SNPLMA Project #: _____ **(To be assigned by SNPLMA Administration)**

Appendix B-8
TAHOE SCIENCE AND RESEARCH PROJECTS
ESTIMATED DIRECT COSTS & KEY MILESTONE DATES

Project Name: Urban Lot Biodiversity Project
Sponsoring Agency: US Forest Service
Date: March 10, 2004

Contact: Julie Roth
Phone: 530-543-2628
EIP # 10163.2

Identify estimated costs of eligible reimbursement expenses:

1. Planning and Research Costs (Specialist surveys, reports, monitoring, data collection, analysis, etc. *purchased for the project*).	$0	0 %
2. Direct Project Labor (Payroll, fringe benefits, etc.). LTBMU review landscape model, data analyses	$50,000	13 %
3. Equipment (tools, software, specialized equipment, etc.)	$0	0 %
4. Travel (Travel expenses associated with project)	$0	0 %
5. Project Contracts, Grants and Agreements (Contracts, grants, agreements to be awarded)	$300,000	80 %
6. Project Administration (contract admin services, procurement costs). LTBMU processing & monitoring	$25,000	7 %
7. Other (Explain)	$0	0 %
8. Contingency Reserve (Not to exceed 10%)	$0	0 %
TOTAL:	$375,000	100 %

Estimated Key Milestone Dates:

Milestones:	Date:	Estimated Costs
FY04 LTBMU project develop. & monitoring	Sept 30, 2004	$15,000
Field data collection summer 2004 complete	Oct 31, 2004	$110,000
Draft landscape model & prelim. data report	Mar 31, 2005	$40,000
Field data collection summer 2005	Oct 31, 2005	$110,000
Final landscape model & comprehensive data summary report	Mar 31, 2006	$40,000
FY05-06 LTBMU project monitoring and data analyses (including review of landscape model and comprehensive data summary report)	June 30, 2006	$60,000

SNPLMA Project #: _____ **(To be assigned by SNPLMA Administration)**

Appendix I-2
TAHOE PROJECT PROPOSAL

Project Name: Urban Lot Biodiversity project **EIP #** 10163.2

Lead Agency: U.S. Forest Service, LTBMU

Contact: Julie Roth

Phone Number: 530-543-2628

Email Address: jroth@fs.fed.us

Threshold: Wildlife

Threshold Standard: W-1 and W-2

Total Project Cost: $375,000

Project Description:

Land development, fragmentation, and disturbance affect all land ownerships and present complexities to all of the Basin's land management and environmental regulatory agencies in the basin (e.g., the US Forest Service, Tahoe Regional Planning Agency, Nevada Division of State Lands, and California Tahoe Conservancy). Many other organizations have an interest in the effects of human development and disturbance on biological diversity, such as the League to Save Lake Tahoe and the Lahonton Regional Water Quality Control Board. The management of urban-wildland interface areas may be pivotal in maintaining important ecological services, and it is clearly a priority in guiding the development of management direction and restoration activities in the Basin over the decades to come.

Sampling will focus on how the Basin's lower-elevation forested ecosystems are being impacted by fragmentation. We created a 30 meter by 30 meter gridded GIS layer for development, and used the range of development within 300 meters to classify each grid cell into one of five development classes: very low (no development), low (up to 15% developed), moderate (between 15 and 30% developed), high (between 30 and 45% developed), and very high (more than 45% developed, which ranges up to 70% developed). We selected 100 sample sites. During the next two years, bird, mammal, insect, and plant species data will be collected, in addition to basic data on vegetation structure and composition and ground cover.

Describe the purpose and need for the project:

The Lake Tahoe Basin is particularly vulnerable to the loss of biological diversity because of its physiognomy and geographic location. Lake Tahoe is located in a small and topographically isolated montane basin, with a steep elevational gradient that serves to create high levels of natural habitat fragmentation. Ridgelines that define the perimeter of the Basin likely serve as semi-permeable barriers to movement; they reduce immigration rates of less mobile species, species with limited dispersal capacity, and species that are restricted to lower elevations. Ecological assemblages within the Basin are also naturally fragmented: the steep elevational gradient of the Basin, combined with its location in a transition area between the Great Basin and Sierra Nevada zoogeographic regions, result in a high diversity of vegetation communities, and associated plant and animal species. The terrestrial environment is distributed in relatively narrow, linear

elevational bands around the lake that are further fragmented laterally, by well-defined watersheds that extend from the shores of Lake Tahoe to the Basin's perimeter.

Further, multiple agencies in the Basin have land acquisition programs that purchase parcels of land that are sensitive to management or serve important ecological services, such as wetland areas in residential or commercial or floodplain areas in sensitive watersheds. In 2001, Congress questioned the benefits of the U.S. Forest Service lands acquisition program, given its high cost. Congress requested an evaluation of the value of these "urban lots" in the Lake Tahoe Basin in meeting agency objectives for water quality, biological diversity, and recreation. A study of the landscape geometry, and specifically the contribution of undeveloped parcels located in the otherwise highly developed lower elevation areas in the Basin, will provide the necessary information to guide land acquisition and management programs in the Basin.

Describe the goals and objective of the project (For Science & Research Projects describe Key Management Questions being addressed):

Goals and Objectives

The goal of the Landscape Biodiversity Project is to determine the role of urban-wildland interface and adjacent wildlands in supporting biological diversity at stand and landscape scales in the Lake Tahoe Basin, and then use this information to develop tools (models) that can be used to evaluate the effect of various land allocation and management scenarios on population responses at stand and landscape scales. Management scenarios may include future development options, recreation management options, and forest health and other restoration activities. At present, the project proposes to describe the distribution, abundance, and productivity of many vertebrate, ant, and vascular plant species, at sample sites that range in size, isolation, and disturbance.

Key Management Questions

This study addresses several of the key management questions posed by resource and land management agencies in the Basin. The study will generate new information on the role of urban lots in maintaining biological diversity in the Basin and the effect of fragmentation on biological diversity. Specifically, the study addresses the following forest health / biodiversity questions and an adaptive management question:

2.1.4 What ecosystem elements and management actions pose the greatest risk to old forest ecosystems and associated species, and what actions would be most effective and important in order to protect, conserve, and restore old forests?

2.1.5 What is the role of "urban lots" (i.e., patches of forest interspersed within urban and rural environments) in supporting biological diversity and contributing to the risk of fire in the Basin, what management actions would be most effective in meeting multiple objectives including biological diversity, and how is the condition of these lots changing over time?

2.1.7 What indicator species ("focal" species) are strong representatives of the condition of forested conditions, as determined by research and monitoring efforts directed at identifying and validating candidate focal species and species complexes?

2.1.10 What are the key areas of biological diversity associated with terrestrial ecosystems, as determined by a comprehensive assessment, and how is the composition, abundance, and distribution of associated plant and animal species and plant communities changing over time?

4.5.1 Are current Basin thresholds adequate to protect the health of the ecosystem, and should they be modified to improve their effectiveness?

This study will inform the TRPA threshold update process. Standards and measures for thresholds need be specific and based on reliable information. In that light, this study will generate reliable, Basin-specific information on appropriate and measurable standards, and will assist efforts to identify indicators for several existing and proposed thresholds.

"Habitat of Special Significance" (W-2) threshold standard -- it is proposed that this threshold be updated to focus on ecosystem integrity, with special emphasis on ecologically significant wildlife communities. This threshold overlaps to some degree with the existing Vegetation Protection Standards (V-1, V-2). This study will provide information with which to update standards and indicators for wildlife and vegetation thresholds, at both patch and landscape scales. Specifically, it will provide information on potential standards and indicators for patch-scale vegetation structure and composition, and information on levels of anthropogenic disturbance in and around patches. It will also provide information on potential standards and indicators (including indicator species) for various levels of landscape fragmentation and disturbance, and identify key areas where management can minimize or reduce fragmentation effects.

"Special Interest Species" (W-1) threshold standard -- it is proposed that this threshold be updated to focus on species at population and community levels, including "Focal Species" (W-1), consisting of species at risk and of special interest, and "Species Diversity" (W-3), consisting of measures of biological diversity and integrity, including native and exotic species by ecosystem type. The threshold revised as such would overlap to some degree with the existing Vegetation Protection Standard (V-1). The study will provide information with which to update these threshold standards and indicators by collecting information on patterns of plant and animal species presence and composition that are associated with undisturbed and unfragmented patches. The information can be used to set standards for individual patches and Basin-wide forest ecosystem conditions, and identify potential indicators (including indicator species) to measure standards. It will also provide data on the sensitivities of some forest-associated focal species to disturbance and fragmentation, which will be useful in evaluating species-specific standards and indicators.

Describe the anticipated project accomplishments:

1. Conduct 2004 and 2005 field data collections.
2. Create and refine a landscape model.
3. Conduct data analysis and provide interim (2005) and final (2006) reports on the data collected and the associated landscape modeling efforts.

Describe the "readiness" of this project to move forward (Environmental documentation, etc.)

This project was initiated in 2001. The first of three years of scheduled data collection occurred in 2003; implementation of this project had been delayed by the lack of adequate funding. Completion of this project is contingent on the requested funding.

Describe partnerships for this project. (Include documentation)

The proposed work is a collaborative effort between the USFS Lake Tahoe Basin Management Unit, USFS PSW Sierra Nevada Research Center, University of Nevada Reno, University of California, Davis, and Tahoe Regional Planning Agency. Graduate students and scientists from these four institutions are part of the science team designing and implementing the project. A challenge cost-share agreement documents the relationship between LTBMU, SNRC, and UNRUS (CCA 01-CS-11051900-022).

For Science & Research Projects describe how this project will guide future management activities:

- It will provide a tool for evaluating the potential consequences of development and land management scenarios that affect the distribution and integrity of habitat conditions for vulnerable vertebrate species in the Basin.
- It will provide information on potential standards and indicators for patch-scale vegetation structure and composition, and on levels of anthropogenic disturbance in and around patches.
- It will also provide information on potential standards and indicators (including indicator species), for various levels of landscape fragmentation and disturbance, and it will identify key areas where management can minimize or reduce fragmentation effects.
- It will inform the establishment of threshold standards and indicators by providing information on patterns of plant and animal species presence and composition that are associated with various levels of development and disturbance.
- It can be used to identify potential indicators (including indicator species) to measure standards, and it will provide data on the sensitivities of some forest-associated focal species to disturbance and fragmentation, informing species-specific standards and indicators.

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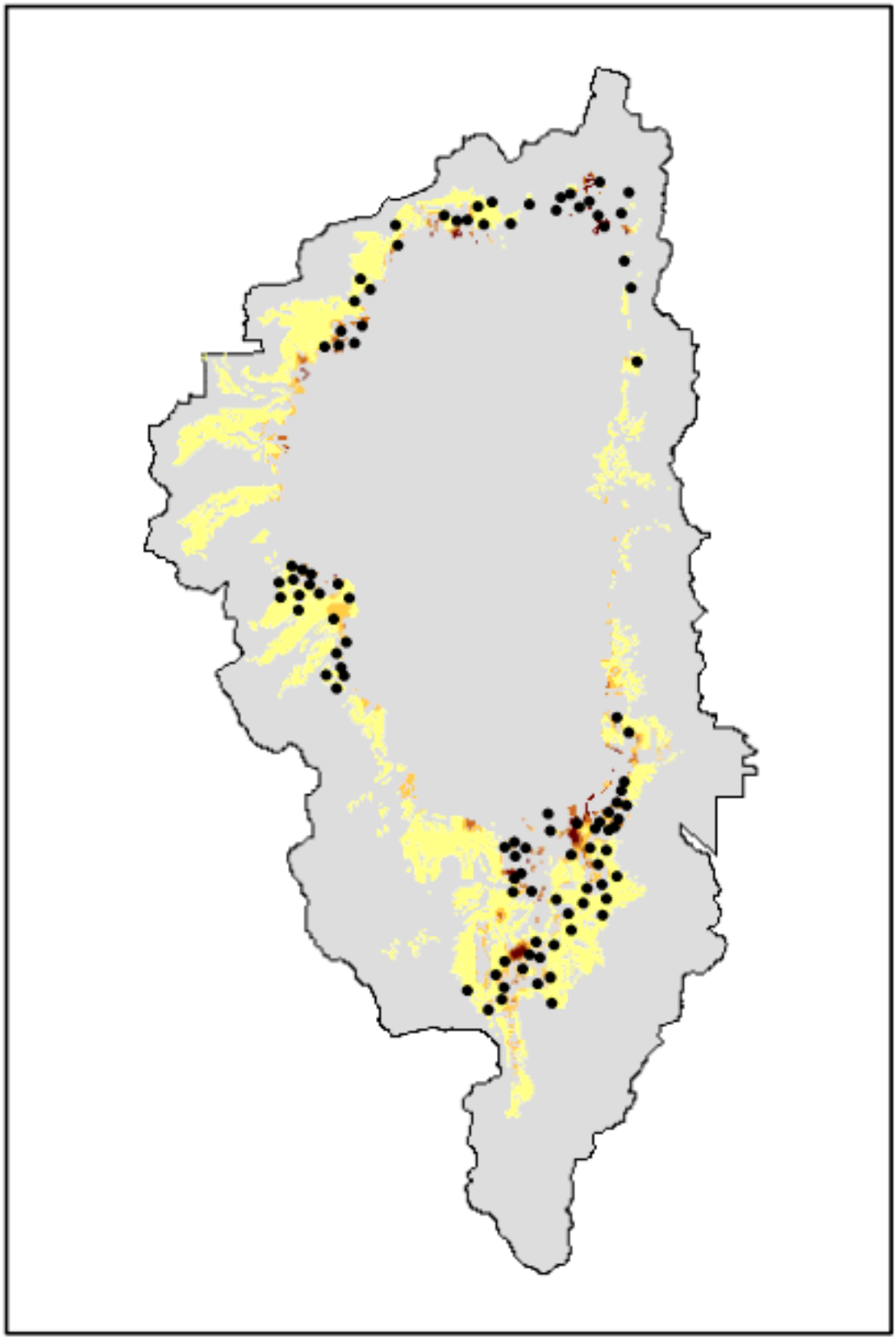
Include an 8 ½ X 11 map depicting the project, or research/study area.
See below.



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