adequate data to assess. However, a separate use is fully attained and impairment of this use is deemed unlikely.

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quality because of high levels of mercury. However, the downstream Smith Lake does not affect the water quality in the project area.

Fishery Resources

In the project area, Clear Creek is a warm-water fishery and provides habitat for bluegill, longear sunfish, green sunfish, spotted bass and white bass (Alabama Department of Conservation and Natural Resources, n.d.). There currently are no anadromous (e.g., Alabama shad or non-landlocked populations of striped bass) or catadromous fish species (e.g., American eel) reported in Clear Creek.

5.3.2.2 Environmental Effects

Water Quantity and Quality

Episcopal Diocese proposes to operate the project in a run-of-river mode, with outflow approximating inflow.

Our Analysis

Flows at the project throughout the year exceed the 115 cfs minimum hydraulic capacity of the proposed generating unit about 45 percent of the time, and reach the maximum capacity of 175 cfs 30 percent of the time. Adequate flows would be available for generation about 7 months out of the year (October through April), when flows exceed 115 cfs about 80 percent of the time. July, August, and September are typically critical months for dissolved oxygen. During July, August, and September insufficient flow would be available for generation about 90-95 percent of the time.

Operating the project in a run-of-river mode, whereby all outflows from the project impoundment, including generation flow, approximate all inflow to the project, with minimal fluctuations of impoundment surface waters, would reduce the potential for fish stranding and also minimize water level and flow disruption to any spawning and rearing habitat that might exist in the project's reservoir or tailrace (Sammons and Bettoli, 2000). Maintaining relatively stable reservoir levels would also benefit fish and other aquatic organisms that rely on littoral habitat for feeding, spawning, and cover. By operating the project in a run-of-river mode, habitat in the project reservoir and tailwater would essentially be unchanged compared to current conditions.

The project has the potential to reduce flows over the spillway which could affect DO. However, the project will be inoperable, due to insufficient flows, during the critical summer months of July, August, and September, when depressed DO levels would be most likely to occur. During these months, flows would spill over the dam as is currently

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the case, supplying the same DO levels as currently exists without the proposed project generation. Therefore, we conclude that project operation will result in no changes to current downstream DO levels during the critical months.

Aquatic Resources

Episcopal Diocese proposes to operate the project in a run-of-river mode, and operate the project when sufficient flows are available to pass through the turbine without lowering the elevation of the impoundment. No recommendations for aquatic resources measures were provided in response to the Commission's notice of ready for environmental analysis.

Our Analysis

During project operation, much of the Clear Creek flow (115 to 175 cfs of the total streamflow) would pass through the project's ASG unit. However, for a majority of the time, flows would also continue to pass over the spillway and provide downstream passage for fish. For fish attracted to the project intake, the ASG unit would serve as a means of downstream passage. Studies have shown that the potential effect of an ASG unit on fisheries tends to be minor. Several studies (Kibel and Coe, 2011; Spah, 2001; Lucas and Bracken, 2010) suggest that the design and operation of the proposed turbine results in very high fish passage survival rates (e.g., 100% of eels, sunfish, sea lamprey, salmon, and brown trout observed in these studies survived passage through the Archimedes screw turbine). These studies also reported minor effects on about 1.3 percent of juvenile sea lampreys, 1.4 percent of salmonids, and about 0.64 percent of eels passing through Archimedes screw turbines. While eels, salmon, trout, and lamprey are not present at the project, these studies indicate that the ASG unit's potential effect on fisheries is likely to be minor.

5.3.3 Terrestrial Resources

5.3.3.1 Affected Environment

The forests in the project area are dominated by tulip-poplar, hemlock, bigleaf magnolia, oaks, and hickories. Plateau forests have a canopy dominated by oak and hickory species such as white, black, scarlet oaks, rock chestnut, southern red oak, and to a lesser extent, post oaks. Loblolly, shortleaf, and scrub pines are scattered through the forests (Martin and Boyce, 1993). The typical southeastern sub-canopy composition includes sourwood, black gum, flowering dogwood, and black cherry with shrubs such as low-bush blueberry, deerberry, and blackberry. Ravine slopes typically have a thick understory of mountain laurel. Herbaceous species are numerous species typical of the southeast including cross-vine, cow-itch vine, poison-ivy, and Japanese honeysuckle.

5.3.3.2 Environmental Effects

Constructing the intake structure, placement of the ASG unit, and transmission line may require some ground disturbing activity for the staging of materials, and access to the site. The area where the ASG unit would be installed is part of a summer camp/retreat center which maintains the natural setting of the surrounding forest while being developed for human activity. Access routes are available and areas are clear that could be used to facilitate placement of the turbine housing. It is unlikely that trees would need to be cleared for the construction.

Our Analysis

Terrestrial habitats in the camp/retreat center are currently modified to support human activities. Therefore, there would not likely be a need to clear undisturbed, natural wildlife habitats to install the ASG unit.

5.3.4 Threatened and Endangered Species

5.3.4.1 Affected Environment

Five federally listed endangered species (i.e., Indiana Bat, rush darter, Black Warrior waterdog, dark pigtoe, and ovate clubshell) and five federally listed threatened species (i.e., Northern Long-eared bat, flattened musk turtle, Alabama streak-sorus fern, white fringeless orchid, and Mohr's Barbara's buttons) have the potential to occur within the project boundary, or otherwise in the vicinity of the proposed project.

Northern Long-eared Bat

The FWS listed the Northern Long-eared bat as threatened on April 2, 2015.⁵ The species is found in the central and eastern U.S., as well as the southern and central provinces of Canada. The Northern Long-eared bat, whose habitat includes large tracts of mature, upland forests, typically feeds on moths, flies, and other insects. These bats are flexible in selecting roost sites, choosing roost trees that provide cavities and crevices. Winter hibernation typically occurs in caves and the areas around them can be used for fall-swarms and spring-staging. No critical habitat has been designated for this species.

In January 2016,⁶ FWS finalized the 4(d) rule for this species which focuses on preventing effects on bats in hibernacula associated with the spread of white-nose

⁵ See 80 FR 17974-18033.

⁶ See 81 FR 1900-1922.

syndrome,^{7,8} and effects of tree removal on roosting bats or maternity colonies (FWS, 2016). As part of the 4(d) rule, FWS clarifies that take incidental to certain activities conducted in accordance with the following habitat conservation measures, as applicable, would not be prohibited, provided that the activity: (1) occurs more than 0.25 mile from a known, occupied hibernacula; (2) avoids cutting or destroying known, occupied maternity roost trees during the pup season (June 1 - July 31);⁹ and (3) avoids clearcuts within 0.25 mile of known, occupied maternity roost trees during the pup season (June 1 - July 31).

Indiana Bat

The FWS listed the Indiana bat as endangered on March 11, 1967.¹⁰ The Indiana bat occurs in the Midwest and eastern United States, from the western edge of the Ozark region in Oklahoma, to southern Wisconsin, east to Vermont, and as far south as northern Florida. The species is a temperate, insectivorous,¹¹ migratory bat that hibernates colonially in caves and mines in the winter from October through April. Spring migration to new habitat occurs from mid-March to mid-May. During spring months, females migrate, forming maternity colonies to raise their young in wooded areas.¹² Males and non-reproductive females remain near winter hibernation sites during the spring or migrate to summer habitat. Between mid-August and mid-October, males and females return to their winter hibernation habitat (FWS, 2007). Critical habitat for the Indiana bat was designated on September 24, 1976,¹³ and consists of 11 caves and two mines in Illinois, Indiana, Kentucky, Missouri, Tennessee, and West Virginia.

⁷ Hibernacula are places where bats hibernate over the winter, such as in a cave.

⁸ White-nose syndrome is a fungal infection that agitates hibernating bats, causing them to rouse prematurely and burn fat supplies. Mortality results from starvation or, in some cases, exposure.

⁹ Pup season refers to period when bats birth their young.

¹⁰ See 32 FR 4001.

¹¹ Indiana bats typically forage in semi-open to closed (open understory) forested habitats, forest edges, and riparian areas (FWS, 2007).

¹² Indiana bat females occupy roost sites under the exfoliating bark of dead trees that retain large, thick slabs of peeling bark. Roost trees are typically within canopy gaps in a forest, in a fence line, or along a wooded edge.

¹³ See 41 FR 41914; as corrected and augmented on September 22, 1977 (see 42 FR 47840-47845).

Ongoing threats to this species include (a) human disturbance during hibernation, (b) loss of mature trees for roosting due to deforestation, and (c) mortality from white-nose syndrome, a fungal infection currently affecting many bat species.

Black Warrior Waterdog

The Black Warrior waterdog was listed as endangered on January 3, 2018.¹⁴ The species is a large, gilled, aquatic salamander (up to 9.8 inches in length; Bart *et al.*, 1997) that is endemic to the Black Warrior River Basin. It has a patchy-distribution in the drainages of the North River, Locust Fork, Mulberry Fork, and Sipsey Fork, and their tributaries (Bailey and Guyer, 2004). Of the 120 sites sampled since 1990, Black Warrior waterdogs have been reported from only 10 sites in Blount, Tuscaloosa, Winston, and Walker Counties, Alabama (Bailey, 1995; Guyer, 1997, 1998).

Critical habitat for the Black Warrior waterdog was designated in the Sipsey Fork on January 3, 2018.¹⁵ Its preferred habitat is believed to include wide and/or shallow rivers and streams with substrates of clay and little or no silt, semi-permanent leaf packs, and submerged ledges and rocks (Bailey and Guyer, 2004). Ongoing threats to this species include sedimentation, which negatively affects food sources, such as invertebrates, and causes physical alteration to the rocky habitats where they forage, take cover, and breed. Additional threats include toxins in the sediment (Bailey, 2000, pp. 20) and excess nutrients that promote dense vegetation growth that hinders movement.

Flattened Musk Turtle

The flattened musk turtle was listed as threatened on June 11, 1987.¹⁶ The turtle, which is endemic to the Black Warrior River Basin, is an aquatic species typically inhabiting large, free-flowing streams with rocky substrates; vegetated shallows, about 2 feet deep; with deeper pools 3.6 to 5 feet deep with an abundance of crevices, submerged boulders, and rock shelves. The turtle may also inhabit stream headwaters and the rocky shorelines of impoundments. Flattened musk turtles feed primarily on invertebrates, such as snails and mussels (FWS, 1990).

No critical habitat has been designated for the flattened musk turtle. Although current data are limited, the FWS Recovery Plan (1990) suggests that historically the turtle occurred throughout the Black Warrior River basin above the fall line, and about 10 to 20 percent of the basin presently supports viable populations of flattened musk turtle.

¹⁴ See 83 FR 257-284.

¹⁵ *Id.*

¹⁶ See 52 FR 22418-22430.

Surveys completed during 2002 and 2003 found populations of flattened musk turtles in the Sipsey Fork, Brushy Creek, Ryan Creek, and Rocky Creek arms of Smith Lake (Bailey and Bailey, 2003 and Rogers and Marion, 2004a, b). The main threats to the flattened musk turtle are habitat modification and fragmentation, sedimentation,¹⁷ over-collecting for the commercial trade, and water quality degradation.

Rush Darter

The rush darter was listed as endangered on August 9, 2011.¹⁸ It is a rare species of small fish in the perch family; and it is endemic to Alabama, where it occurs in three river systems.¹⁹ Rush darters live among the reeds along the banks of shallow, cool, and clear streams with little to no current. They can be found over a variety of substrates, including sand, silt, and gravel. Adults scatter their eggs in aquatic vegetation, and the fry use wetland pools as nursery habitat. Critical habitat for the species was designated on October 16, 2012,²⁰ and consists of habitat in the three upstream tributaries to Clear Creek.

The rush darter has a very limited range, and its apparent small population size make it very vulnerable to extinction. The primary threats to the species include runoff from non-point sources and habitat destruction through development.

Freshwater Mussels

Historically, 175 species of mussels had been reported from Alabama. However, Alabama's mussels have experienced drastic declines in abundance and diversity, extirpation from large portions of their historic ranges, and extinction. Remaining mussel populations are fragmented and occupy small portions of their historic range in stream reaches where habitats have remained relatively unaffected.

¹⁷ Siltation of preferred habitats has affected populations of the flattened musk turtle (Dodd *et al.*, 1988). Potential negative effects of siltation include: (a) extirpation or reduced populations of mollusks and other invertebrate prey; (b) physical alteration of rocky stream habitats; and (c) accumulation of toxic sediments (Dodd *et al.*, 1988 and FWS, 1990).

¹⁸ See 76 FR 48722-48741.

¹⁹ The species is found in 3 small tributaries of Clear Creek, which are upstream of the proposed Camp McDowell Project.

²⁰ See 77 FR 63603-63668.

The dark pigtoe and ovate clubshell were listed as endangered as part of a large, multispecies listing by the FWS on March 17, 1993.²¹ Critical habitat for these two mussels was later designated by the FWS on July 1, 2004,²² and includes the Sipsey Fork above Smith Lake. Clear Creek is not designated as critical habitat, nor has either species been found in the upstream portion of Clear Creek (Geological Survey of Alabama, 2013).

DARK PIGTOE

The dark pigtoe is a small to medium-sized mussel, occasionally reaching 2.4 inches in length. This mussel is found in sand/gravel/cobble shoals and rapids in small rivers and large streams. Females have been found gravid with mature glochidia from mid to late June in water temperatures of 77° F. When gravid, they release glochidia in peach to pink-colored conglutinates²³ that may mimic food items of darters and minnows (Haag and Warren, 1997).²⁴ Habitat modification (e.g., impoundment water), sedimentation, eutrophication, and other forms of water quality degradation are the primary causes of decline of the dark pigtoe. This species cannot tolerate impounded habitat.

OVATE CLUBSHELL

The ovate clubshell is a small freshwater mussel that attains a maximum adult size of 2.0 inches in length. This species typically occupies sand/gravel shoals and runs of small rivers and large streams that are highly oxygenated, with moderate current and a depth of less than three feet (FWS, 2000; Parmalee and Bogan, 1998). Gravid females have been observed in June and July. Glochidia are released in well-formed white conglutinates. Host fishes are unknown (FWS, 2003). The main threats to the ovate clubshell are habitat modification (e.g., channelization), sedimentation and erosion, eutrophication, and other forms of water quality degradation. This species, like the dark pigtoe, cannot tolerate impoundments or stream channelization.

²¹ See 58 FR 14330-14340.

²² See 69 FR 40084-40171.

²³ Masses of glochidia in a proteinaceous jelly.

²⁴ Haag and Warren (1997) identified the largescale stoneroller, Alabama shiner, blacktail shiner, creek chub, and blackspotted topminnow as suitable host fish for the dark pigtoe.

Threatened Plants

ALABAMA STREAK-SORUS FERN

The Alabama streak-sorus fern was listed as threatened on July 8, 1992.²⁵ The plant is a small evergreen fern that can occur on moist, shady sites such as ceilings of rockhouses, ledges beneath sandstone overhangs, and on exposed cliff faces (FWS 1996). Sites are usually directly above, or a short distance from, a river and shaded to partially sunny. They grow in substrate where they are kept moist by water vapor from the river and up-slope runoff over the sandstone (FWS 1996). No critical habitat has been designated for this species, and the species is only known from the West Sipsey Fork drainage.²⁶

Threats to the fern include road and bridge construction, inundation from stream impoundments, logging, and incidental impacts or vandalism by recreational users of rock houses where the fern grows. The fern is particularly vulnerable to natural or human-induced catastrophic disturbance, such as flooding and drought, because of its extremely restricted range and small numbers.

WHITE FRINGELESS ORCHID

The white fringeless orchid was listed as threatened on September 13, 2016.²⁷ The species is a perennial herb that grows up to 2 feet tall. It has a single, light-green stem rising from a tuber. The plant bears white flowers in a loose cluster at the end of the stem, and it flowers from late July through September with small fruit maturing in October. The white fringeless orchid grows in wet, boggy areas at the heads of streams and on sloping areas kept moist by groundwater seeping to the surface (FWS, 2016a). No critical habitat has been designated for this species.

Populations of white fringeless orchid have been lost to habitat-altering activities including road construction, residential and commercial construction, ATV traffic, sediment erosion and deposition, and inundation resulting from construction of impoundments. Threats to remaining populations of the species and its habitat include the above factors, as well as collection/poaching, utility and road right-of-way maintenance, timber harvesting, invasive species encroachment, vegetation succession in the absence of disturbance, and prolonged drought. These factors, combined with the

²⁵ See 57 FR 30164-30168.

²⁶ It grows only on exposed rock surfaces and in crevices of Pottsville sandstone along a 4.25-mile reach of the West Sipsey Fork.

²⁷ See 81 FR 62826-62833.

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small sizes and low reproductive rates of many populations, leave the species vulnerable to localized extinctions throughout its geographic range.

MOHR'S BARBARA'S BUTTONS

The Mohr's Barbara's buttons was listed as threatened on September 7, 1988.²⁸ The species is a perennial herb of the aster family. It is native to the southern Appalachians in north central Alabama and northwestern Georgia. Its habitat includes seasonally wet, sandy-clay soils in prairie-like meadows, along margins of shale-bedded streams, public utility/highway rights-of-way, and in habitats with widely spaced trees (barrens or glades). Threats to the species include habitat loss from fire suppression, vegetation management practices along roads, herbicide applications, road construction, and conversion of land to agricultural or residential development (FWS, 2016b).

5.3.4.2 Environmental Effects

Northern Long-eared Bat

Episcopal Diocese proposes to ensure that possible temporary negative impacts to Northern Long-eared bat be mitigated by removing trees in accordance with the Northern Long-Eared Bat Interim Conference and Planning Guidance, January 6, 2016. As indicated in the guidance, tree removal activities should be conducted between October 15th and March 31st. No comments or recommendations were received regarding this species.

Our Analysis

There are no known Northern Long-eared bat hibernacula or maternity roost trees near the project, and no Northern Long-eared bats have been documented in the project area. Although bats could use habitat within the project area during summer months for foraging or roosting, project construction and operation would not have any expected effect on their existing habitat or food availability, because no tree removal or disturbance to potential Northern Long-eared bat habitat is proposed. Therefore, issuing an exemption from licensing for the Camp McDowell Project would have no effect on the Northern Long-eared bat.

Indiana Bat

Episcopal Diocese proposes to ensure that possible temporary negative impacts to the Indiana bat be mitigated by removing qualifying vegetation in accordance with the

²⁸ See 53 FR 34698-34701.

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Range-Wide Indiana Bat Summer Survey Guidelines, January 2014. As indicated in the guidelines, tree removal activities should be conducted between October 15th and March 31st. No comments or recommendations were received regarding this species.

Our Analysis

There are no known Indiana bat hibernacula or maternity roost trees near the project and no Indiana bats have been documented in the project area. Although bats could use habitat within the project area during summer months for foraging or roosting, project construction and operation would not have any expected effect on their existing habitat or food availability, because no tree removal or disturbance to potential bat habitat is proposed. Therefore, issuing an exemption from licensing for the Camp McDowell Project would have no effect on the Indiana bat.

Black Warrior Waterdog

Episcopal Diocese proposes no specific measures to address potential effects on the Black Warrior waterdog. No comments or recommendations were received regarding this species.

Our Analysis

The Black Warrior waterdog is known to only occur in tributaries upstream of Smith Lake (Bailey, 2000), as anglers fishing in the mouths of tributaries of Smith Lake captured three waterdogs. Black Warrior waterdogs have not been documented in Clear Creek (Bailey, 2000).

Notwithstanding the apparent absence of the waterdog from Clear Creek, construction of the project would not substantially alter the existing environment (i.e., construction would be limited to placing the generation unit at the base of the dam and would minimize disruption of soils or grounds). In addition, the project would be operated in a run-of-river mode, which would result in no change in the amount, schedule, or duration of flow released to the downstream river. Therefore, issuing an exemption from licensing for the proposed Camp McDowell Project would have no effect on the Black Warrior waterdog or its habitat.

Flattened Musk Turtle

Episcopal Diocese proposes no specific measures to address potential effects on the flattened musk turtle. No comments or recommendations were received regarding this species.

Our Analysis

Surveys conducted in 2002 and 2003 found the flattened musk turtle living in some tributaries of Smith Lake (Sipsey Fork and Brushy Creek), and upstream in the Bankhead National Forest (Rogers and Marion, 2004a,b). The Smith Lake population was found to be using numerous areas in Brushy Creek and Sipsey Fork with suitable habitat (i.e., submerged rocky shelves and crevices; Rogers and Marion, 2004b). Populations have also been found in the Ryan Creek and Rocky Creek branches of the lake (Bailey and Bailey, 2003). No population was found in Clear Creek.

Marion and Bailey (2004) found that sites with low sediment accumulation, good water quality, and adequate refugia²⁹ have viable, reproducing populations of at least low to moderate densities of flattened musk turtles. These populations are found outside the proposed project area, and should not be affected by project construction or operation.

In the event that flattened musk turtles are found in the project area in the future, the proposed project is not expected to affect the species. Archimedes screw turbines do not divert the stream flow away from the river, and are low speed rotational turbines that create no significant shear forces or pressure changes. The turbine's design would allow small to mid-size turtles (less than 6 inches) that enter the turbine to exit the bottom in the same condition as when they entered.

Based on our review of the data and other information in the record, we conclude that issuing an exemption from licensing for the proposed Camp McDowell Project would have no effect on the flattened musk turtle.

Rush Darter

Episcopal Diocese proposes no specific measures to address potential effects on the rush darter. No comments or recommendations were received regarding this species.

Our Analysis

This small species of darter is only known to occur in a few small spring-fed streams, three of which are upstream of the proposed project. These three streams have been designated as critical habitat for this darter.

Suitable habitat for the rush darter consists of small, shallow, geomorphically stable, spring-fed streams, with a lot of aquatic vegetation. Clear Creek, in the proposed

²⁹ Areas where a population of organisms can survive through a period of unfavorable conditions.

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project area, is not small or shallow. Moreover, the reaches of Clear Creek that run between each of the designated critical habitat streams is not designated as critical habitat. Thus, the darter's preferred habitat is not likely to exist in the project area.

Based on our review of the data and other information in the record, we conclude that the construction and operation of the proposed project would occur well downstream of the rush darters and their critical habitat, and would not affect them. Therefore, issuing an exemption from licensing for the proposed Camp McDowell Project would have no effect on the rush darter, or its critical habitat.

Freshwater Mussels

Episcopal Diocese proposes no specific measures to address potential effects on the dark pigtoe or ovate clubshell. No comments or recommendations were received regarding the mussels.

Our Analysis

Many species of freshwater mussels are imperiled in Alabama's rivers, and mussels have received a great deal of attention by the state. FWS published the multi-species Mobile River Basin Aquatic Ecosystem Recovery Plan in November 2000, which includes the dark pigtoe and ovate clubshell. The recovery plan was designed to prevent the further decline of these species by locating, protecting, and restoring streams with the essential habitat components that would support the remaining populations (FWS, 2000). The recovery plan notes that neither species were found during the survey of Clear Creek (Geological Survey of Alabama, 2013).³⁰

The dark pigtoe and ovate clubshell are not known to inhabit the project area. Also, construction, operation, and maintenance of the proposed project would not substantially alter the existing environment (e.g., construction would be limited to placing the generation unit at the base of the dam, there would be no disruption of soils or grounds, and flows through the project area would remain as run-of-river). Therefore, issuing an exemption from licensing for the proposed Camp McDowell Project would have no effect on the dark pigtoe and ovate clubshell, or their habitat.

³⁰ About 1 mile downstream of the proposed project site Clear Creek enters the pool of Smith Lake which does not provide suitable habitat for either species.

Threatened Plants

Episcopal Diocese proposes no specific measures to address potential effects on the Alabama streak-sorus fern, white fringeless orchid, and Mohr's Barbara's buttons. No comments or recommendations were received regarding these species.

Our Analysis

Although the Alabama streak-sorus fern occurs within the county where the proposed project is located, all extant populations are located solely in the West Fork Sipsey drainage (FWS, 1996). The habitat that the fern prefers does not exist in the project area or in the Clear Creek drainage.

The white fringeless orchid preferred habitat consists of wet, boggy areas located at the heads of a stream or areas where groundwater seeps on slopes. Although the orchid occurs within the county where the proposed project is located, these habitat conditions do not occur in the project vicinity.

The Mohr's Barbara's buttons require the most specialized habitat type of the three plants, which does not occur in the proposed project area.

Given the lack of suitable habitat in the project area, we conclude that issuing an exemption for the proposed Camp McDowell Project would have no effect on the Alabama streak-sorus fern, the white fringeless orchid, and the Mohr's Barbara's buttons.

5.3.5 Recreation Resources

5.3.5.1 Affected Environment

Camp McDowell comprises 1,500 acres devoted to outdoor recreation, education, and environmental activities. Recreation activities at the camp include canoeing, swimming, and fishing. The property, which is owned and managed by Episcopal Diocese, is for the private use of enrolled campers and invited guests.

5.3.5.2 Environmental Effects

Episcopal Diocese proposes to install warning signs, visible from the water and the shoreline, to protect boaters and hikers from potential hazards at the project.

Our Analysis

Construction, operation, and maintenance of the proposed project would be unlikely to affect existing recreation resources at the project, and is designed to contribute

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to the existing environmental education features at Camp McDowell. Public safety measures, including Episcopal Diocese's proposed warning signs, would protect campers and guests from potential hazards at the project. A public safety plan, required in any exemption order issued by the Commission, would address such issues.

5.3.6 Cultural Resources

5.3.6.1 Affected Environment

Area of Potential Effect

The Advisory Council on Historic Preservation defines an area of potential effect (APE) as the geographic area or areas in which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist. The APE for the Camp McDowell Project includes: (a) lands that would be enclosed by the project boundary; and (b) lands or properties outside the project boundary in which project operations or project-related actions may cause changes in the character or use of historic properties, if any exist.

Cultural Resources Overview

Archaeological evidence suggests that the earliest human habitation of the Black Warrior River Basin occurred during the Paleoindian Period (12,000 B.P. to 10,000 B.P.). Archeological sites dating to this period are difficult to identify because of their age and the mobility of the small family units inhabiting the area, which left minimal cultural material behind (Wood, 1988).

More concentrated settlements developed along the Black Warrior River and its tributaries during the Mississippian Period (800 B.P. to 350 B.P.). The river valley provided fertile soils for cultivated crops, such as maize. The most well-known site from the Mississippian period is the 185-acre Moundville site, located along the Black Warrior River in Tuscaloosa and Hale Counties, Alabama. This site, listed as a National Historic Landmark in 1986, contains earthen mounds, burials, and numerous artifacts (Hammerstedt and Myer, 2001). Present-day tribes with historic interest in the Black Warrior River Basin include the Alabama-Coushatta Tribe of Texas, Alabama-Quassarte Tribal Town, Cherokee Nation, Chickasaw Nation, Coushatta Tribe of Louisiana, Eastern Band of Cherokee Indians, Kialegee Tribal Town, Muscogee (Creek) Nation, Poarch Band of Creek Indians, Thlopthlocco Tribal Town, and United Keetoowah Band of Cherokee Indians.

European expeditions into the area began in 1540, when Spanish explorers, led by Hernando de Soto, traveled the region; however, no colonies were established (Wood,

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1988). Permanent settlement of the region by Europeans and, later, Americans, began in the 18th century. Like much of Alabama, farming was the prevailing occupation of Winston County until the early twentieth century. Although Winston County did not have large plantations, small subsistence farming occurred throughout the county. Row crops and cotton farming were eventually replaced by cattle farms and chicken production. By the late nineteenth and early twentieth centuries, small factories tied to local timbering were established (Siebenthaler, 2017).

Historic Properties

There are no known historic properties or traditional cultural properties within the project's APE.

5.3.6.2 Environmental Effects

Episcopal Diocese proposes no specific measures to address cultural resources. By letter dated May 23, 2017 and filed by the applicant on June 6, 2017, the Alabama SHPO stated that the project would have no effect on any cultural resources listed on or eligible for the National Register, but that if artifacts or archaeological features were discovered during project activities, Episcopal Diocese should immediately stop work and consult with the Alabama SHPO.

In comments filed October 13, 2016 and November 10, 2016, the United Keetoowah Band of Cherokee Indians in Oklahoma and the Alabama-Coushatta Tribe of Texas, respectively, requested consultation regarding the exemption proceeding. Further, the United Keetoowah Band of Cherokee Indians tribe requested that cultural resource studies be conducted prior to project construction.

Our Analysis

We have reviewed the information provided by Episcopal Diocese and conclude that while the construction and operation of the proposed project would alter the character of the existing dam, it would have no adverse effect on known historic, archaeological, or traditional cultural properties.

During the term of any exemption, Episcopal Diocese would occasionally need to implement project modifications that would not require Commission approval but could affect cultural resources at the project. These modifications could include activities such as painting or repairing facilities on the dam or general landscaping. Including a condition in any exemption that would require Episcopal Diocese to consult with the Alabama SHPO, the Alabama-Coushatta Tribe of Texas, and the United Keetoowah Band of Cherokee Indians prior to conducting any maintenance activities, land-clearing

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or land-disturbing activities, or changes to project operation or facilities would ensure that cultural resources are not adversely affected.

It is possible that unknown cultural resources could be discovered during the course of constructing or operating the project. Including a condition in any exemption that would require Episcopal Diocese to consult with the Alabama SHPO, the Alabama-Coushatta Tribe of Texas, and the United Keetoowah Band of Cherokee Indians, if previously unidentified cultural resources are encountered would ensure the proper treatment of these resources. In the event of any such discovery, Episcopal Diocese would discontinue all exploratory or construction-related activities until the proper treatment of any potential cultural resources is established.

5.4 No Action Alternative

Under the no-action alternative, the project would not be issued an exemption, the project would not generate electricity, and there would be no effects on environmental resources.

6.0 RECOMMENDED ALTERNATIVE

Based on our independent review and evaluation of the environmental effects of the proposed action, and a no-action alternative, we recommend all of Episcopal Diocese's proposed measures, and some additional staff-recommended measures as the preferred alternative. Additional measures recommended by staff include: (1) developing a soil erosion and sediment control plan; (2) consulting with the Alabama SHPO and potentially affected Indian tribes prior to implementing any project modifications, including maintenance activities, land-clearing or land-disturbing activities, or changes to project operation or facilities, that do not require Commission approval but could affect cultural resources; and (3) consulting with the Alabama SHPO and potentially affected Indian tribes if previously unidentified cultural resources are discovered during the course of constructing, maintaining, or developing project works or other facilities.

We recommend this alternative because: (1) issuing an exemption from licensing would allow Episcopal Diocese to construct and operate the project as a beneficial and dependable source of electric energy; (2) the 140 kW of electric capacity would come from a renewable resource that would not contribute to atmospheric pollution; and (3) the recommended environmental measures would protect water quality, aquatic resources, terrestrial resources, and any previously unidentified cultural resources.

We recommend the following environmental measures for any exemption that would be issued for the proposed project.

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- Operate the project in a run-of-river mode, where outflow from the project approximates inflow, and water levels in Clear Creek will not be drawn down below the level of the spillway for electric generation.
- Install a water-level sensor to monitor the impoundment, and an automatic gate controller to maintain run-of-river operation.
- Develop a plan to minimize soil erosion and in-river siltation during project construction, which includes BMPs.
- Tree removal activities, if necessary, would be done between October 15th and March 31st.
- Develop a public safety plan for the project to include installing warning signs, visible from the water and the shoreline, to protect boaters and hikers from potential hazards of the project.

Run-of-River Operation and Operation Monitoring Plan

The project would operate in run-of-river mode, where outflow from the project approximates inflow, and water levels in Clear Creek would not be drawn down below the level of the spillway for electric generation. Under this operation water levels in Clear Creek would not be lowered below the crest of the dam by project operation, and the timing and periodicity of flows in the 10 miles of Clear Creek downstream of the project would not be affected by project operation. Since run-of-river operation would not result in changes in downstream flows, and continue to provide environmental benefits to aquatic resources, we recommend this measure be implemented.

Monitoring project impoundment levels and installation of an automated gate system would enable the Commission to verify how flows are being used at the project. To that end we recommend developing an operation monitoring plan which includes, at minimum, a provision for an automated pond level recorder and automated gate controller.

Soil Erosion and Sediment Control Plan

Constructing a new intake with a trashrack and sluice gate, a powerhouse, turbine bay and ASG unit, and a transmission line at the proposed project site could cause short-term bank erosion, river sedimentation, and disturbance of riverbed material and re-suspension of sediments.

To address erosion and sedimentation associated with project construction and land-disturbing activities, Episcopal Diocese proposes to develop BMPs including using water and/or crushed stone to control dust on temporary roads leading to the construction site, placing erosion control barriers around upland work areas prior to the start of ground disturbing activities, grading and riprapping slopes to protect and stabilize ground slopes, and installing temporary cofferdams in Clear Creek.

We recommend that Episcopal Diocese develop a soil erosion and sediment control plan that includes provisions for its proposed measures. The plan would ensure that any adverse effects on soils and water resources from erosion and sedimentation would be minimized during project construction.

Cultural Resource Protection

We do not recommend the cultural resource surveys requested by the United Keetoowah Band of Cherokee Indians. The construction footprint of the project is estimated to be small, and primarily limited to the existing dam area. However, the protection measures recommended below would require that Episcopal Diocese consult with the United Keetoowah Band of Cherokee Indians and other potentially affected tribes in addition to the Alabama SHPO for ongoing protection of cultural resources.

During the term of any exemption, Episcopal Diocese may occasionally need to implement project modifications that would not require prior Commission approval but could affect cultural resources at the project. These modifications could include activities such as painting or repairing facilities on the dam or general landscaping within the project boundary. To ensure that cultural resources are not adversely affected by such project modifications, we recommend that Episcopal Diocese consult with the Alabama SHPO, Alabama-Coushatta Tribe of Texas, and United Keetoowah Band of Cherokee Indians prior to conducting any maintenance activities, land-clearing or land-disturbing activities, or changes to project operation or facilities that could affect cultural resources.

While the project would have no adverse effect on known historic properties, it is possible that unknown cultural resources could be discovered during the course of constructing or operating the project. Therefore, we recommend that Episcopal Diocese consult with the Alabama SHPO, Alabama-Coushatta Tribe of Texas, and United Keetoowah Band of Cherokee Indians if previously unidentified cultural resources are encountered to ensure the proper treatment of these resources. In the event of any such discovery, Episcopal Diocese would discontinue all land disturbing activities until the proper treatment of any potential cultural resources is established.

Unavoidable Adverse Effects

During project operation, some downstream fish passage mortalities or injuries may occur. However, we would not expect any long-term effects on the aquatic community from these unavoidable project effects.

7.0 FINDING OF NO SIGNIFICANT IMPACT

If the Camp McDowell Project is exempted from licensing as proposed with the additional staff-recommended measures, the project would be constructed and operated while protecting aquatic resources, terrestrial resources, aesthetic resources, existing historic resources, and any previously unidentified cultural resources in the project area.

Based on our independent analysis, issuance of an exemption from licensing for the Camp McDowell Project, as proposed with the additional staff-recommended measures, would not constitute a major federal action significantly affecting the quality of the human environment.

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