form probably occurs the following spring. Mature frogs eat a variety of insects, mollusks, crustaceans, and other invertebrates (Turner 1959). Nussbaum et al. (1983) reported that spotted frog habitat includes marshy edges of ponds, lakes, and slow moving streams. In southwest Idaho Munger et al. (1994) observed that adult spotted frogs used creeks with slow water, oxbows, and ponds and generally were found at sites with sandy bottoms and submerged vegetation. Munger et al. (1996) found that larval habitat has mud bottoms, warmer water temperature, and some hiding cover.

Spotted frogs are currently designated as a candidate species (information indicates that listing as threatened or endangered would be appropriate) south of the Snake River with a downward trend (Fish & Wildlife Service 1996). Spotted frogs had been classified as a C2 species north of the Snake River with an upward trend (Fish & Wildlife Service 1994a). The distribution south of the Snake River is poorly documented, however, recent inventories have shown that spotted frogs are present in several drainages in southwest Idaho (Munger et al. 1996). In the Jarbidge Resource Area spotted frogs have not been documented. However, the bulk of the riparian zones have not been surveyed. There are reports of spotted frogs occurring in Salmon Falls Creek in Nevada (McDonald and Marsh 1995) and in the adjacent Humbolt National Forest (McNeill pers. comm.).

Western Toad

Western toad (*Bufo boreas*) color varies from greenish to brown with a cream colored strip down the middle of the back with numerous swollen glands (warts) on the back and sides (Groves 1989). Adult western toads are largely terrestrial and may hibernate in terrestrial situations (Nussbaum et al. 1983). Western toad are diets composed invertebrates mainly flying insects. Breeding occurs from February at low elevations to July at high elevation (Groves 1989). Toads mate in water and use spring pools, ponds, lake shallows and slow moving portions of streams (Nussbaum et al. 1983) and may prefer mud bottoms in the breeding habitat. Females lay eggs in two gelatinous strands that may become entangled with each other and vegetation. Nussbaum et al. (1983) reported that tadpoles appear to seek out warmer water which may speed up development. Adults reach maturity in 2 to 3 years and may live several more years.

Munger et al. (1996) documented 2 adult western toads in the Owyhee Mountains and McDonald and Marsh (1995) found western toads in the Tuana Gulch and Yahoo Creek drainages. No eggs or tadpoles for western toads were reported in either inventory effort. Like the leopard frog, western toads are designated as sensitive by the Bureau of Land Management and a species of special concern by the Idaho Department of Fish and Game (Conservation Data Center 1994).

* * * * * * * * * * * * * * * * *

Some populations of amphibians are believed to be declining worldwide (Wyman 1990). Declines have been documented in the tropics as well as more temperate areas. Hypothesized causes of the amphibian declines include: increased ultra-violet radition due to decreases in the ozone layer; climatic change; pollution (pesticides, acid rain, etc.); loss of habitat and habitat fragmentation; and the introduction of exotic species including fish and other amphibians (Munger et al. 1996). In the Idaho declines in several formerly common amphibian species have resulted in them being designated as species of special concern by the Idaho Department of Fish & Game including the western toad, spotted frog, and northern leopard frog (Conservation Data Center 1994). The spotted frog and tailed frog have been petitioned for listing under the Endangered Species Act, and were classified as Candidate species by the Fish and Wildlife Service (1994a). The Idaho Herpetological Society rates amphibians and reptiles based on recent surveys for species in areas where they were historically found. Idaho State University maintains a data base for all Idaho amphibians and reptiles.

REPTILES

Mojave Black-collared Lizard

Mojave black-collared lizard (*Crotaphytus bicinctores*) is a brightly colored, large headed lizard, with distinctive neck markings (alternating black, white, black bands) (Groves 1989). The base color of black-collared lizards is chocolate brown with light flecks (Groves 1989). Their diet is quite varied and includes: flowers, leaves, and any animal smaller than themselves including other lizards (Nussbaum et al. 1983). Andre and MacMahon (1980) reported that Mojave black-collared lizards breed in (April) May and June. Females lay eggs (3-8) in either sandy soil, rodent burrows, or under large rocks in June-July (Nussbaum et al. 1983). Black-collared lizards occupy arid, rocky canyons that are sparsely vegetated (Groves 1989), however, Diller and Johnson (1982) found that most black-collared lizards were near canyon rims. Typically, males are found in dispersed groups during the breeding season. Vegetation along the rims included sagebrush, winterfat, and shadscale communities (Diller and Johnson 1982). Nussbaum et al. (1983) wrote that black-collared lizards was found only in areas with boulders or piles of rocks and frequented talus slopes at the base of cliffs, but black-collared lizards did not climb well.

Nussbaum et al. (1983) and Groves (1989) depict the distribution of black-collared lizards primarily along the Snake River Canyon from the Oregon stateline to near Hammett. The current information suggests that black-collared lizards maybe limited to lower elevations as well as sparsely vegetated rocky habitat in Idaho. Southern Idaho is the northern extension of the range of the Mojave black-collared lizard (Nussbaum et al. 1983). This species has been on the sensitive species list for a number of years (Conservation Data Center 1990, 1992, and 1994). Black-collared lizards have only been documented in the Bruneau River Canyon southeast of Hot Creek in the Jarbidge Resource Area.

Longnose Snake

Longnose snake (*Rhinocheilus lecontei*) is a slender medium-sized snake (20 - 41 inches) with dark (brown to black) blotches interspersed with bands of red, orange or yellow (Groves 1989). The head has a long pointed snout and the lower jaw is shorter than the upper jaw which is possibly an adpation for burrowing (Nussbaum et al. 1983). Nothing is known about reproduction of longnose snakes in Idaho, however, in other areas females lay 5-8 eggs in July which hatch in late August (Nussbaum et al. 1983). Long-nose snakes prey primarily on lizards and small mammals. Longnose snakes are active at twilight and throughout the night, usually entering burrows during the day (Nussbaum et al 1983). Diller and Wallace (1981) and Diller and Johnson (1982) reported that longnose snakes are found in most habitats, but seem to be more common south of the Snake River. Beck and Peterson (1995) found that sandy to sandy loam soils, burrows and shrub cover were common factors in microhabitats used by longnose snakes. Beck and Peterson (1995) did not find longnose snakes in annual

grasslands.

The distribution of the longnose snake is primarily in the Snake River Canyon between Glenns Ferry and Oregon (Groves 1989). Southern Idaho is at the northern edge of the longnose snake's geographic range. In the Jarbidge Resource Area this species has been documented in Bruneau Arm and Bruneau Dunes State Park areas. The current status of the longnose snake is a species of special concern for the Idaho Department of Fish and Game and sensitive to the Bureau of Land Management (Conservation Data Center 1994). Longnose snakes have been a sensitive species for a number of years (Conservation Data Center 1990 and 1994).

Western Ground Snake

Western ground snake (*Sonora semiannulata*) a small (8 to 19 inch) noctural snake that has two color phases in Idaho (Groves 1989). Nussbaum et al. (1983) indicates that the orange and black banded phase occurs at about the same rate as the unbanded phase. Groves (1989) comments that unbanded western ground snakes may be a uniform olive, gray, tan or reddish or have a broad pink to red stripe down the back. Nussbaum et al. (1983) writes that ground snakes have shallow grooves on the outsides of their rear teeth and speculates that they may be mildly venomous. Diller and Johnson (1982) report that ground snakes are moderately fossorial (dwell underground). In addition to being fossorial, western ground snakes are more active in the night than the day. Essentially, nothing is known about their reproductive habits in Idaho. Nussbaum et al. (1983) and Groves (1989) write that ground snakes occur in desert areas with sandy soil, however, Diller and Wallace 1981) reported ground snakes were only found in or adjacent to talus slopes in the Snake River Canyon. Western ground snakes eat a variety of burrowing or burrow dwelling arthropods (centipedes, millipedes, spiders, and insects).

The distribution of western ground snakes is in the Snake River Canyon from near Hammett downstream and the lower part of the Bruneau River Canyon (Diller and Wallace 1981, Nussbaum 1983). The majority of the observations have been between C.J. Strike Reservoir and Swan Falls Dam. The geographic range of this species extends into southern Idaho (Nussbaum et al. 1983). Presently, the western ground snake is rated as a species of special concern by the Idaho Department of Fish and Game and sensitive by the Bureau of Land Management (Conservation Data Center 1990, 1992, and 1994). In the Jarbidge Resource Area western ground snakes have been confirmed in the Buneau Sand Dunes area.

Birds

Bald Eagle

Bald eagle (*Haliaeetus leucocephalus*) is a large raptor (31-37 inches, 75 to 94 cm), with the mature adults having the distinctive yellow bill, white head and tail with a dark brown to black body. The bald eagle is the only North American member of the fish or sea eagles (Fish & Wildlife Service 1995c). Juveniles and young to about 2 years of age are generally dark (Harmata 1989). Between the 2nd and 4th year, more white appears in the tail feathers (starting near the body), head, and belly (Johnsgard 1990). On the immatures any white plumage is usually duller and the feathers have dark tips (Johnsgard 1990). Courtship varies with location and has been observed in the fall, late winter and spring (Harmata 1989) which coincides with nesting buildling and repair. Two eggs are laid in the stick nests from late February (March) to April (Harmata 1989). Bald eagles incubate the eggs for about 5 weeks and the young fledge at 11-14 weeks (Johnsgard 1990). Bald eagle prey selection is determined largely by availability (Peterson 1986). Bald eagles in the winter forage on fish, waterfowl (Lingle and Krapu 1986; Isaacs and Anthony 1987, Keister et al. 1987), small mammals (Johnsgard 1990) and carrion (Peterson 1986). During the fall and winter bald eagles may congregate in foraging areas when food is abundant (Keister et al. 1987; Crenshaw and McClelland 1989) or at communal roosts (Keister et al. 1987; Crenshaw and McClelland 1989). Bald eagles also forage or roost alone during the winter.

Bald eagles are known to winter in the C.J. Strike area along the Snake River. There are no known nest sites for this species within at least 15 miles of the Bruneau area. The nearest known occupied nesting habitat occurs along the South Fork of the Boise River. Fish and waterfowl are much more abundant along the Snake River than inland in the Jarbidge Resource Area. Because of the lack of native range, particularly sagebrush, jackrabbit numbers are low. Ground squirrels and other rodents are present during the summer, but are usually hibernating during the winter. Big game, mule deer and antelope numbers in the area are also low. There are no known communal roosts for wintering bald eagles in the Jarbidge Resource Area. The majority of the wintering eagles observed along the Snake River in the Jarbidge Resource Area are single or pairs of adults.

Originally, the Bald Eagle Protection Act was passed in 1940 to protect bald eagles. Subsequent legislation first listed bald eagles as endangered under the Endangered Species Preservation Act in 1966 and protection continued as the bald eagle was listed as endangered under the Endangered Species Act in 1973 (Fish & Wildlife Service. 1995c). Idaho is in the Pacific region recovery area. The Pacific Region reported 1,192 occupied territories in 1994 (Fish & Wildlife Service 1995c). In July 1995, the Fish and Wildlife Service lowered the classification of the bald eagle from endangered to threatened based upon an increase of bald eagle pairs in the lower 48 states from 417 in 1963 to 4,452 in 1994 (Fish and Wildlife Service 1995c).

Currently, the only threat to bald eagles in the Jarbidge Resoure Area is shooting.

Ingestion of lead shot by eagles eating wounded waterfowl may be a potential problem. Power lines particularly in the Snake River Canyon area have been modified to prevent electrocution. Historic threats, such as the use of poison bait and DDT, have been eliminated.

Peregrine Falcon

Peregrine falcon (*Falco peregrinus*) adults are a deep gray on the back with a nearly black helmet, nape, and moustache stripe or wedge to below the eye (Langelier 1989). Juveniles have dark brown plumage rather than the gray ofn the adults (Craig 1986). The breast and belly are cream to buff marked with horizontal bars (Craig 1986). Males have fewer markings on the upper part of the breast than do the females (Langelier 1989). Maturity is reached by the second year (Johnsgard 1990). Males establish and begin defending territories in March (Langelier 1989) with courtship starting soon to several weeks later (Craig 1986). Nests are small depressions on shelf, ledge, or pothole located on a tall cliff with an overhang that protects the nest (Johnsgard 1990). Nest locations usually provide protection from solar radiation and driving rain and may be situated in areas where there is ready access to water (Grebence and White 1989). The clutch size averages 3-5 eggs which usually hatch in May (Craig 1986) and the young fledge in about 7 weeks, but the adults may continue to feed them for several more weeks (Craig 1986). The young begin making their own kills two to four weeks after fledging and are likely to be self-supporting after six weeks (Craig 1986). Peregrine falcons feed primarily on other birds including shorebirds, pigeons, doves, robins, jays, swallows, flickers, and less frequently waterfowl (Craig 1986). Peregrines are migratory in the northern portion of their range including Idaho (Saab and Groves 1992).

Only one peregrine falcon sighting has been substantiated in the Jarbidge Resource Area in the past 5 years. An individual reported reported a pair nesting in Salmon Falls Creek Canyon upstream of the reservoir in 1992. A field check revealed a pair of peregrines in courtship flights, however, no nest was ever confirmed. Nests of prairie falcons, golden eagles, American kestrels, red-tailed hawks, and great horned owls were documented in this portion of Salmon Falls Creek Canyon. Field checks in the same are since 1992 have not resulted in any peregrine falcon sightings. There have been two reports from kayakers and rafters of peregrine falcons in the Jarbidge and Bruneau River Canyons. However the limited access into the canyons, the lack of specific geographic locations, and delays in the BLM receiving the reports has kept any these sighting from being verified.

Peregrine falcons were first listed as endangered under the Endangered Species Conservation Act in 1969 and were subsquently listed as endangered under the Endangered Species Act in 1973. Idaho is in the Rocky Mountain/Southwest population recovery area and its goal was to have 17 breeding pairs (Fish & Wildlife Service 1995d). Through the recovery of natural populations and the release of captive bred young the populations have recovered to some extent. The Rocky Mountain/Southwest area has exceeded it population target of 376 pairs and the population consists of 559 pairs of peregrine falcon (Fish & Wildlife Service 1995d). According to the Fish & Wildlife Service (1995d) Idaho has not yet achieved its

target of 17 nesting pairs. The ban on DDT and restrictions on the use of organophosphate pesticides has further enhanced the recovery of peregrine falcons. The Fish and Wildlife Service (1995d) has recommended that the peregrine falcon's status be downgraded from endangered to threatened. No current threats to this species species have been identified.

Ferruginous Hawk

Ferruginous hawk (*Buteo regalis*) are known the largest Buteo hawk in United States (Johnsgard 1990). Like other *Buteo* hawks, this species has color phases or morphologies. Light phase ferruginous hawks are generally light in appearance when viewed from below, except for some dark patches in the wrist area of the wing, dark tips of the wing primaries, and a reddish "V" formed by the legs. The dark phase has a whitish tail, dark body, and under wing coverts. The primaries and secondary feathers are white, but the tips of the primary feathers are dark.

Ferruginous hawks exhibit fairly strong fidelity to nest sites between years (Johnsgard 1990). Ferruginous hawks are migratory in Idaho (Saab and Groves 1992) and arrive in March and depart by mid-October. There are some sightings of ferruginous hawks in the winter, suggesting that a few may be year round residents. In Idaho and Utah ferruginous hawks nest in trees, on the ground and on artificial structures (Woffinden and Murphy 1983). Ferruginous hawks lay 3 to 6 eggs and have been known to fledge up to 5 young (White and Thurow 1985). Ferruginous hawks seem to be sensitive to disturbance mid-March to early May and may abandon the nest (Howard and Wolfe 1976). Howard and Wolfe were referring to heavy equipment use (i.e. chaining junipers) as disturbance. White and Thurow (1985) found that vehicles and the approach of humans were adequate disturbance to cause nest abandonment. White and Thurow (1985) also observed that cattle rubbing on nest trees did not appear to result in any nests being abandoned.

Ferruginous hawks has been designated as a C2 species for a over 10 years, most recently in 1994 (Fish & Wildlife Service 1992b, 1994a). In 1992 the Fish & Wildlife Service (1992b) evaluated a petition to list the ferruginous hawk as endangered and determined that the petitioner did not present substantial information to warrant listing. In the Jarbidge Resource Area ferruginous hawks appear to be widely scattered, with most of the nests located in isolated junipers. Data in the Jarbidge Resource Area shows that not all of the active nests are used each year and the ferruginous hawks may use alternative nests within the same general nesting territory.

Threats to ferruginous hawks include shooting, large scale wildfire which reduces sagebrush habitat which seems to support higher prey densities and destroys nest trees. Because human disturbance, particularly from March to mid-May may result in nest abandonment, care should be taken when monitoring nests for activity and nest success. By scheduling project work for other times of the year (after mid-June) or rerouting proposed projects more than 0.25 miles from nest sites, these human impacts can be minimized.