

**SACRAMENTO MUNICIPAL UTILITY DISTRICT'S
UPPER AMERICAN RIVER PROJECT
(FERC NO. 2101)**

**SUPPLEMENTAL
PRELIMINARY DRAFT
ENVIRONMENTAL ASSESSMENT**

SECTION 5.3.5 – WILDLIFE

Sacramento Municipal Utility District
Sacramento, California

JULY 2006

TABLE OF CONTENTS

Section & Description	Page
5.3.5 Environmental Effects of the Agency Alternative on Wildlife	1
5.3.5.1 Agency Alternative Measure – Terrestrial Wildlife Monitoring and Adaptive Management Program (Bear Management)	1
Monitoring and Adaptive Management on Bear/Human Interactions Measures Are Unnecessary and Lack the Detail Necessary to Demonstrate the Agency Alternative Reduces Bear/Human Interaction.....	1
5.3.5.2 Agency Alternative Measure – Wildlife and Plant Protection Measures (Wildlife Protection in Project Canals)	2
The Agency Alternative Measure Could Have an Adverse Effect on Wildlife.....	2
5.3.5.3 Agency Alternative Measure – Wildlife and Plant Protection Measures (Biological Evaluations for New as Well as Ongoing Construction and O&M)	3
The Wildlife and Plant Protection Measures Are Unnecessary and Lack the Detail Necessary to Demonstrate the Agency Alternative Reduces Effects on Wildlife.....	3
5.3.5.4 Agency Alternative Measure – Wildlife and Plant Protection Measures (Avian Protection Plan)	5
Broad-Scale Retrofitting of Transmission Line Structures Is Unwarranted	5
5.3.5.5 Agency Alternative Measure – Annual Review of Ecological Conditions	6
The Annual Review of Ecological Conditions Is Unnecessary and Lacks the Detail Necessary to Demonstrate the Agency Alternative Reduces Effects on Wildlife.....	6
5.3.5.6 Agency Alternative Measure – Specific Recreation Measures.....	6
Iowa Hill	7
5.3.5.7 Agency Alternative Measure – Terrestrial Resources	7
The Measure Is Unnecessary and Lacks the Detail Necessary to Demonstrate the Agency Alternative Reduces Effects on Wildlife.....	7
LITERATURE CITED	8

5.3.5 Environmental Effects of the Agency Alternative on Wildlife

The Agency Alternative includes the following measures pertaining to wildlife resources:

- “Terrestrial Wildlife Monitoring” (Bear Management) (Agency Alternative, p. 43);
- “Adaptive Management Program” (Bear/Human Interactions) (Agency Alternative, p. 46);
- “Wildlife and Plant Protection Measures” (Wildlife Protection in Project Canals) (Agency Alternative, p. 49);
- “Wildlife and Plant Protection Measures” (Biological Evaluations for New as Well as Ongoing Construction and O&M) (Agency Alternative, p. 49);
- “Wildlife and Plant Protection Measures” (Avian Protection Plan) (Agency Alternative, p. 50);
- “Annual Review of Ecological Conditions” (Agency Alternative, p. 51);
- “Terrestrial Resources” (Agency Alternative, p. 139);
- “Specific Recreation Measures” (Agency Alternative, p. 120 to 123).

The Agency Alternative cumulative effects are evaluated in Chapter 7. This SPDEA does not evaluate the environmental effects of Agency Alternative measures specific to the wildlife resources of the Chili Bar Project (Agency Alternative, Appendix B).

To determine the environmental effects of the Agency Alternative on wildlife resources, SMUD compared the Agency Alternative’s effects on wildlife resources within the UARP boundary against baseline conditions and the Proposed Action. We considered the Agency Alternative to have a significant effect if it changed the quantity or quality of habitat in the UARP area in such a way as to result in a significant adverse effect to these resources.

However, most of the pertinent Agency Alternative measures include insufficient detail to conclude whether the Agency Alternative results in beneficial or adverse effects, if any at all, compared to the baseline conditions and the Proposed Action. In comparison, the Proposed Action provides concrete and specific commitments that adequately protect wildlife resources. At least one of the Agency Alternative measures (Wildlife Protection in Project Canals) could have an adverse effect on wildlife.

5.3.5.1 Agency Alternative Measure – Terrestrial Wildlife Monitoring and Adaptive Management Program (Bear Management)

Monitoring and Adaptive Management on Bear/Human Interactions Measures Are Unnecessary and Lack the Detail Necessary to Demonstrate the Agency Alternative Reduces Bear/Human Interaction

The Agency Alternative requires monitoring of the effectiveness of bear management measures and provides “if, after a 5-year monitoring period, the number of bear/human interaction incidents does not decline or decrease in severity, the licensee will work with the CDFG and FS to identify and implement additional measures necessary to reduce such problems” (Agency Alternative, p. 46). The measure includes no further specifics and, as a result, provides insufficient detail to evaluate its effect, if any, on bear/human interactions.

By comparison, the Proposed Action provides specific commitments to manage bear/human interactions. The Proposed Action adequately manages bear/human interactions through a proposed cooperative Recreation Plan in partnership with the ENF (License Application, PDEA, p. 5-273 to 5-274). This plan includes a \$211,000 annual contribution from SMUD to the ENF for the administration, operation, maintenance, and component replacement of UARP-related recreation facilities and administration of recreation within the FERC Project Boundary. Under this plan, SMUD and the ENF will work cooperatively with CDFG on mechanisms to reduce the potential for bear/human interactions at recreation facilities. Consideration will be given to, among other things, installing bear-proof garbage containers at all campgrounds, establishing adequate garbage disposal services at all campgrounds, and establishing and enforcing rules for use of garbage containers, food storage lockers, and backcountry food canisters. Implementation of the Recreation Plan will have a beneficial effect compared to baseline conditions by reducing the level of bear/human interactions (License Application, PDEA, p. 5-274), and as a result the Agency Alternative measure is not warranted.

5.3.5.2 Agency Alternative Measure – Wildlife and Plant Protection Measures (Wildlife Protection in Project Canals)

The Agency Alternative Measure Could Have an Adverse Effect on Wildlife

The Agency Alternative requires protecting wildlife from the hazards of open canals and other UARP facilities by maintaining and operating all wildlife protection devices deemed necessary by the USFS and CDFG. SMUD must also monitor and report wildlife mortality, and implement a Wildlife Exclusion Plan (fencing) should more than three deer die in UARP canals during any three-year period.

There is no reasonable scientific basis for fencing UARP canals. The available evidence from the relicensing studies demonstrates the risk to wildlife is negligible at both UARP open-water conveyances—Gerle Canal (9,987 feet long) and the ditch below the outlet of Rubicon–Rockbound Tunnel (480 feet long). The potential for wildlife entrapment and drowning in open water conduits depends on factors such as canal dimensions, steepness of grade, adjacent topography and substrate, flow velocity, and extent of wildlife crossing attempts. Deep canals with vertical walls, steep uphill slopes, and high water velocity generally pose the greatest threat to wildlife.

By contrast, Gerle Canal and the Rubicon–Rockbound ditch mimic natural streams rather than the steep-sided, fast-flowing canal designs typically associated with high levels of wildlife

drowning mortality. These conduits have moderate peak flows and their walls have relatively gradual slopes and are composed of rough gunnite or natural rock substrate (Mule Deer Study Plan, p. 2; Mule Deer Technical Report, p. 8–9). Wildlife use available bridges to cross Gerle Canal and tracks indicate deer successfully cross the canal itself (Mule Deer Technical Report, p. 9). No deer entrapment or fatalities have been recorded in either conveyance (Mule Deer Technical Report, p. 1, 8). Moreover, the loss of an average of one deer each year (i.e., the stated trigger for an exclusion program) is insignificant at the population level when considered in the context of other mortality factors as disease, hunting, and vehicle collisions.

Fences could cause a significant net adverse effect on deer and other wildlife through: 1) entrapment of animals that would inevitably access the canal through, under, or around the fence; 2) creation of a barrier to wildlife movement (Michigan Department of Natural Resources, 1999); 3) exclusion or deterrence of wildlife that currently use the canal for breeding (e.g., common merganser), resting (e.g., Canada goose), foraging (e.g., bats), and movement (e.g., mink, river otter); and 4) potential mortality of birds from collisions with the fence (California Energy Commission, 1995).

The Agency Alternative does not identify the types of protection devices, other than fencing, that may be deemed necessary by the USFS and CDFG. Therefore, determination of the effect of these undefined, hypothetical additional measures would be speculative at this time.

We conclude fencing of the open water conduits in the UARP is not appropriate. No reasonable scientific basis indicates the need to provide fencing, and fencing could have an adverse effect on the environment relative to the baseline condition and the Proposed Action by entrapping wildlife, inhibiting movement, eliminating species' use of the conduits, and increasing potential bird collisions.

5.3.5.3 Agency Alternative Measure – Wildlife and Plant Protection Measures (Biological Evaluations for New as Well as Ongoing Construction and O&M)

The Wildlife and Plant Protection Measures Are Unnecessary and Lack the Detail Necessary to Demonstrate the Agency Alternative Reduces Effects on Wildlife

The Agency Alternative requires a biological evaluation of the potential effects of any new construction or maintenance authorized by the new license on National Forest System lands if the new construction or maintenance could affect a USFS sensitive animal or its habitat. In consultation with FERC, the USFS may require mitigation measures (Agency Alternative, p. 49). The Agency Alternative also requires preparation of a Biological Assessment (BA) prior to SMUD's commencing any construction, operation, or maintenance activities that may affect an ESA listed species (or species proposed for listing) or its critical habitat. The BA must be reviewed by the USFS prior to submittal to USFWS or NMFS for consultation or conference (Agency Alternative, p. 49).

In addition, the Agency Alternative requires notifying the USFS if a USFS sensitive wildlife species is detected prior to or during ongoing construction, operations, or maintenance. “USFS sensitive plant or wildlife species” is a category including but not limited to species listed under the ESA. If the USFS determines UARP-related activities are adversely affecting the sensitive species, SMUD must develop and implement appropriate protection measures in consultation with the USFS and the USFWS (Agency Alternative, p. 49).

The Agency Alternative provides no specific rationale for these requirements.

The results of an evaluation/assessment could support one or more undefined actions that might affect wildlife. However, the Agency Alternative’s lack of detail precludes any determination of the likelihood such effects might occur, and if they do occur, whether they are beneficial or adverse.

By comparison, the Proposed Action provides specific commitments that provide adequate protection for wildlife. In the License Application, both the PDEA and the Licensee-prepared Biological Assessment address effects of proposed new construction and continuing O&M. In addition, SMUD will implement an Annual Employee Environmental Awareness Program to ensure compliance with area restrictions and with procedures for protecting wildlife (License Application, PDEA, p. 3-15). SMUD and ENF will conduct an annual review of, and SMUD will prepare and implement a study plan for wildlife. SMUD will also develop and implement a plan to minimize adverse effects on wildlife species during construction of the Iowa Hill Development. Thus, unlike the Agency Alternative measure, which is too vague to support a determination regarding its effect on wildlife, the Proposed Action provides a beneficial effect compared to baseline conditions by including specific commitments that provide adequate protection for wildlife.

This measure is also unnecessary measure because it concerns activities “authorized by the license” (Agency Alternative, p. 49). These effects will be fully analyzed in FERC’s NEPA document and addressed, as appropriate, in ESA consultation, before FERC issues the license. This measure implies that after FERC completes its NEPA review and any ESA consultation, SMUD would be required to begin yet another cycle of environmental analysis. Such additional environmental review is excessive.

Finally, it should be noted that FERC as the lead federal agency has ultimate responsibility for compliance with Section 7 consultation requirements of the ESA, including preparation of a BA. SMUD, as FERC’s designated non-federal representative, may prepare a draft BA for submittal to FERC but responsibility for distribution of the BA resides with FERC.

5.3.5.4 Agency Alternative Measure – Wildlife and Plant Protection Measures (Avian Protection Plan)

Broad-Scale Retrofitting of Transmission Line Structures Is Unwarranted

The Agency Alternative requires SMUD, within one year of license issuance to: 1) retrofit all transmission lines to meet design and siting specifications established by the Avian Powerline Interaction Committee (APLIC) to avoid or minimize bird electrocutions (APLIC 1996) and collisions (APLIC 1994); or 2) develop an Avian Protection Plan (APP) approved by the USFWS.

SMUD's evaluation of the UARP electric transmission system suggests the risk to birds and other wildlife is minimal based on the existing design and location of the facilities, avian flight patterns in the vicinity, and the absence of *any* recorded fatalities. Moreover, broad-scale retrofitting of all non-conforming transmission line structures in the UARP system is unwarranted based on APLIC guidelines. APLIC recommends utilities instead focus efforts to reduce the risk of bird electrocution and collision mortality on areas of concern or "problem poles" (e.g., areas with documented fatalities, problem nests, or high risk of mortality). A risk assessment can determine the extent of avian use, known mortality, problems with nesting on structures, proximity of established flyways, adjacent wetlands, prey populations, and perch availability within the UARP (APLIC and USFWS, 2005). In practice, APLIC acknowledges the unacceptable cost-benefit ratio associated with retrofitting a utility's entire electrical system.

Rather than retrofitting a utility's entire electrical system, many utilities have addressed APLIC guidelines by implementing an Avian Protection Program (APP) that includes the following measures:

- a structured program for monitoring and reporting bird-caused outages, bird mortality, problem poles/structures/lines, and problem nests;
- an Employee Awareness Program to ensure compliance with the APP;
- a requirement to construct all new or rebuilt lines to comply with APLIC standards and guidelines;
- a requirement to retrofit or modify all poles that have contributed to an avian/wildlife fatality; and
- participation in utility-wide programs and research for reducing adverse effects of bird-powerline interactions.

The Proposed Action implements the APLIC guidelines by developing the components of an APP. Given the Proposed Action's implementation of these guidelines and considering the minimal risk of avian electrocution or collision on the UARP transmission system, the Agency Alternative requirement to complete broad-scale retrofitting of all non-conforming UARP structures will provide little, if any, environmental benefit compared to baseline conditions and the Proposed Action, and is not warranted.

5.3.5.5 Agency Alternative Measure – Annual Review of Ecological Conditions

The Annual Review of Ecological Conditions Is Unnecessary and Lacks the Detail Necessary to Demonstrate the Agency Alternative Reduces Effects on Wildlife

The Agency Alternative requires an annual review of ecological conditions. However, the measure lacks sufficient detail to determine whether it has any effect on wildlife, and if it does have an effect, whether that effect is beneficial or adverse. For example, the measure states that the consultation is “to review and discuss the results of implementing these conditions, as well as to discuss other issues related to preserving and protecting ecological values affected by the Project” (Agency Alternative, p. 51). The measure provides no further detail regarding the substance of the consultation.

By comparison, the Proposed Action provides specific commitments to protect wildlife. In the License Application, both the PDEA and the Licensee-prepared Biological Assessment address effects of proposed new construction and continuing O&M. In addition, SMUD will implement an Annual Employee Environmental Awareness Program to ensure compliance with area restrictions and with procedures for protecting wildlife (License Application, PDEA, p. 3-15). SMUD and ENF will conduct an annual review of, and SMUD will prepare and implement a study plan for wildlife. SMUD will also develop and implement a plan to minimize adverse effects on wildlife species during construction of the Iowa Hill Development. Thus, unlike the Agency Alternative annual review, which is too vague to support a determination regarding its effect on wildlife, the Proposed Action provides a beneficial effect compared to baseline conditions by including specific commitments that provide adequate protection for the species.

5.3.5.6 Agency Alternative Measure – Specific Recreation Measures

Development, Expansion, and Improvement of Recreation Facilities May Have an Adverse Effect on Wildlife

The Agency Alternative requires development, expansion, improvement, relocation, or other modification of recreation facilities at over 60 sites. These actions and associated increases or redistribution of recreation use may degrade wildlife habitat and cause increased disturbance to wildlife.

The Proposed Action includes specific commitments such as the Employee Environmental Awareness Program and the Annual Review of Special Status Species to reduce UARP-related recreation effects on wildlife to a less-than-significant level. In addition, a key component of the Proposed Action is the concept of four-year cycles, whereby SMUD and the ENF will, through the next license term, regularly revisit and update plans for reconstruction, construction and engineering solutions. This adaptive plan will ensure flexibility in recreation planning and development with consideration given to avoiding sensitive habitats and responding to changing distributions of special-status species. To the extent the Agency Alternative’s recreation measures result in more recreation traffic than occurs under either baseline conditions or under

the Proposed Action's measures, the Agency Alternative's recreation measures may result in an adverse effect on wildlife compared to either baseline conditions or the Proposed Action.

Iowa Hill

5.3.5.7 Agency Alternative Measure – Terrestrial Resources

The Measure Is Unnecessary and Lacks the Detail Necessary to Demonstrate the Agency Alternative Reduces Effects on Wildlife

The Agency Alternative requires SMUD to mitigate the loss of wildlife habitat associated with the Iowa Hill Pumped Storage Development (Iowa Hill) by purchasing an equivalent acreage of land (or a conservation easement for an equivalent acreage) to be managed as wildlife habitat over the term of the license. The in-kind value of lands proposed for this purpose will be determined by the USFS and CDFG.

The measure is contradictory in part and too vague to evaluate its environmental effects. Equivalent acreage (i.e., acre-for-acre replacement) is not necessarily the same as replacement of "in-kind" value. Relicensing studies demonstrate the land to be occupied by Iowa Hill has relatively moderate wildlife value. Equivalent compensation might be accomplished through acquisition and management of lesser acreage offering higher value to wildlife or by conversion of low value habitat to high value habitat. In addition, the measure does not state the acreage to be replaced. The required acreage could be interpreted as only the acreage that would be permanently lost to development or it could include acreage that is subject to temporary disturbance. The measure also does not specify: 1) the formula to be used by the agencies to assess "in-kind value"; 2) the options that would be appropriate if suitable compensation habitat is not available through a willing seller at a reasonable price; 3) the target species for compensation (e.g., cost for managing lands may vary by species' habitat requirements); 4) a cap on the amount that SMUD will have to pay per acre; and 5) the party responsible for managing the acreage.

Development of Iowa Hill will make approximately 95.4 acres permanently unusable by wildlife, and will permanently alter 22.3 acres, which will be cleared and subsequently managed for low-growing vegetation compatible with operation, maintenance, and safety requirements (License Application, PDEA, p. 5-279). As part of the Proposed Action, SMUD will adopt a Wildlife Protection Plan to restore and enhance non-developed areas upon completion of Iowa Hill (License Application, PDEA, p. 5-280). The PDEA concluded that this loss of habitat would permanently displace some wildlife capable of avoiding the disturbance (License Application, PDEA, p. 5-279 to 5-280). However, effects on the species of greatest concern (e.g., northern goshawk, California spotted owl) are expected to be less-than-significant, given that the lost acreage represents habitats that are well represented in the regional landscape, do not provide any unique life requisites to the species in the area, and the beneficial effects of the Wildlife Protection Plan (License Application, PDEA, p. 5-281 to 5-282).

LITERATURE CITED

- Boyle, S. A., and F. B. Samson. 1985. Effects of nonconsumptive recreation on wildlife: a review. *Wildlife Society Bulletin* 13:110-116.
- Bury, R. L. 1978. Impacts of snowmobiles on wildlife. *Transactions North American Wildlife Conference* 43:149-156.
- California Energy Commission. 1995. Avian collision and electrocution: an annotated bibliography. Publication No.: P700-9-001.
- Cassier, E. F., and E. D. Ables. 1990. Effects of disturbance by cross-country skiers on elk in northern Yellowstone National Park. Final Report to the National Park Service. 103 p.
- Cole, D. N., and P. B. Landres. 1995. Indirect effects of recreationists on wildlife. Pages 183-202 *in* Knight and Gutzwiller, eds. *Wildlife and recreationists: coexistence through management and research*. Island Press, Washington, D.C. 372 p.
- Fraser, J. D. 1984. The impact of human activities on bald eagle populations – a review. Pages 68-94 *in*: J.M. Gerard and T.M. Ingram, eds. *The bald eagle in Canada, proceedings of bald eagle days*. Winnipeg, Canada.
- Gabrielsen, G. W., and E. N. Smith. 1995. Physiological responses of wildlife to disturbance. Pages 95-107 *in* Knight and Gutzwiller, eds. *Wildlife and recreationists: coexistence through management and research*. Island Press, Washington, D.C. 372 p.
- Grubb, T.G., and R.M. King. 1991. Assessing human disturbance of breeding bald eagles with classification tree models. *Journal of Wildlife Management* 55:500-511.
- Gutzwiller, K. J. 1993. Serial management experiments: an adaptive approach to reduce recreational impacts on wildlife. *North American Wildlife and Natural Resources Conference* 58: 528-536.
- Gutzwiller, K. J. 1995. Recreational disturbance and wildlife communities. Pages 169-181 *in* Knight and Gutzwiller, eds. *Wildlife and recreationists: coexistence through management and research*. Island Press, Washington, D.C. 372 p.
- Joslin, G., and H. Youmans, coordinators. 1999. Effects of recreation on Rocky Mountain wildlife: A review for Montana. Committee on effects of recreation on wildlife, Montana Chapter of The Wildlife Society. 307 p.

- Knight, R. L., and D. N. Cole. 1991. Effects of recreational activity on wildlife in wildlands. *North American Wildlife and Natural Resources Conference* 56: 238-247.
- Knight, R. L., and D. N. Cole. 1995. Wildlife responses to recreationists. Pages 51-69 *in* Knight and Gutzwiller, eds. *Wildlife and recreationists: coexistence through management and research*. Island Press, Washington, D.C. 372 p.
- Knight, R. L., and K. J. Gutzwiller, eds. 1995. Knight and Gutzwiller, eds. *Wildlife and recreationists: coexistence through management and research*. Island Press, Washington, D.C. 372 p.
- Knight, R. L., and S.K. Knight. 1984. Responses of wintering bald eagles to boating activity. *Journal of Wildlife Management* 48:999-1004.
- McCool, S. 1978. Snowmobiles, animals and man: interactions and management issues. *North American Wildlife and Natural Resources Conference* 43:140-148.
- McGarigal, K., R. G. Anthony, and F. B. Isaacs. 1991. Interactions of humans and bald eagles on the Columbia River estuary. *Wildlife Monographs* No. 115.
- McReynolds, H. E., and R. E. Radke. 1978. The impact of motorized humans on the wildlife of forested lands. Pages 102-117 in C. M. Kilpatrick, ed. *Wildlife and people*. Proceedings of the 1978 John S. Wright Forestry Conference, 23-24 February 1978. Purdue University, West Lafayette, Indiana.
- Michigan Department of Natural Resources. Fencing issues in Michigan. *Wildlife Division Issue Review Paper* 7. October 5, 1999.
- Montopoli, G. J., and D. A. Anderson. 1991. A logistic model for the cumulative effects of human intervention on bald eagle habitat. *Journal of Wildlife Management* 55:290-293.
- Poole, A. 1981. The effects of human disturbance on osprey reproductive success. *Colonial Waterbirds* 4:20-27.
- Schank, C.C. 1979. Human related behavioral disturbance to large mammals: a bibliography and review. Report prepared for Foothills Pipe Lines (South Yukon), Ltd. Calgary.
- Schueck, L. S., and J. M. Marzluff. 1995. Influence of weather on conclusions about effects of human activities on raptors. *Journal of Wildlife Management* 59:674-682.
- Stalmaster, M. V. 1983. An energetics simulation model for managing wintering bald eagles. Ph.D. Thesis, Utah State University, Logan. 157 p.

Stalmaster, M. V., and J. L. Kaiser. 1997. Flushing responses of wintering bald eagles to military activity. *Journal of Wildlife Management* 61(3):1307-1312.

Stalmaster, M. V., and J. L. Kaiser. 1998. Effects of recreational activity on wintering bald eagles. *Wildlife Monographs*, No. 137.

Weeden, R. 1976. Nonconsumptive users: a myth. *Alaska Conservation Review* 17(3):3-15.