

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
COOS BAY DISTRICT OFFICE

BAT HOUSE PLACEMENT

ENVIRONMENTAL ASSESSMENT
OR-125-01-15

CHAPTER I - PURPOSE AND NEED FOR ACTION

The Purpose of this Environmental Assessment (EA) is to:

- Assess any potential environmental impacts that may result if the No Action or the Proposed Action is implemented.
- Identify appropriate mitigation measures.
- Document the decision-making process.

Need For Proposed Action

Twelve species of bats could occur within the Coos Bay District (Table 1). Bats use a variety of habitats for roosting, and roosts are often used for specific purposes. Snags are key habitat as they are used for roosting, rearing of young, and hibernacula. Large, rough formed trees with loose bark or large crevices are also used for these purposes. Other roosting and hibernating structures include buildings, bridges, and caves (Holthausen 1994). Suitable roost sites require an adjacent water source, favorable temperature and moisture conditions, and protection from predators. Roost types include maternity, night use, day use, and winter hibernacula. Loss of roosting habitat, and disturbance of maternity colonies and hibernacula are attributed to a decrease in bat population numbers (FEMAT 1993).

Table 1. Bat species that could occur on the Coos Bay District.¹

Common name	Genus /species	Status Federal ²	Status State
Little brown bat	<i>Myotis lucifugus</i>	none	none
Yuma myotis	<i>Myotis yumaensis</i>	SC	Sensitive
Long-eared myotis	<i>Myotis evotis</i>	SC	Sensitive
Fringed myotis	<i>Myotis thysanodes</i>	SC	Sensitive
Long-legged myotis	<i>Myotis volans</i>	SC	Sensitive
California myotis	<i>Myotis californicus</i>	none	none
Silver-haired bat	<i>Lasionycteris noctivagans</i>	none	Sensitive
Big brown bat	<i>Eptesicus fuscus</i>	none	none
Hoary bat	<i>Lasiurus cinereus</i>	none	none
Pacific western big-eared bat	<i>Corynorhinus townsendii</i>	SC	Sensitive
Pallid bat	<i>Antrozous pallidus</i>	none	Sensitive
Brazilian free-tailed bat	<i>Tadarida brasiliensis</i>	none	none

¹ from Csuti et al. (1997)

² SC - Species of Concern

Bat habitat has been altered or removed in portions of the Coos Bay District. In the forested setting, timber harvesting, road related activities, hazard tree removal, and timber salvage have removed large snags, mature hardwoods, and old growth trees that provided bat roosting habitat. Watershed analyses often identify current deficiencies of snags and logs, and recommend projects to restore these habitat structures across the landscape.

Recreational sites on the District are also lacking bat roosting habitat. Loss of habitat is due to hazard tree removal within the recreation areas, and harvest practices in adjacent units. At the Loon Lake Campground, hazard tree removal and removal of diseased trees within the park have removed natural bat habitat. Bats have been observed roosting in small numbers on buildings at the campground. Bat houses are needed to provide roosting structures that contain a more favorable microclimate for the bats. This could shift bat use from the buildings to the bat houses. Placement of houses where visitors could see them would provide an opportunity for environmental education.

Bats have also been observed at the Dean Creek Elk Viewing Area (EVA) and at Spruce Reach Island. Timber harvest activities in the area have removed natural bat roosting structures. With the exception of the spruce stand on the island, there is a lack of snags and large diameter trees in the immediate area. Installation of bat houses would provide roosting structures for bat species that utilize boxes.

In western Oregon, suitable bridges are used by bats for roosting (Keeley 1998, Adam and Hayes 2000, Arnett and Hayes 2000). Certain bridges provide warm air pockets that are favorable for bats, and a

roost location that is close to water and foraging areas. An inventory of Coos Bay District BLM bridges by Keeley (1998) identified bridges that could be retro-fitted with roosting structures to provide bat habitat.

In the absence of natural roosting habitat, or where habitats have been substantially altered, it is proposed to install bat houses to provide artificial bat habitat. It has been known for many years that some species of bats will accept artificial habitat structures for these types of roost sites. Bat species that naturally roost in buildings or under bridges are most likely to utilize bat houses (Tuttle and Hensley 1993). Big brown bats and little brown bats are known to use bat houses (Tuttle and Hensley 1993). Installation structures that could be used for the houses include: bridges, culverts, buildings (bathrooms, visitor centers, kiosks, barns, etc.), and free standing (generally on wooden poles). Placement of bat houses should only be considered a short-term action under a long term management goal of natural recruitment of snags and habitat trees for bat roosting habitat.

Careful selection of the bat house sites and designs would be used to maintain a low human/bat interaction prospect. There is no intention to cause alarm, harmful interaction or injury to either the human or bat populations that may use the general area of the bat houses. Interpretive messages would direct people not to handle any bat that they might find.

This action is subject to and in conformance with the *Coos Bay District Resource Management Plan & Environmental Impact Statement* and its Record of Decision (BLM 1995); which is in conformance with the *Final Supplemental Environmental Impact Statement on Management of Habitat for Late-Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl* (USDA; USDI 1994a) and its Record of Decision (USDA; USDI 1994b). This EA is tiered to these documents. The Analysis File contains additional information used by the interdisciplinary team to analyze impacts and alternatives and is hereby incorporated by reference.

Decisions To Be Made From This Analysis

The decision to be made in regard to this EA is to:

- Not implement the project (No Action), or
- Implement the project as described in this document (Proposed Action).

Scoping

The primary scoping process consisted of an interdisciplinary team who defined the alternatives to be examined in the EA. A public scoping letter requesting comments on the proposed action was sent to individuals and organizations on the Coos Bay District's mailing list, and was also available on the Coos Bay District Internet Home Page. A public notice was printed in *The World* newspaper on May 4, 2001. No public comments were received.

Issues, Concerns, and Opportunities

Roosting Habitat for Bats: Suitable roosting structures for bats are lacking throughout the Coos Bay District. Installation of bat houses is a management action that can provide bat roosting habitat in the short term.

Recreation impacts: Installation of bat houses in recreational settings may create negative impacts to visitors.

Potential Issues Identified, and Eliminated from Further Analysis:

Structural Integrity: would placement of the houses degrade the structural integrity of bridges, culverts, or buildings?

The bat houses would not have structural effects on bridges, culverts, or buildings. The placement of houses would not interfere with water flow, create a wind drag, or add measurable weight to the structures. Accumulation of guano on the bridges is not a concern due to the type of bridge structure and the low levels of bat use (Engineering report is in the Analysis File).

Health Concerns: Would placement of bat houses increase the risk of contracting diseases?

Rabies and histoplasmosis are the only two diseases that have been transmitted from bats to humans. Only about one in a thousand bats may be incubating rabies (Tuttle 1988). The occasional bat that does have rabies is not aggressive and does not attack people; however a bat can bite in self-defense (BCI 2001). Rabies is nearly always transmitted by bite and not handling bats will eliminate the risk of contracting the disease.

There has been no evidence that rabies from bats has triggered an outbreak in other animal species but transmission to individual animals has been documented (BCI 2001). Any mammal can contract the disease, but most notably are dogs, coyotes, foxes, cats, bats, raccoons, and skunks.

Histoplasmosis is a respiratory illness caused by breathing dust that contains spores of the *Histoplasma capsulatum* fungus. The fungus is uncommon in bats, and it is rare in the northern United States. Ninety percent of the cases that were reported in the United States occurred in the eastern states (Tuttle 1988). The disease is most commonly associated with long exposure to dust that contains bird droppings in the midwestern and southern portions of the U.S.

Permit or License Requirements

None required.

CHAPTER II - ALTERNATIVES INCLUDING THE PROPOSED ACTION

No Action Alternative

Under this alternative, bat houses would not be installed. In the short term, there would continue to be a lack of roosting structures available for bats in both the forested and developed settings. Snag creation would occur through restoration projects which would produce some suitable roosting structures in the future when bark would begin to separate from the tree. Structures such as snags and large diameter, rough-barked trees would develop in the reserve areas in the forested setting over time.

Proposed Action

Under the Proposed Action, bat houses would be installed in various locations throughout the Coos Bay District. Installation structures that could be used for the houses include: bridges, culverts, buildings (bathrooms, visitor centers, kiosks, barns, etc.), and free standing (generally on wooden poles).

House Designs: Different house designs would be used, but will be analyzed under the common heading of “bat house” as there is no significant difference in size, construction material, or bat use numbers. Examples of house designs that could be used are: bachelor house, rocket house, Missouri-style, and nursery house. These could be single chambered, multi-chambered, or multi-box structures. The houses would be constructed as recommended by Bat Conservation International (www.batcon.org). The houses would be made of wood or other materials recommended by BCI, and may have insulation, netting, and/or a heat absorbing device with it. The size for a typical rocket house is approximately 24 inches high x 6 inches wide x 6 inches long, and a nursery house is approximately 24 inches high by 3 inches wide by 48 inches long, but dimensions may vary. Hand or mechanical tools could be used for installing the boxes. Nursery boxes mounted back to back have attracted up to 400 bats in some areas of North America (Tuttle and Hensley 1993). Bats could occupy the houses throughout the year.

Tuttle (1988) lists the following factors as being crucial to the success of a bat house: daily temperature profile (determined by house size, shape, insulation and placement), size and shape of internal roosting spaces, roughness of the surface that the bat clings to, and distances to drinking and feeding areas. Key factors for our District are to optimize the temperature and heat holding capacity of the boxes with southern exposure, and to maximum sunlight exposure. Nursery colonies of big brown bats require temperatures in the 80 to 90 F. range while bachelor groups tend to choose cooler locations (Tuttle 1988).

Installation Structures: Under this alternative, a wide variety of structures would be used to install bat houses. Appendix B contains photographs of some of the installation structure types. Installation could occur at any time of year. In general, houses would be installed higher than 12 feet above the ground, and out of human reach. Bat houses would not increase the maintenance needs for the structures; bat houses are low to no maintenance provided the structures/houses are not damaged by wind, rot, or human activity. Structures would include:

Bridges: Some bat houses would be retrofitted to bridges along forest roads within the District. Hand and/or power tools would be used to attach the bat houses directly to the bridge with glue or

screws. Pre-drilling may be needed on some structures to facilitate a screw attachment. Specific installation directions would be provided in a “task order” to show where and exactly how the house would be attached. Bridges that could provide potential roosting sites were identified in “Bat Use of Bridges - Bureau of Land Management, Coos Bay District” report (Keeley 1998). Equipment noise would not exceed ambient levels during installation. No waste, toxic materials or residues would be created during installation.

Culverts: Bat houses would be installed in large culverts (> 36 inches diameter) along forest roads within the District. The bat houses would be attached directly to the culvert with glue or screws. Hand and/or power tools would be used. Pre-drilling may be needed on some structures to facilitate a screw attachment. Specific installation directions would be provided in a “task order” to show where and exactly how the house would be attached. New culvert construction could include a bat house in the culvert design, where the box would extend up into the fill from the top of the culvert (Appendix B). Bat houses would only be installed in culverts where the boxes would not interfere with normal flow, and where there would be little likelihood of the box becoming wet during high flow run off events. Equipment noise would not exceed ambient levels during installation. No waste, toxic materials or residues would be created during installation.

Buildings: Bat houses would be installed on buildings including bathrooms, visitor centers, kiosks, barns, etc. In general, the bat boxes would be installed at least 12 feet up from the ground and on the southern or western most side of the building. Boxes would not be placed where there is a high potential for contact between people and bats. Hand and/or power tools could be used to install the boxes, but equipment noise would not exceed ambient levels. No waste, toxic materials or residues would be created during installation.

Free standing: These houses would be mounted on a pole(s) and would require a small hole(s) to be dug into the ground. The bat house structure would be mounted on top (terminal end) of the pole. The hole(s) in the ground will be approximately one foot in diameter and approximately five feet deep for each pole or base for the pole. One to two bags of dry concrete may be used in the bottom of the hole to help secure the pole or the wooden base of the pole. Material excavated from a hole would be dispersed around the local site, or would be used to refill the hole. Some structures could require up to four poles, but normally only a single pole for rocket houses, and two poles for nursery boxes would be required. There is great flexibility in the specific placement of these structures. Hand or power tools could be used during installation. Where there is easy access, a small tractor or similar type of equipment could be used to elevate the house during installation.

Setting: The proposed general locations for bat house placement have been divided into the two categories of “Forested Setting” and “Developed Sites.” Bat houses could be installed in any of the Land Use Allocations. The intent is to provide roosting structures where current deficits occur and where natural processes are unlikely to remedy the situation in the short term (30 years). Each proposed site would need to have a favorable microclimate for the box (i.e., sun exposure, open flight path).

Forested Setting: The forested setting includes most of the Coos Bay District administered land. It would include all timber types and stand ages, and the road system. Public use in this setting would be

low. Any of the installation types could be used in the forested setting. Almost all of the BLM bridges and the majority of culverts suitable for bat house placement would be in this category.

The number of bat houses per site would vary and would depend on the availability of existing roost structures, and the availability of suitable placement areas. Bridges and culverts would normally have one or two houses due to the size of the structures and the amount of area to properly mount a house. A young timber stand in a Riparian Reserve that is deficient in snags and large trees could have 2 houses per acre.

Developed Sites: Recreation sites and special recreation management areas listed in the Resource Management Plan (Table 5 pg 48, BLM 1995) are included in this category. The number of bat houses per site would vary. Bat houses would be placed away from individual campsites, picnic areas, fire rings and recreation sporting areas where they could be disturbed by human activity. Boxes would be placed in locations where bat/human interactions would be minimized. The houses would not be placed over potable water sources. In general, houses would be installed higher than 12 feet above the ground and where they would be out of human reach. Buildings and free standing bat houses would be the installation types most likely used at Developed Sites.

Proposed Sites in 2001: Sites by installation type and setting that are proposed for installation in 2001 are listed in Table 2. Appendix A contains maps showing the approximate locations for the houses at the Developed Sites.

Table 2. Proposed sites by installation type and setting for 2001.

Site Name	Legal	Installation Type	Setting
Coos River Mainline Road	T. 26S, R. 9W, Sect. 20	Bridge	Forest Setting
Coos River Mainline Road - Gaging Station	T. 26S, R. 9W, Sect. 31 NE 1/4	Bridge	Forest Setting
Junction of 25-11-28.0 and Burnt Crk. Ridge Road	T. 26S, R. 9W, Sect. 31 SE 1/4	Bridge	Forest Setting
25-11-28.0 Rd. Bridge	T. 26S, R. 9W, Sect. 31 SW 1/4	Bridge	Forest Setting
Park Creek Bridge	T. 27S., R. 10W., Sect. 4	Bridge	Forest Setting
Middle Ck - S Bridge	T. 27S, R.11W, Sect. 12	Bridge	Forest Setting
Middle Ck Rd at Alder Crk	T. 27S, R. 10W, Sect. 6	Bridge	Forest Setting
Big Creek Rd	T. 21S, R. 8W, Sect. 4	Bridge	Forest Setting
Upper Smith River Rd	T. 20S, R. 8W, Sect. 28 S ½	Bridge	Forest Setting
Devil's Club Rd.	T. 20S, R. 8W, Sect. 27	Bridge	Forest Setting
Spruce Reach Island	T. 21S, R. 11W, Sect 33	Rocket, and Nursery houses on poles	Developed Site

Dean Creek EVA	T. 22S, R. 11W, Sect 5	Rocket, and Nursery houses on poles	Developed Site
Loon Lake Campground	T. 23S, R. 10W, Sect 2	Rocket houses	Developed Site

Design Features:

- Projects would be implemented in accordance with the appropriate terms and conditions as determined through consultation with the U.S. Fish and Wildlife (USFWS).
- For site-specific locations, installation would not proceed until clearances from resource specialists are received.
- None of the installation types would require the movement of existing down wood, or the removal of trees or snags.
- The District Archaeologist will be notified at once if cultural materials are encountered.
- Any substantial changes to the Proposed Action will require further review and clearance.

CHAPTER III - ENVIRONMENTAL CONSEQUENCES

This section provides the scientific and analytic basis for comparing the No Action and Proposed Action Alternative described in Chapter II. No irreversible or irremediable commitment of resources have been identified for the alternatives. The analyses are organized by alternative. Effects are direct and indirect unless noted.

CRITICAL ELEMENTS OF THE HUMAN ENVIRONMENT

Examination has shown the following critical elements of the human environment to be *unaffected* by any of the alternatives:

Air Quality	Native American Religious Concerns
ACECs	Water Quality
ACS Objectives	Wetlands/Riparian Zones
Farmlands, Prime/Unique	Wild & Scenic Rivers
Floodplains	Wilderness

NO ACTION ALTERNATIVE

Botany, Including T&E and S&M: Special status botany species that may occur within the action area are listed in Appendix C-2 of the Coos Bay District Resource Management Plan (BLM 1995). Several

Survey and Manage botany species as listed in USDA;USDI (2001) may also be found within the District. The No Action Alternative would have no effects on botany, including T&E and S&M species because there would be no activity.

Cultural Resources: Relatively few prehistoric or paleontological sites have been identified on Coos Bay District lands, and throughout the Coast Range and Siskiyou mountains. Identified historic cultural resources include sites related to early settlement, logging and mining. The majority of the District's cultural resource sites have not been evaluated for eligibility to the National Register of Historic Places (NRHP). The No Action Alternative would have no direct effects on cultural resources because there would be no activity.

Environmental Justice: The proposed areas of activity are not known to be used by, or disproportionately used by, Native Americans, and minority or low-income populations for specific cultural activities, or at greater rates than the general population. This includes their relative geographic location and cultural, religious, employment, subsistence, or recreational activities that may bring them to the proposed areas.

Fisheries, Including T&E: Fish species that occur on the Coos Bay District are listed in the Coos Bay District Resource Management Plan (BLM 1995). Special Status fish species that occur on the Coos Bay District are the federally listed Oregon Coast coho salmon, federal candidate Oregon Coast steelhead trout and Oregon Coast cutthroat trout, and the special status Pacific lamprey, Umpqua chub and Millacoma dace. Rivers and streams comprise the majority of habitat found on the Coos Bay District for anadromous salmon and trout. The No Action Alternative would have no effect on the fisheries resource as there would be no activity.

Hazardous/Solid Wastes: The Coos Bay District Proposed Resource Management Plan and EIS (1994) lists the process for transportation, storage, and handling of hazardous materials. Activities that may involve hazardous/solid waste are subject to State of Oregon Spill Prevention, Control and Countermeasures (SPCC) (ref. OAR 340-108), which is covered in the District's Spill Plan Provisions. The No Action Alternative would have no effect on the hazardous/solid wastes as there would be no activity.

Noxious Weeds: Noxious weeds are present and scattered throughout the District and this rate of occurrence would continue under the No Action Alternative. Noxious weeds that would be expected to be subject to control methods on the District are listed in the Coos Bay District Resource Management Plan (BLM 1995).

Port-Orford-cedar: Both Port-Orford-cedar and the root disease *Phytophthora lateralis* are present and scattered throughout the Port-Orford-cedar's natural range on the District. This rate of occurrence would continue under the No Action Alternative.

Recreation: Recreation sites within the project area are listed in the Coos Bay District Resource Management Plan (BLM 1995). An opportunity for environmental/wildlife education/interpretation would be lost under the No Action Alternative. Otherwise, no direct, indirect, or cumulative effects would be anticipated on recreation resources as there would be no activity.

Wildlife, Including T&E and S&M: In the short term, there would continue to be a lack of roosting structures available for bats in both the forested and developed settings. Snag creation would occur through restoration projects which would produce some suitable roosting structures. Structures such as snags and large diameter, rough-barked trees would also develop in the reserve areas in the forested setting over time.

There would be no noise disturbance issues associated with installation of the houses. Special Status wildlife species that could be effected by noise disturbance are the northern spotted owl, marbled murrelet, and bald eagle. Other Special Status species that may occur within the area are listed in Appendix C-3 of the Coos Bay District Resource Management Plan (BLM 1995).

Survey and Manage wildlife species likely to occur within the project areas are *Megomphix hemphilli*, Del Norte salamander, and red tree vole. There would be no effects to Survey and Manage wildlife species under the No Action Alternative.

PROPOSED ACTION

Botany, Including T&E and S&M: No direct, indirect, or cumulative effects would be anticipated. Specific sites would require clearance, and could require surveys according to current protocols if habitat is present, to ensure that there are no T&E or S&M botany species present for the free-standing structures that require ground disturbance during installation. There are no known sites of Special Status botany or S&M species at the 2001 project areas.

Cultural Resources: Site specific project areas would be reviewed by an archaeologist to insure cultural and historic values would not be adversely affected. Specific sites would be field reviewed as necessary if the initial assessment identified potential concerns. There are no affected cultural resources on the proposed 2001 sites.

Environmental Justice: No disproportionately high or adverse human health or environmental effects will occur to Native Americans, minority or low-income populations as a result of the proposed action.

Fisheries, Including T & E: The free standing structures would have no effect on the fisheries resource. Also, houses that will be incorporated into new culvert designs will not have any direct impacts to T & E fisheries. While there will be an impact during the installation of the culvert itself, the bat house will be part of culvert design and so will not directly effect the fisheries resource. Bat houses intended for bridges will be installed without entering or impacting the stream channel. There will be no effects from this portion of the proposed action. As there will be “No Effect” to the fisheries resource, consultation with the National Marine Fisheries Service is not required.

Aquatic Conservation Strategy Objectives: The Proposed Action would have no effect on any of the nine ACS Objectives. Ground disturbance through installation of the free standing structures would be minimal and would not have a measurable effect on any of the Objectives.

Hazardous/Solid Wastes: No direct, indirect, or cumulative effects would be anticipated.

Noxious Weeds: A possibility exists that seeds could be spread or seed beds disturbed from the proposed activities, but there would be no cumulative impacts beyond current rates of disturbance.

Port-Orford-cedar: A possibility exists that the root disease could be spread as a result of the proposed activities, but there would be no cumulative impacts beyond current rates of disturbance.

Recreation: Ground disturbance, disturbance to visitor activities, and disturbance to wildlife during installation at the three proposed recreation sites would be minimal and of short duration. Disturbance to visual resources would also be minimal as building materials would be, for the most part, dark wood.

Some visitors may be afraid of bats. This may be especially true at Loon Lake where bat boxes would be placed closer to human activity areas because of limited space at the campground. However, the placement of the bat houses at all three sites would minimize bat/human interaction. Hence, the risk and the subsequent liability of a visitor getting bitten by a bat would be low.

Placement of bat houses could present an environmental/wildlife education/interpretation opportunity, especially at Loon Lake. Indeed, the bat house placements at Loon Lake may force the BLM, for public safety, to place interpretive signs to educate the public not to touch bats as they are wild animals and can bite in self-defense. This issue would require coordination with park personnel and would require additional funding to implement such activities.

As in all recreation areas, vandalism is a possibility, especially at Loon Lake. However, since the bat houses are in out-of-the-way places and are 12 feet above ground on a pole, the risk of vandalism should be minimal. Interpretive signs may also help minimize vandalism.

The bat boxes may help shift the present resident bat population away from the rest rooms at Loon Lake where they are roosting and toward the boxes, lessening bat/human interaction, and hence, lowering the risk and the subsequent liability of a visitor getting bitten by a bat.

Maintenance of bat boxes would increase the maintenance burden of recreation or wildlife personnel.

Wildlife, Including T&E and S&M:

General: There are 12 species of bats that could occur within the District (Table 1) and bats have been observed throughout the District (BLM 2000). Bat houses could increase the number of bats at a site, and could provide roosting opportunities in site specific areas that were unsuitable to bats before installation of houses. Bat house placement however would not expand any species range. Bats may travel less than 0.6 miles, and up to 25 miles between roosting and foraging sites, depending on species (FEMAT 1993). Little brown myotis and big brown bats have been observed foraging 1.3 to 3.1 miles, and up to 2.5 miles, respectively, from day roosts (FEMAT 1993).

Special Status wildlife species that could be effected by noise disturbance from the Proposed Action are the northern spotted owl, marbled murrelet, and bald eagle. Other Special Status species that may occur within the project areas are listed in Appendix C-3 of the Coos Bay District Resource Management Plan (BLM 1995). Site specific projects would require wildlife clearance before installation to ensure compliance with the Endangered Species Act and the Bureau's Special Status Species Policy.

Survey and Manage wildlife species likely to occur within the project areas are *Megomphix hemphilli*, Del Norte salamander, and red tree vole. Specific sites would require clearance to ensure that there are no Management of Known Sites requirements for *Megomphix hemphilli* or the Del Norte salamander for the free-standing structures that require ground disturbance during installation. Red tree vole surveys would not be required as no trees would be cut under any of the installation types.

An increase in bat numbers would have a beneficial impacts in decreasing insect levels. All bats in the Pacific Northwest are insectivores. Bats found in Oregon consume approximately their own body weight in insects per night. In the case of biting insects, the little brown myotis is capable of eating approximately 1,200 mosquito sized insects per hour per individual (BCI 1996). Assuming a bat house would provide habitat for a small colony of 10 bats, which could forage for about 3 hours per night, they could consume approximately 36,000 insects per evening, within range of their roost sites.

2001 sites - General: Bats have been observed at the Loon Lake Campground, Dean Creek EVA, and Spruce Reach Island so placement of boxes would be at sites where bats are known to roost. The bridges proposed for bat house installation are listed in Keeley's (1998) survey of Coos Bay District bridges.

Threatened or Endangered Species at the 2001 sites:

Bridge sites in 2001: Use of power tools to install the houses on bridges would create a low noise level that would not be louder than ambient levels of road traffic and would be a No Effect for disturbance for the northern spotted owl, marbled murrelet, and bald eagle.

Recreation Sites in 2001: Use of power tools/equipment to install free standing houses at Dean Creek EVA, and Loon Lake would create a low noise level that would not be louder than ambient levels and would be a No Effect for disturbance for the northern spotted owl, marbled murrelet, and bald eagle. The Dean Creek EVA bat houses would not be within 0.25 miles of the occupied marbled murrelet stand.

For Spruce Reach Island, no power tools/equipment can be used from February 15 to July 31 within the great blue heron rookery buffer (BLM 1995). The project would be a no effect for the northern spotted owl and bald eagle. The project would be a "may affect not likely to adversely affect" for noise disturbance for the marbled murrelet if power tools/equipment are used during installation. This moderate duration, moderate noise project type was included in the FY96-2002 programmatic projects in the District's Biological Assessment C96-01b. The U.S. Fish and Wildlife concurred with this determination and granted incidental take for disturbance in their Biological Opinion (#1-7-98-F-079). To be in compliance with the Biological Opinion the following seasonal and daily timing restrictions must be applied: no power tools/equipment can be used from April 1 to August 6 on the island. In addition, from August 6 to September 15 work will occur no earlier than 2 hours after sunrise and no later than 2 hours before sunset for equipment that will create noise above ambient levels.

Survey and Manage Wildlife Species at the 2001 sites: There are no known sites of *Megomphix hemphilli* or Del Norte salamander at the 2001 project areas. No other Survey and Manage wildlife species would be effected, and no other protocol surveys are required.

CHAPTER V - LIST OF AGENCIES, ORGANIZATIONS AND INDIVIDUALS CONTACTED

The names of agencies, organizations and individuals contacted for their comments on the proposed action are listed in the public involvement section of the Analysis File.

The following individuals were consulted on and participated in the preparation of this environmental assessment:

Aimee Hoefs	Umpqua Field Office Fisheries Biologist
Estella Morgan	Umpqua Field Office Botanist
Larry Johnston	Umpqua Field Office Park Ranger
Scott Knowles	Umpqua Field Office Noxious Weeds, Environmental Justice, S&M Mollusk, and POC Coordinator
Steve Samuels	Coos Bay District Archeologist
Tim Votaw	Coos Bay District Hazardous Materials Specialist
Don Porior	Coos Bay District Engineer
Steve Langenstein	Myrtlewood Field Office Wildlife Biologist
Kathy Wall	Umpqua Field Office Wildlife Biologist and Team Lead

LITERATURE CITED

Adam, M.D., and J.P. Hayes. 2000. Use of bridges as night roosts by bats in the Oregon Coast Range. *J. of Mammalogy* 81:402-407.

Arnett, E.B., and J.P. Hayes. 2000. Bat use of roosting boxes installed under flat-bottom bridges in western Oregon. *Wildl. Soc. Bull.* 28(4):890-894.

Bat Conservation International, Inc. 1996. *Bats of America - essential allies*. Pamphlet. Austin, Texas.

Bat Conservation International, Inc. 2001. Answers to questions about bats and rabies. [online] URL: <http://www.batcon.org/discover/rabies.htm>.

Bureau of Land Management. 1994. *Coos Bay District Proposed Resource Management Plan and Environmental Impact Statement*. Coos Bay District, BLM. North Bend, OR.

Bureau of Land Management. 1995. Coos Bay District Record of Decision and Resource Management Plan. Coos Bay District. BLM, North Bend, OR. (ROD/RMP).

BLM. 2000. Wildlife Sightings Database. Coos Bay District.

Csuti, B., et al. 1997. Atlas of Oregon wildlife: distribution, habitat, and natural history. Oregon State University Press. Corvallis, Oregon.

Forest Ecosystem Management: an Ecological, Economic, and Social Assessment (FEMAT). 1993. USDA and USDI. Portland, OR.

Holthausen, R.S. et al. 1994. Appendix J2: Results of additional species analysis for: FSEIS on management of habitat for late-successional and old-growth forest related species within the range of the northern spotted owl. USDA and USDI.

Keeley, B. 1998. Bat use of bridges - Bureau of Land Management, Coos Bay District. Bat Conservation International, Inc. Austin Texas.

Tuttle, M.D. 1988. America's neighborhood bats. University of Texas Press. Austin, Texas.

Tuttle, M.D., and D.L. Hensley. 1993. The bat house builder's handbook. Bat Conservation International, Inc. Austin, Texas.

U.S. Department of Agriculture, U.S. Department of the Interior. 1994a. Final supplemental environmental impact statement on management of habitat for late-successional and old-growth forest related species within the range of the northern spotted owl. Forest Service, Bureau of Land Management. Portland, Oregon.

U.S. Department of Agriculture, U.S. Department of Interior. 1994b. Record of Decision for amendments to Forest Service and Bureau of Land Management planning documents within the range of the northern spotted owl. Forest Service, Bureau of Land Management. Portland, Oregon.

U.S. Department of Agriculture, U.S. Department of Interior. 2001. Record of Decision and Standards and Guidelines for amendments to the Survey and Manage, Protection Buffer, and other Mitigating Measures Standards and Guidelines. Forest Service, Bureau of Land Management. Portland, Oregon.