



## Technical Appendix 10- Wildlife along the corridor

### Wildlife issues:

There are three wildlife issues within the easement included below. Identifying these issues could lead to some measures to reduce the negative impact on wildlife species.

**Habitat Loss.** Most habitat loss will occur as a result of road relocations within the easement, some of which are at Chronic Environmental Deficiency sites. There is little that can be done to minimize habitat loss as a result of the need to relocate sections of the road due to river migration or to improve highway safety, as long as the new road location is determined considering long-term stable road locations, which avoids multiple relocations through time. One recommendation is to address this issue by working to relocate road sections only where the new road location is stable to avoid multiple relocations.

**Habitat fragmentation.** The current two-lane road has some impact on movement of animals, but this is likely small. Since the easement does not allow adding lanes, which would have a much greater reduction of animal movement, there is no known current need for wildlife crossing structures. Some of the activities that are expected to occur within the easement to improve fish passage (replacing culverts with bridges) will also allow greater wildlife passage because animals deterred from crossing a highway where they are exposed to predators are more likely to traverse under a bridge. It is valuable to recognize this benefit when developing and reconstructing projects.

**Direct mortality.** Considering the activities that are expected to occur in the easement, direct mortality will have the greatest impact on wildlife. We are not aware of any sites where wildlife species are repeatedly struck by vehicles.

**Habitat considerations.** Cutting hazard trees and other vegetation for road relocations can result in the mortality of eggs or young of nesting birds if the vegetation is cut during the nesting season. Although emergency repairs during the spring and summer months can not be delayed to avoid direct mortality of nesting birds, cutting hazard trees and vegetation for planned road relocations could occur during the late summer through winter to avoid direct mortality to nesting birds. Where possible, the timing of vegetation cutting could avoid resulting the direct mortality of eggs and nestlings.

Direct mortality of wintering birds can be high in years when snow cover is persistent and sand or salt is used to improve vehicle traction on the highway. Large numbers of wintering birds were killed in vehicle collisions on this section of SR 542 during the winter of 2007/2008. Birds congregate along plowed roads in the winter to access grit and vehicles traveling at highway speeds often collide with birds, sometimes killing large numbers. There are currently no known solutions to the impact of sand and salt on bird mortality.

### Implementation strategies:

- Suggest minimizing habitat loss by relocating roads in long-term stable locations that will not require multiple road relocations.
- Recognize that replacing culverts with bridges will improve the movement of some wildlife species.

### Wildlife identified along the corridor

Fish and wildlife habitat are areas necessary for the survival of sensitive species. They contain the basic elements of the ecological function of the physical landscape. To



protect this habitat, efforts must preserve existing habitat corridors and minimize impacts to habitat areas. The following is a listing of known findings in the area as noted by Whatcom County.

### ***Animals***

An animal habitat is broadly defined as an area containing water, food, shelter and space in sufficient quantity and quality to maintain a stable population of animal species. Habitats in the Mount Baker Area can be grouped into the following:

- Forests;
- Riparian woodlands adjacent to ponds, streams, and wetlands;
- Shrubs and thickets;
- Freshwater aquatic areas including streams, ponds, bogs and marshes

Each of these habitats contains a vast number of species of mammals, amphibians, reptiles, birds and, in the case of freshwater aquatic habitats, fish. Many species cross over habitats.

### **Forest habitat**

**Mammals:** opossums, shrews, moles, bats, snowshoe hares, mountain beaver, Townsend's chipmunks, Douglas' squirrels, northern flying squirrels, beaver, mice, voles, porcupines, skunks, black bears, weasels, raccoons, coyotes, red foxes, bobcats, mountain lions, blacktailed deer and elk.

**Amphibians and reptiles:** newts, salamanders, western toads, rubber boa and Pacific treefrogs

**Birds:** hawks, bald eagles, osprays, falcons, grouse, owls, band-tailed pigeons, swifts, nighthawks, humming birds, woodpeckers, flycatchers, swallows, ravens, jays, crows, chickadees, bushtits, nuthatches, brown creepers, dippers, wrens, robins, thrushes, bluebirds, kinglets, waxwings, starlings, vireos, warblers, orioles, brown-headed cowbirds, western tanagers, grosbeaks, finches, siskins, towhees, red crossbills, juncos and sparrows.

### **Riparian woodland habitat**

**Mammals:** opossums, shrews, moles, bats, snowshoe hares, eastern cottontails, squirrels, beaver, mice, wood rats, voles, muskrats, black bears, weasels, minks, river otters, skunks, coyotes, red foxes, bobcats, mountain lions, deer and elk.

**Amphibians and reptiles:** northern alligator lizards, garter snakes, salamanders, newts, toads and frogs.

**Birds:** hawks, eagles, kestrels, killdeer, snipes, grouse, mourning doves, owls, hummingbirds, flickers, woodpeckers, kingbirds, kinglets, water pipits, Townsend's solitaires, blackbirds, cedar waxwings, starlings, vireos, warblers, orioles, cowbirds, grosbeaks, buntings, finches, pine siskins, goldfinches, towhees, juncos and sparrows.

### **Shrub and thicket habitat**

**Mammals:** opossums, moles, hares, cottontails, mountain beaver, chipmunks, wood rats, porcupines, black bears, raccoons, weasels, skunks, coyotes, red foxes, bobcats, mountain lions, deer and elk.

**Reptiles and amphibians:** northern alligator lizards, garter snakes, salamanders, toads and frogs.

**Birds:** Ring-necked pheasants, swallows, chickadees, bushtits, wrens, warblers, cowbirds, buntings, towhees, juncos, and sparrows.



### **Disturbed land habitat**

**Mammals:** opossums, shrews, moles, bats, cottontails, mountain beaver, gophers, beaver, skunks, wood rats, voles, mice, weasels, coyotes, red foxes and deer.

**Reptiles and amphibians:** garter snakes, western toads, Pacific treefrogs and bull frogs.

**Birds:** hawks, grouse, quail, pheasants, killdeer, gulls, doves, owls, nighthawks, hummingbirds, flickers, woodpeckers, kingfishers, phoebes, larks, swallows, martins, jays, ravens, crows, chickadees, bushtits, wrens, robins, thrushes, kinglets, pipits, waxwings, starlings, warblers, meadowlarks, blackbirds, cowbirds, grosbeaks, finches, siskins, goldfinches, towhees, sparrows and juncos.

### **Freshwater aquatic habitat**

**Mammals:** opossums, shrews, moles, bats, cottontails, mice, voles, beaver, muskrats, porcupines, black bears, raccoons, weasels, minks, otters, skunks, coyotes, red foxes, bobcats and deer.

**Reptiles and amphibians:** painted turtles, garter snakes, salamanders, newts, western toads and frogs.

**Birds:** herons, geese, ducks, eagles, falcons, ospreys, marsh hawks, coots, rails, plovers, killdeer, snipes, sandpipers, phalaropes, gulls, terns, kingfishers, swallows, crows, dippers, marsh wrens, pipits, yellowthroats and blackbirds.

**Fish:** pink, Chinook, coho, chum and riverine sockeye salmon, searun cutthroat trout, Dolly Varden, steelhead, rainbow, cutthroat and brook trout, and kokanee.

Fish of particular concern in the Foothills Subarea is the welfare of salmonid species that historically run in the subarea's river and streams. In 1999, the Washington State Legislature passed the Forests and Fish Law to address salmon recovery in Washington state. The Whatcom County non-profit Nooksack Salmon Enhancement Association (NSEA), the Lummi Nation and the Nooksack Tribe have implemented many programs and projects to enhance salmon populations, in this area.

Two species are particularly identified in the *WRIA 1 Salmonid Recovery Plan* of June 2005: Chinook salmon (*Onocorhyncus tshawytscha*) and Bull Trout (*Salvelinus confluentus*). These species are both listed as threatened with extinction under the federal Endangered Species Act. The *WRIA 1 Salmonid Recovery Plan* has listed specific projects and techniques that are included, by reference, in this plan.



# NOOKSACK BASIN Watchable Wildlife Sites

