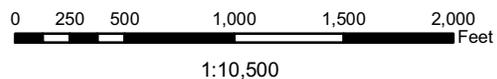


*Data source is the Idaho
Vegetation and Land Cover
Classification 9/21/98.

Figure 3.2-1. Vegetation



**Three Rivers Stone Quarry
L & W Stone**



3.2.2 Special Status Plant Species

The BLM conducted several project-specific special status plant inventories at the quarry between 1988 and 2002. No Idaho BLM special status plant species were found during these surveys. However, populations of special status plants occur near the quarry, and potentially in the Proposed Project Area (see Table 3.2-2). Due to ongoing mining activity at the quarry and the increase in surface areas covered by waste rock, it is unlikely that any special status plant species have become established in the expansion area since the inventories were completed. An additional survey of areas that have not been previously disturbed and that are proposed for mining (mineral exploration, new pits, roads, etc.) will be completed in spring of 2008, prior to the release of the Final EIS.

Table 3.2-2. Special Status Plant Species Potentially Occurring Within or In the Vicinity of the Project Area.

Common Name	Scientific Name	Status ¹	Habitat Requirements/ Associations	Likelihood of Occurrence
Lemhi milkvetch	<i>Astragalus aquilonius</i>	BLM Type 2	Most abundant on gentle slopes near Challis, ID, but also on steep erosive slopes and in washes; generally south-facing and dry.	High likelihood of occurrence within or near the Proposed Project Area (Elzinga 2006)
Wavy-leaf thelypody	<i>Thelypodium repandum</i>	BLM Type 3	Moderate to steep, unstable rocky south-facing slopes with sparse associated vegetation (bunchgrass and perennial forbs) or in washes between 4,900 and 7,000 feet.	High likelihood of occurrence within or near the Proposed Project Area (Elzinga 2002 and 2006)
Challis crazyweed	<i>Oxytropis besseyi</i> var. <i>salmonis</i>	BLM Type 3	Sagebrush and salt desert shrub in sandy washes or open slopes of rocky volcanic soil.	High likelihood of occurrence within or near the Proposed Project Area (Elzinga 2006)
Challis milkvetch	<i>Astragalus amblytropis</i>	BLM Type 3	Steep erosive slopes, sparsely vegetated, south-facing, and dry. Along the Salmon River from Clayton to Salmon, Idaho.	Good chance of occurrence within or near the Proposed Project Area (Elzinga 2002 and 2006)
White eatonella	<i>Eatonella nivea</i>	BLM Type 4	Sparsely vegetated grasslands, mid-elevation desert.	Could occur, but little is known about this wide-ranging species due to survey difficulty (Elzinga 2006). Historical records in the Salmon Area.

Table 3.2-2. Special Status Plant Species Potentially Occurring Within or In the Vicinity of the Project Area.

<p>¹ BLM special status species. (Source: Idaho BLM Special Status Plant Species list for Districts and Field Offices (from BLM website [http://www.id.blm.gov/information/sss/FINAL PLANT LIST.pdf], accessed 10/10/06)).</p> <ul style="list-style-type: none">– BLM Type 2: Range wide/global imperilment species: includes species that are experiencing significant declines throughout their range with a high likelihood of being listed under the Endangered Species Act in the foreseeable future due to their rarity and/or significant endangerment factors.– BLM Type 3: Regional/state imperilment species: includes species that are experiencing significant declines in population or habitat and are in danger of regional or local extinctions in Idaho in the foreseeable future.– BLM Type 4: Species of Concern: includes species that are generally rare in Idaho with currently low endangerment threats.
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3.2.3 Fish and Wildlife

This section summarizes fish and wildlife resources in the vicinity of the Proposed Project Area. The sources of information includes published literature, unpublished IDFG data on big game and game birds, the BLM sensitive species list from the Challis Field Office (CFO), BLM Wildlife Database, and interviews with BLM and IDFG biologists familiar with the area. Fish and wildlife are divided into the following subsections: big game, upland game, furbearers, non-game birds, small mammals, and fish.

Big Game

Big game species such as mule deer (*Odocoileus hemionus*), elk (*Cervus elaphus*), and American pronghorn antelope (*Antilocapra americana*) are present seasonally in the vicinity of the Proposed Project Area. The quarry is located within BLM designated mule deer crucial winter range (USDI-BLM 1999). Crucial winter range is seasonal habitat that is a determining factor in a population's ability to maintain and reproduce itself at a certain level (theoretically at or above population objectives).

Mule Deer

Mule deer are widespread and abundant throughout the state, occupying nearly all habitats in Idaho from dry, open country to dense forests. They prefer rocky, dense brush areas, open meadows, open pine forests, and wildfire burned areas (Brown 1992). Mule deer also can be found in coniferous forests, shrub steppe, chaparral, and grasslands with shrubs. Mule deer are often associated with early successional vegetation or vegetation resulting from disturbance, especially near agricultural lands.

Mule deer migrate from high mountainous country to lower valleys and foothills during late fall to avoid heavy snow. Big game winter habitat in western North America is defined as south facing areas on mild to medium slopes (Thomas 1979, Hoover and Willis 1987). Lower elevation habitat becomes very important during severe winters when deer try to avoid deeper snow, which can hamper their abilities to find forage and can quickly deplete their necessary fat reserves.

During winter months, mule deer browse on a wide variety of woody plants when snow covers many grasses and forbs. Common browse plants include bitterbrush (*Purshia tridentate*), sagebrush, aspen (*Populus tremuloides*), dogwood (*Cornus spp.*), juniper (*Juniperus spp.*) and Douglas-fir (*Pseudotsuga menziesii*). They graze on various grasses and forbs heavily during spring, summer and fall, and to a lesser extent, on woody browse. They also forage in irrigated fields during winter and spring.

The existing quarry and the proposed expansion area are located within mule deer “crucial” winter range, as defined in the 1999 Challis Resource Management Plan (RMP; USDI-BLM 1999) (Figure 3.2-2). The Proposed Project Area makes up less than 1 percent of the crucial winter range along the Salmon River and East Fork Salmon River, as mapped in the RMP (Map 32). Mule deer sign was observed by the consultant during a site visit in November 2006. The quarry is within IDFG Hunt Unit 36A. Mule deer harvest statistics for this Hunt Unit between 2000 and 2005 are shown in Table 3.2-3.

**Table 3.2-3. Total Mule Deer Harvest in Hunt Unit 36A (any weapon)
Between 2000 and 2005.**

	2000	2001	2002	2003	2004	2005
Total Harvest	103	330	493	71	110	174

Source: IDFG

Trend data is not collected for deer in Hunt Unit 36A. However, trends of mule deer populations in IDFG Analysis Area 5 (includes Hunt Units 21, 21A, 28, and 36B) are analyzed, which are relevant and adjacent to this unit. In Analysis Area 5, mule deer populations decreased from 1998 to 2002 and then increased from 2002 to 2005. Management objectives for Analysis Area 5 are ≥ 15 bucks:100 does in post-season surveys and $\geq 30\%$ ≥ 4 -point bucks in the harvest. These objectives were met and exceeded in the 2005 hunting season (Painter 2006).

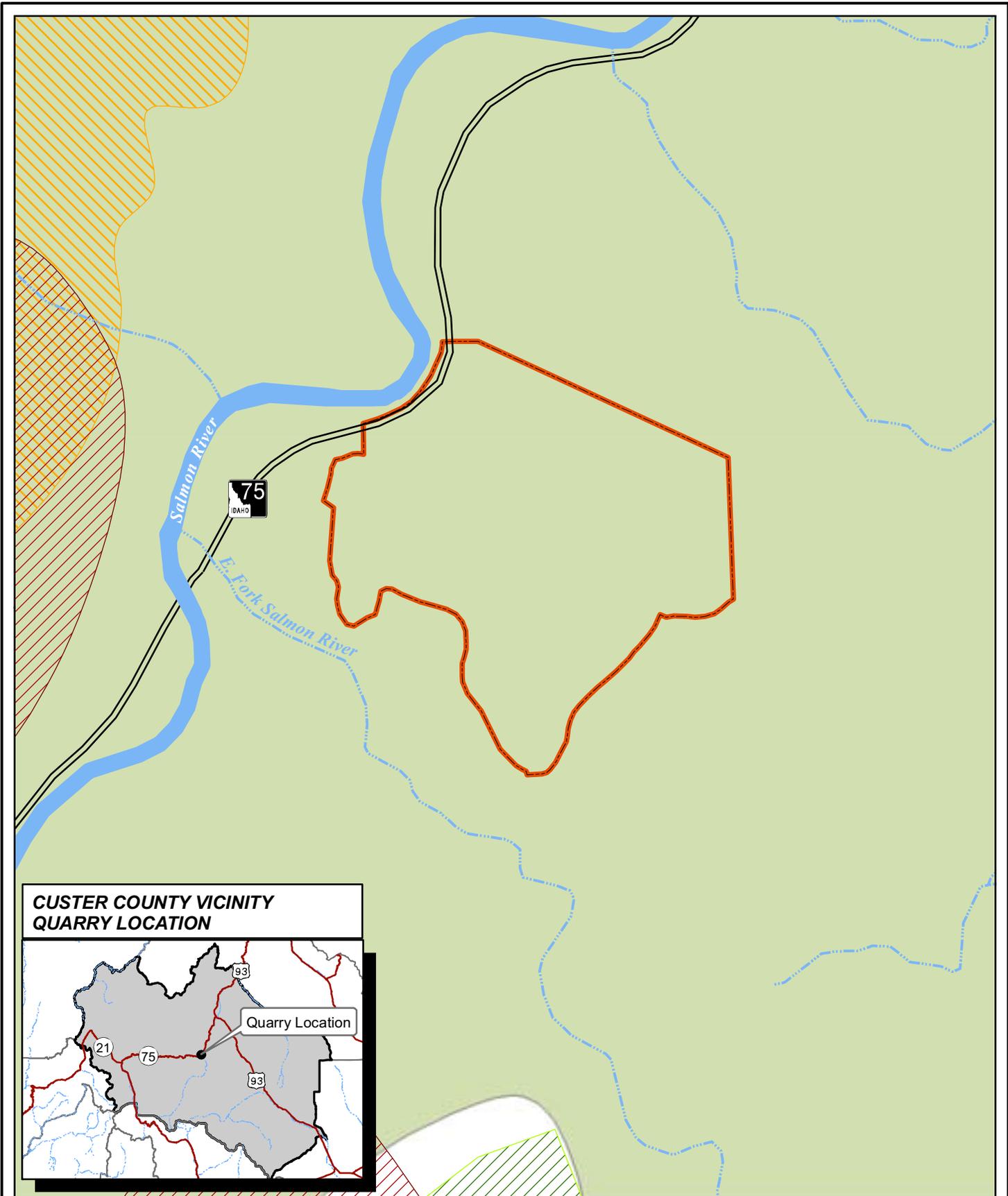
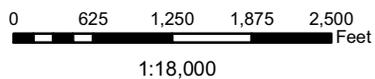


Figure 3.2-2. Big Game Habitat

Legend

-  Project Area
-  Antelope Winter Range
-  Elk Winter Range
-  Mule Deer Winter Range
-  Mule Deer Crucial Winter Range



**Three Rivers Stone Quarry
L & W Stone**



Elk

Elk are widespread and abundant throughout Idaho and prefer mountainous country with mixed open, grassy meadows, marshy meadows, river flats, and aspen parkland, as well as coniferous forests, brushy clearcuts, forest edges, and shrub steppe. Some populations live year-round in sagebrush desert. Elk use grass-shrublands for feeding and tall shrubs or pole timber for resting in the spring; they feed in clearcuts and shrub fields and rest in pole timber in the summer; and remain in mesic (moderate moisture) pole timber in the autumn (Streubel 2000). Elk habitat varies greatly according to location. They are primarily a grazing species, relying on grasses for most of the year, but they also consume forbs in summer, and may browse on woody plants where grass availability is low, especially during winter months.

In Idaho, and throughout the northern Rockies, herds move to lower elevations in winter to feed. Individuals exhibit a high fidelity to their home range, but may abandon it if they are excessively disturbed (Streubel 2000). The quarry does not contain elk winter or summer range. Elk winter range (as defined in the 1999 RMP) occurs about 0.5 mile west of the Proposed Project Area on the west side of the Salmon River (Figure 3.2-2). The closest “crucial” elk winter range on BLM land is over 15 miles to the east of the quarry. Elk harvest statistics for Hunt Unit 36A between 2000 and 2005 are shown in Table 3.2-4.

Table 3.2-4. Total Elk Harvest in Hunt Unit 36A (any weapon) Between 2000 and 2005.

	2000	2001	2002	2003	2004	2005
Total Harvest	63	64	45	24	65	13

Source: IDFG

Trend data collected for elk in Hunt Unit 36A indicate that the population remained relatively stable from 2000 to 2004, with slightly more cows reported in 2000 than 2004 and more bulls reported in 2004 than 2000. Management objectives for Hunt Unit 36A are: 1050-1550 cows and 300-500 bulls, of which 200-300 are adults. These objectives were exceeded in 2004 (Painter 2006; data for 2005 and 2006 are not currently available).

Pronghorn Antelope

Pronghorn antelope are common throughout Idaho and are generally found on grasslands, shrub steppe, and foothills. They prefer rangeland with vegetation less than 2 feet in height and wide open, expansive range. They are often found in low shrubs such as sagebrush and grassy vegetation in arid regions with less than 10 to 12 inches of snow on the ground in the winter. This may lead them to upper, wind-swept slopes in the winter, or fairly long migrations between summer and winter range. Sagebrush browse is prominent in the diet of antelope throughout the year and is heavily relied on during the winter in southern Idaho,

when forbs are scarce. Forbs are an important component of the spring diet for pregnant and lactating pronghorn.

Small numbers of pronghorn antelope may pass through the Proposed Project Area and its vicinity or use it seasonally, but the quarry site does not contain pronghorn winter or summer range. A small amount of antelope winter range is present approximately 0.4 mile west of the quarry, on the west side of the Salmon River (Figure 3.2-2). Data on pronghorn population trends are sparse; however, harvest data (and the associated number of hunting permits issued) indicates that populations are down (Painter 2006).

Upland Game Birds

Chukar (*Alectoris chukar*) and Greater sage-grouse (*Centrocercus urophasianus*) are upland game bird species potentially present in the Proposed Project Area or in the near vicinity. Greater sage-grouse inhabit sagebrush communities and chukars use steep, rocky, semi-arid slopes in rabbitbrush, sagebrush, saltbush, and cheatgrass vegetative associations. Greater sage-grouse are a BLM Special Status Species, and sage-grouse scat has been identified in the area surrounding the project site (see Section 3.2.4, Special Status Fish and Wildlife Species for more details).

Furbearers

Bobcat (*Felis rufus*)

Bobcats are solitary, except during breeding, and typically forage on rabbits. When rabbit numbers decline, bobcat populations subsequently follow (Knick 1990). Although bobcats are not rare in Idaho, there is cause for long-term population concerns. The estimated bobcat population near the Proposed Project Area is unknown; however, suitable habitat features do exist in the region, such as rocks and crevices for shelter as well as a productive rabbit population. Within the Salmon Region (Custer and Lemhi counties) a total of 152 bobcats, 8 percent of total harvest in the state of Idaho, were harvested in the 2004/2005 season (IDFG 2005).

Other furbearer species that may occur within or near the Proposed Project Area include red fox (*Vulpes vulpes*), coyote (*Canis latrans*), mountain cottontail rabbits (*Sylvilagus nuttalli*), and black-tailed jackrabbit (*Lepus californicus*). Other furbearer species that are found throughout the Salmon Region include badger (*Taxidea taxus*), mink (*Mustela vison*), marten (*Martes americana*), muskrat (*Ondatra zibethicus*), river otter (*Lontra canadensis*), and beaver (*Castor canadensis*) however, preferred habitat for these species does not occur within the Proposed Project Area.

Non-game Birds (including Migratory Birds)

Executive Order 13186, signed January 10, 2001, lists several responsibilities of Federal agencies for the conservation of migratory birds and their habitats. A draft Memorandum of Understanding (MOU) between the BLM and USFWS defines BLM responsibilities under the Migratory Bird Treaty Act. The MOU directs the BLM to avoid or minimize the unintentional take of migratory birds to the extent practicable.

The Idaho Bird Conservation Plan (BCP) (ID PIF 2000) identifies 60 species of breeding birds as high priority species in Idaho. This prioritization is based on an assessment of the status of 243 species of breeding birds in Idaho, including waterfowl, shorebirds, waterbirds, and neotropical migrants. The 60 species are organized by 12 habitat types, including the sagebrush/salt desert scrub found within the Proposed Project Area. The predominant habitat type at the quarry site is sagebrush; therefore, the following discussion is restricted to high priority bird species potentially occupying this habitat type. Note that several of the high priority species identified as using sagebrush habitat are also classified as BLM Special Status Species. Riparian habitat along the Salmon and East Fork Salmon rivers provides habitat for numerous bird species, such as the Lewis's woodpecker (an Idaho Species of Greatest Conservation Need and a BLM Special Status Species). Since this habitat would not be removed or altered under the project action alternatives, bird species associated with riparian areas are not further addressed. An exception is made for some bird species with additional protective status, such as the bald eagle (see Section 3.2.4, Special Status Fish and Wildlife Species).

The BCP identified 49 bird species that use sagebrush/salt desert scrub, of which 19 use this habitat type as primary breeding habitat. Nine of these are high priority species in Idaho, including Swainson's hawk, greater sage-grouse, short-eared owl, loggerhead shrike, rock wren, sage thrasher, Brewer's sparrow, lark sparrow, and sage sparrow. Of these, the Proposed Project Area is out of the known range for the loggerhead shrike, sage sparrow, and short-eared owl. Portions of the quarry site provide potentially suitable habitat for the other six high priority species, specifically the undisturbed areas with higher cover and stature of sagebrush, however, nesting habitat is absent for Swainson's hawk. Rocky slopes or cliffs may be used for nesting by rock wren. Brewer's sparrows are expected to be a year-round resident of sagebrush-steppe habitats in the vicinity of the quarry. Additional high priority bird species that use sagebrush habitats as secondary breeding or foraging habitat include the ferruginous hawk, prairie falcon, sharp-tailed grouse, mountain quail, long-billed curlew, black-chinned hummingbird, gray flycatcher, black-billed magpie, and western meadowlark. Of these, the golden eagle, prairie falcon, black-billed magpie, and western meadowlark likely use habitat in the vicinity of the quarry. A golden eagle nest occurs approximately 2

miles northeast of the quarry site, thus the Proposed Project Area is likely within the foraging area for this pair. However, because of the distance of the nest from the quarry site, this species is not further discussed.

Small Mammals

Bats

Site-specific surveys have not been completed for bats in the Proposed Project Area or its vicinity. However, suitable/predicted habitat is present for the following bat species: Silver-haired bat (*Lasionycteris noctivagans*), little brown myotis (*Myotis lucifugus*), big brown bat (*Eptesicus fuscus*), hoary bat (*Lasiurus cinereus*), Townsend's big-eared bat (*Plecotus townsendii*; Idaho species of concern and BLM Special Status Species Type 3), yuma myotis (*Myotis yumanensis*), long-eared myotis (*Myotis evotis*), long-legged myotis (*Myotis volans*), and western small-footed myotis (*Myotis leibii*). These bats utilize several habitat types including desert shrub and sagebrush-grassland. They typically roost in rock crevices, in caves, in abandoned mine portals, and/or in trees. For those that winter in Idaho, hibernation occurs in caves and abandoned mines. The undisturbed cliff faces and rocky slopes at the quarry site and its vicinity therefore provide potential roosting habitat for many of these species, with the south-facing cliffs on the southwest side of the quarry being potentially important. The cliffs that have been exposed from quarrying activities do not currently provide potential habitat for bats.

Other Mammals

Undeveloped portions of the quarry containing sagebrush communities provide potential habitat for other small mammal species such as Merriam's shrew (*Sorex merriami*), least chipmunk (*Tamias minimus*), Wyoming ground squirrel (*Spermophilus elegans*), North American porcupine (*Erethizon dorsatum*), western harvest mouse (*Reithrodontomys megalotis*), northern grasshopper mouse (*Onychomys leucogaster*), bushy-tailed woodrats (*Neotoma cinerea*), long-tailed vole (*Microtus longicaudus*), sagebrush vole (*Lemmys curtatus*), and Great Basin pocket mouse (*Perognathus parvus*).

Fish

Game fish

Common game fish in the Salmon River and East Fork Salmon River include, but are not limited to, bass (largemouth, *Micropterus salmoides* and smallmouth, *Micropterus dolomieu*) and rainbow trout (*Oncorhynchus mykiss*). Mountain whitefish (*Prosopium williamsoni*) also occupy these rivers. Wild, anadromous forms of Snake River sockeye salmon (*Oncorhynchus nerka*), Snake River spring/summer Chinook salmon (*Oncorhynchus tshawytscha*), and

Snake River Basin steelhead trout (*Oncorhynchus mykiss*) and resident Columbia River Basin bull trout (*Salvelinus confluentus*) occur in these rivers but are listed under the Endangered Species Act (ESA) of 1973, as amended. Hatchery forms of steelhead and salmon may be harvested according to IDFG regulations. Westslope Cutthroat trout (*Oncorhynchus clarki lewisi*), a State of Idaho species of special concern and an Idaho BLM sensitive species, is also known to occur and is sport-fished near the quarry. Refer to Table 3.2.5 for the list of special status fish species and Section 3.2.4, Special Status Fish and Wildlife Species, for further discussion of these species.

Non-game fish

Non-game fish species in the East Fork Salmon River and Salmon River include Pacific lamprey (*Lampetra tridentate*), large scale, finescale, and bridgelip suckers (*Catostomus macrocheilus*, *C. Catostomus* and *C. columbianus*.), Northern pikeminnow (*Ptychocheilus oregonensis*), long nose and speckled dace (*Rhinichthys cataractae* and *R. osculus*), shorthead, Piute, and mottled sculpin (*Cottus confusus*, *C. beldingi*, and *C. bairdi*); and redbside shiner (*Richardsonius balteatus*). The Pacific lamprey is ranked as a state imperiled species, but rangewide secure. However, it is not currently on the State of Idaho or BLM sensitive species lists. Although none of these non-game fish species are currently listed under the ESA, they are an important aspect of the Salmon River ecosystem and provide a valuable food source for salmonids in the area.

3.2.4 Special Status Fish and Wildlife Species

Special status species described in this document include those that are (1) Federally listed as threatened or endangered under the ESA, (2) proposed or candidates for listing, and (3) designated as BLM Sensitive species. The following sub-headings detail the current conditions and trends (when available) for special status animal species that could potentially occur in the vicinity of the Proposed Project Area. Special status animal species that potentially occur within or in the vicinity of the Proposed Project Area and habitat requirements for these species are summarized in Table 3.2-5. Note that some of the special status bird species are described instead in Section 3.2.3, Fish and Wildlife, under the non-game birds (including migratory birds) sub-heading.

Table 3.2-5. Special Status Fish and Wildlife Species Potentially Occurring Within or In the Vicinity of the Project Area.

Common Name	Scientific Name	Status ¹	Habitat Requirements/ Associations	Likelihood of Occurrence
<i>Wildlife</i>				
Bald eagle	<i>Haliaeetus leucocephalus</i>	Delisted (formerly Federally threatened); BLM Sensitive	Rivers and lakes used during the breeding and wintering seasons; nests built in large trees in close proximity to a food source; snags and trees near open bodies of water used as winter daytime roost sites; forages on fish, waterfowl, and carrion.	Known occurrence of wintering bald eagles near the confluence of the Salmon and East Fork Salmon rivers.
Gray wolf	<i>Canis lupus</i>	Federal, nonessential, experimental population	Requires large home range which may include a number of different topographic features; distribution appears to be prey-(ungulate) dependent.	Likely passes through area. Some pack activity in region. Have not been observed denning in vicinity of quarry site.
Canada lynx	<i>Lynx canadensis</i>	Federally Threatened	Primarily occurs in coniferous forests above 4,000 feet in elevation that support stable populations of snowshoe hare. They will on occasion disperse through areas of non-habitat.	Presence unlikely but travel could occur along the East Fork Salmon River and main Salmon River; no denning habitat is in close proximity to quarry.
Pygmy rabbit	<i>Brachylagus idahoensis</i>	BLM Type 2	Sagebrush endemic; occupies sagebrush dominated landscapes supporting tall, dense stands of sagebrush and deep, alluvial soils.	Presence unlikely due to the rocky shallow, soils. Known occurrence east of the quarry in Spar Canyon and Bradshaw Basin.
Greater sage-grouse	<i>Centrocercus urophasianus</i>	BLM Type 2	Sagebrush obligate, used for all life stages; riparian meadows, springs, and streams also used for brood-rearing; exposure of sagebrush above the snow is critical during winter; breeds at communal display sites (leks).	Some sign observed locally. No leks in the quarry site. Potential nesting and wintering habitat is present. Brood-rearing habitat may be present in the riparian areas adjacent to the quarry along the East Fork and main Salmon River.
Peregrine falcon	<i>Falco peregrinus anatum</i>	BLM Type 3	Nests on cliffs, forages over open habitats.	Known occurrence; nesting territory in the vicinity of the quarry.

Table 3.2-5. Special Status Fish and Wildlife Species Potentially Occurring Within or In the Vicinity of the Project Area.

Common Name	Scientific Name	Status ¹	Habitat Requirements/Associations	Likelihood of Occurrence
<i>Fish</i>				
Snake River Sockeye Salmon	<i>Oncorhynchus nerka</i>	Federally Threatened/ Critical Habitat	Streams and lake environments for early rearing; spawn in lake inlet streams, and sometimes in lake shoal and outlets.	Occurs in Salmon River adjacent to Proposed Project Area.
Snake River Spring/Summer Chinook	<i>Oncorhynchus tshawytscha</i>	Federally Threatened/ Critical Habitat	Sites with a combination of gravel and coarse sand, adequate depth, and good water flow to provide oxygen for eggs are used for spawning.	Occurs in Salmon and East Fork Salmon rivers adjacent to Proposed Project Area.
Snake River Basin Steelhead Trout	<i>Oncorhynchus mykiss</i>	Federally Threatened/ Critical Habitat	Streams with gravel substrates and cool, clear flowing water free of heavy sedimentation are used for spawning. Escape cover such as logs, undercut banks, and deep pools for spawning adults is also important.	Occurs in Salmon and East Fork Salmon rivers adjacent to Proposed Project Area.
Columbia River Basin Bull Trout	<i>Salvelinus confluentus</i>	Federally Threatened	Cool, low gradient streams with loose, clean gravel relatively free of fine sediments are used for spawning. Complex forms of cover, including large woody debris, undercut banks, boulders, and pools, important for all life stages.	Occurs in Salmon and East Fork Salmon rivers adjacent to Proposed Project Area.
Westslope Cutthroat Trout	<i>Oncorhynchus clarki lewisi</i>	BLM Type 2	Gravel substrates in riffles and pool crests in small, cold tributary streams used for spawning.	Occurs in Salmon and East Fork Salmon rivers adjacent to Proposed Project Area.

¹ Federally listed and BLM special status species. (Source: Quarterly Species List Update for BLM lands in Idaho (File #1002.0000 2007-SL-0688; USDI-FWS 2007b) and Idaho BLM Special Status Animal Species list for Districts and Field Offices (from BLM website [http://www.id.blm.gov/information/sss/Animal_List_FINAL.pdf], accessed 10/10/06; USDI-BLM 2006)).

- Federally threatened: Species that are listed as threatened under the ESA.
- Federal, nonessential, experimental population: Applies under the ESA only to gray wolves south of Interstate 90.
- BLM Type 2: Range wide/global imperilment species: includes species that are experiencing significant declines throughout their range with a high likelihood of being listed under the ESA in the foreseeable future due to their rarity and/or significant endangerment factors.
- BLM Type 3: Regional/state imperilment species: includes species that are experiencing significant declines in population or habitat and are in danger of regional or local extinctions in Idaho in the foreseeable future.

Bald Eagle

The first protection for the bald eagle resulted in the Bald Eagle Protection Act of 1940. The bald eagle was first listed as endangered on March 11, 1967 under the Endangered Species Preservation Act of 1966 (32 FR 4001). The ESA was passed in 1973, and the bald eagle's status as endangered continued in the lower 48 states, listed on February 14, 1978. In 1986, the Pacific States Bald Eagle Recovery Plan (USDI-FWS 1986) outlined the delisting goals for bald eagle recovery. In Idaho and most of the continental United States, bald eagle status was upgraded to threatened on August 12, 1995, resulting from successful efforts towards recovery. On July 9, 2007 a Final Rule was issued by the USFWS that removed (delisted) the bald eagle in the lower 48 states from the Federal List of Endangered and Threatened Wildlife (USDI-FWS 2007a). This species is still considered a special status species by the BLM and remains protected under the Bald and Golden Eagle Protection Act of 1962 and Migratory Bird Treaty Act of 1972.

Bald eagles occupy riparian and lacustrine habitat almost exclusively during the breeding season, but occasionally use upland areas for food and roost sites. Large stick nests are commonly built in large trees with sturdy branches in close proximity to an adequate food source. Bald eagle winter range usually includes areas of open water such as lakes or major river systems. Eagles generally utilize live trees and snags near open bodies of water as winter daytime roosting sites. Bald eagles require large open areas for foraging, such as lakes, rivers, shorelines, and gravel bars. Fish are the primary food source during the breeding season although they will also eat waterfowl, upland birds, small mammals, and carrion. Foraging areas are enhanced by the presence of nesting, perching, and roosting trees in the vicinity. Territory size and configuration are influenced by a variety of habitat characteristics, including availability and location of perch trees for foraging, quality of foraging habitat, and distance of nests from waters supporting adequate food supplies.

The Proposed Project Area lies within the Upper Salmon Subbasin and bald eagle recovery Zone 15. The first contemporary record of breeding bald eagles in the upper Salmon Subbasin was documented in 1990. Over the next 16 years, the breeding bald eagle population in the subbasin has steadily increased in abundance and expanded in distribution to a current record high of 13 nesting territories documented in 2006 (Waterbury 2006b). This number reflects the increasing statewide trend for Idaho's breeding bald eagle population which reached a historic high in 2005.

No bald eagle nests occur in the immediate vicinity of the Proposed Project Area. The closest nest is approximately 5 miles downstream of the East Fork Salmon/Salmon River confluence. This nest was reported in 2004, and in March 2005, occupancy of an adult pair at

this location was confirmed. No eggs were laid in 2005 and this nest was unoccupied in 2006 (Waterbury 2005 and 2006b). A historic nesting territory occurred near Lyon Creek, approximately 4 miles from the East Fork Salmon River confluence, but is no longer occupied or monitored (Waterbury 2005).

Wintering bald eagles are regularly observed in the riparian habitats (black cottonwoods) near the confluence of the East Fork Salmon and Salmon rivers in the vicinity of the quarry site from November through March, likely due to the presence of open water and prey availability. The number of eagles present varies daily depending on river conditions and available food sources. The mid-winter bald eagle count conducted along the Salmon River between Sunbeam and Challis recorded 19 individuals in 2006 and 14 in 2005 (Lukens 2006; USGS 2005). Four regularly used foraging/roosting perches are along the Salmon and East Fork Salmon rivers, from 0.4 mile to 1.7 miles from the Proposed Project Area, of which all but the furthest upriver perch are within line-of-sight of the quarry. Three to five eagles make regular use of this area during icy conditions and eight to ten eagles during periods of open water (Waterbury 2006a). Bald eagles do not readily depend on upland habitats in the Proposed Project Area or its vicinity, but could forage on winter- or road-killed big game.

Gray Wolf

The Northern Rocky Mountain wolf (*Canis lupus irremotus*), as a subspecies, was listed as endangered in 1973 (38 FR 14678). However, based on the probability of enforcement problems and because the trend among taxonomists was to recognize fewer subspecies of wolves, the entire species was listed as endangered throughout the lower 48 States, with the exception of Minnesota, where they were listed in 1978 (43 FR 9612) as a threatened species. In 1994, final rules in the Federal Register made a distinction between Idaho wolves that occur north of Interstate 90 (I-90) and wolves that occur south of I-90. Gray wolves occurring north of I-90 are listed as an endangered species and receive full protection in accordance with provisions of the ESA. Gray wolves occurring south of I-90 are listed as part of a nonessential, experimental population, with special regulations defining their protection and management.

In 1995 and 1996, 35 wolves from southwestern Canada were reintroduced to the Central Idaho Recovery Area, which includes the southern portion of the State of Montana, south of I-90 and Central Idaho. An additional 31 wolves were reintroduced to Yellowstone National Park during this period. Since reintroduction wolf population recovery goals for the three northern Rocky Mountain recovery areas, including Central Idaho, as defined in the 1987 Northern Rocky Mountain Wolf Recovery Plan (USDI-FWS 1987), have been met (Nadeau and Mack 2006).

Gray wolves use habitats with varied topography, substrate, and vegetation. Forests, open meadows, rocky ridges, and lakes and rivers may all comprise portions of a pack's territory. Wolves prey mainly on ungulates year-round (Mech 1970) and packs generally require large home ranges. The actual size of a pack's home range depends mainly on pack size, weather, and prey abundance and distribution and can range from 50 square miles to more than 1,000 square miles.

The Proposed Project Area is located within the immediate vicinity of the Buffalo Ridge and Castle Peak wolf pack territories. The 2006 annual progress report confirmed six wolves in the Buffalo Ridge pack, of which five were pups; the Castle Peak pack did not qualify as a breeding pair for 2006, and the status of this pack is not known. The Buffalo Ridge territory includes the main Salmon River near (within approximately 2 miles) the confluence with the East Fork Salmon River and extends north to the Yankee Fork. The Castle Peak wolf pack territory overlaps the southern edge of the Buffalo Ridge territory and the East Fork Salmon River just south (about 2 miles) of the confluence with the Salmon River. Additional packs, the Yankee Fork and Pass Creek Packs, are in the greater vicinity, with the former overlapping the western portion of the Buffalo Ridge territory and the latter occurring within the southern part of the Castle Peak territory. The wolves in the Pass Creek pack were qualified as a breeding pair in 2006 (Nadeau *et al.* 2007). Therefore, continuous wolf pack activity surrounds the Proposed Project Area. The proximity of the quarry site to the highway, elevated human activity, and presence and use of large machinery likely discourage gray wolves from utilizing the quarry as habitat. Healthy ungulate prey populations in the region support a stable and increasing gray wolf population.

Canada Lynx

Federal agencies that manage lands within Canada lynx habitat have begun to promote Canada lynx recovery actions in their land use plans. The U.S. Forest Service (USFS) and BLM signed 4-year Conservation Agreements with the USFWS in 2000. The USFS agreement has been revised and renewed (USDA-FS and USDI-FWS 2005). The BLM agreement has not been renewed although the agency continues to work within the agreement. Under the agreements, lynx habitat was mapped on all National Forest and BLM-administered lands across the contiguous United States, and ESA Section 7 Consultation occurs on these lands as appropriate. Determinations of project effects on lynx are based on the most current science, including the Lynx Conservation Assessment and Strategy (LCAS) (Ruediger *et al.* 2000). National Forest Land and Resource Plans and BLM Land Use Plans have been revised or amended, or are in the process of revision or amendment, to address lynx conservation needs (USDI-FWS 2005b).

Canada lynx inhabit mature spruce-fir forest (primary habitat) in the southern portion of their range. Lynx habitat is closely associated with the habitat requirements of the snowshoe hare (*Lepus americanus*), the primary prey species for lynx. Early successional stands with high densities of shrubs and seedlings provide optimal habitat for snowshoe hares, making them important foraging habitat for lynx. Mature forests with downed logs and windfall provide denning, security cover, and travel corridors for lynx. Conifer-aspen forests, particularly those with dense regeneration or an extensive shrub and woody debris understory component, and willow riparian areas may also be important for prey species, as they provide both forage and cover.

In accordance with the LCAS (Ruediger *et al.* 2000), Lynx Analysis Units (LAUs) were delineated across the Upper Columbia-Salmon Clearwater BLM Districts. A LAU is a project analysis unit upon which direct, indirect, and cumulative effects analyses can be performed. The size of a LAU approximates the area used by an individual lynx, about 65 to 129 square kilometers (25 to 50 square miles).

Canada lynx may occur in the region around the Proposed Project Area but their presence has not been verified. Primary lynx habitat and denning habitat is not present in the Proposed Project Area or its immediate vicinity. More suitable habitat is present in the forested regions to the northwest and south of the quarry. The Bayhorse-Kinnickick LAU is located approximately 4 miles to the northwest of the quarry and the Northfork LAU is located approximately 20 miles southeast of the quarry site. A lynx linkage area is present north of the Northfork LAU, approximately 10.5 miles south of the quarry, and the East Fork Salmon River runs through the western portion of this linkage. Therefore, although the Proposed Project Area and surrounding shrub-steppe habitat do not provide suitable cover habitat, there is the possibility that lynx could use this area on occasion, including the adjacent East Fork and Salmon rivers, as a potential travel corridor between the LAUs to the north, south, and west of the quarry.

Pygmy Rabbit

The pygmy rabbit is a sagebrush endemic occurring in patchy distributions across the Great Basin desert and adjoining intermountain regions. In Idaho, pygmy rabbits occur in patchy distributions of sagebrush-steppe habitat across southern Idaho, extending to the fault-block basins of east-central Idaho. These east-central basins, which appear to connect to populations in southwest Montana, comprise one of the largest, contiguous habitat strongholds for pygmy rabbits in Idaho (Rachlow and Svancara 2003).

Pygmy rabbits occupy sagebrush dominated landscapes supporting tall, dense stands of mature sagebrush and relatively deep, loamy, and/or sandy soils (Green and Flinders 1980, Dobler and Dixon 1990). These combined habitat features provide preferred forage for pygmy rabbits, protective cover from weather and predators, and soils that are suitable for digging burrows. Given the naturally fragmented nature of their habitat and limited dispersal capabilities on the landscape, pygmy rabbits are particularly vulnerable to loss, alteration, and fragmentation of sagebrush habitats.

In spring and early summer 2006, IDFG conducted a survey for pygmy rabbits on lands administered by the Challis Field Office. Priority survey locations were identified first at the coarse-scale level based on a combination of known localities, habitat model maps, and interviews with individuals with local knowledge and then further refined using orthophoto quadrangle, vegetation, and topographic GIS layers. Based on a conservative habitat model (using GAP analysis), the project quarry originally fell into the “predicted habitat” category. However, when further refined, the Three Rivers Stone Quarry and immediate vicinity did not rank out as a priority survey area because of the rocky, shallow soil type which makes it unsuitable for burrowing. Because of the shallow soil, and the lack of tall, dense sagebrush, the Proposed Project Area is not considered suitable for pygmy rabbits. Priority survey areas were identified in the Bradshaw Basin and Spar Canyon, and positive observations of pygmy rabbits were made about 5.5 miles east of the quarry (Waterbury 2006d and 2007).

Greater Sage-Grouse

The greater sage-grouse is an upland game bird that was once abundant throughout sagebrush habitats in the west. The success of the sage-grouse is directly dependent on, and correlates to, the health of the sagebrush shrub-steppe community. Its original range encompassed the western to northwestern U.S. and three provinces of southwestern Canada. Currently, the greater sage-grouse range has measurably decreased within eleven states and two Canadian provinces and they are no longer present in some western states. Since the 1950s, the greater sage-grouse population has declined by an estimated 45 to 80 percent (Braun 1998), with only about 150,000 to 200,000 breeding greater sage-grouse remaining throughout the range (Connelly and Braun 1997). Greater sage-grouse populations are continually declining throughout their range and individual populations have become increasingly separated (Knick *et al.* 2003). Core populations of greater sage-grouse have survived in several states, including Idaho, Montana, Wyoming, and Colorado, but even these populations, with the exception of Colorado, have significantly declined. The sage-grouse was recently petitioned for listing, but the USFWS determined that listing was not warranted (USDI-FWS 2005a).

The greater sage-grouse is entirely dependent upon sagebrush communities for all stages of its life cycle, with extensive areas of this habitat type required year-round. Sage-grouse have a high fidelity to their seasonal habitats (breeding, late brood-rearing, and wintering habitats), and females commonly return to the same areas to nest each year. Most sage-grouse nests are located under sagebrush plants that provide overhead cover, with 15 to 30 percent canopy cover preferred. Late brood-rearing habitats, used from summer into fall, usually have less dense sagebrush canopy than nesting habitats and generally have a higher proportion of grasses and forbs in the understory. Riparian meadows, springs, and streams are also used during this time, especially in dry years, as these areas produce the forbs and insects necessary for juvenile birds. Because the diet of chicks consists of forbs and insects, diverse plant communities with abundant insect populations are especially important. During winter, sage-grouse feed almost exclusively on sagebrush leaves and buds, so exposure above the snow, rather than canopy cover, is critical (USDI-BLM 2003d).

There are no active or historic sage-grouse leks (traditional sites where males and females congregate for courtship) within the Proposed Project Area. The closest active leks occur approximately 5 to 6 miles southeast of the quarry. Sage-grouse sign (scat) has been observed in the near vicinity of the quarry, suggesting that grouse have or do travel through the area. Potentially suitable nesting and wintering habitat is present in portions of the project site, such as in the southern portion near the ACEC/RNA. However, due to the proximity of the quarry to the highway and the level of human activity (mining) currently taking place, the likelihood of sage-grouse using habitat in the quarry for nesting or wintering is low. Potential habitat for brood-rearing could occur adjacent to the project site in the riparian areas associated with the East Fork Salmon River and main Salmon River. However, use of these areas by sage-grouse has not been documented.

Peregrine Falcon

The peregrine falcon was removed from the endangered species list by the USFWS, and is no longer on the updated list of endangered, threatened, proposed, and candidate species list for the BLM Challis Field Office (USDI-FWS 2007b). The peregrine falcon is listed by the BLM as an Idaho Sensitive Species – Type 3: Regional/State Imperiled (USDI-BLM 2006). Peregrine falcons, as well as all migratory birds, are protected under the Migratory Bird Treaty Act.

Peregrine falcons are found in a wide variety of habitats and are often associated with open water, wetlands, and riparian habitat. They are neotropical migrants that most commonly nest on large cliffs (greater than 200 feet high) under 9,500 feet in elevation. However, they also may nest on man-made structures such as high-rise buildings. They forage in a variety of

open habitats and prey almost exclusively on other birds, which they capture in the air. They may forage up to 18 miles away from their eyries (nest sites), although most hunting occurs within a 10-mile radius of the nest, and often over 80 percent of the foraging occurs within 1 mile. Human activity, especially above the nest area, can cause the abandonment of nests and reproductive failure.

A peregrine falcon nesting territory is present approximately 2 miles from the quarry. Two nests are known to occur in this territory, one that was used in 2003 and another that is considered a “probable” eyrie. The territory was discovered in 2002 but did not produce any young. In 2003, two young were fledged from the confirmed eyrie and in 2004, a nesting attempt in the other eyrie failed. The nest territory was unoccupied in 2005 and 2006 (Waterbury 2006c and Lukens 2006). The BLM and IDFG monitor peregrine falcon activities in the Challis Field Office area.

Snake River Sockeye Salmon

Sockeye salmon were listed as threatened under the ESA in the mid-1980s. Sockeye salmon exhibit some of the more complex life history patterns among Pacific salmon in that they rely on both stream and lake environments for early rearing (Burgner 1991, Irving and Bjornn 1984). Sockeye salmon in the Columbia River Basin are typically late summer/fall spawners. Juveniles emerge from the gravel the following spring and move into the lake for 1 to 2 years where they feed on zooplankton before migration. Sockeye salmon are present in the Salmon River.

Snake River Spring/Summer Chinook Salmon

Chinook salmon were listed as threatened under the ESA in the mid-1980s. Spring/summer Chinook salmon arrive in Idaho waters in the spring and summer to spawn in the Clearwater, Salmon and Snake Rivers. Salmon smolts migrate to the ocean after 6 months to 1 year. Spring Chinook return to the Upper Salmon River in the Sawtooth Mountains and the Middle Fork, East Fork and Yankee Fork of the Salmon River. Summer Chinook return to the South Fork of the Salmon River and the Salmon River. Chinook salmon are present in the East Fork Salmon River and the Salmon River and these rivers are designated critical habitat for Snake River spring/summer Chinook salmon.

Snake River Basin Steelhead

Steelhead, the anadromous form of rainbow trout, were listed as threatened under the ESA in the mid-1980s. They arrive in Idaho in August and September and spend the winter in Idaho streams before spawning the following spring. Steelhead are common in the Snake, Salmon, and Clearwater Rivers below the Hells Canyon and Dworshak dams. Steelhead are present in

the East Fork Salmon River and the Salmon River and these rivers are designated critical habitat for steelhead.

Columbia River Basin Bull Trout

Bull trout were listed as threatened under the ESA in 1998. Bull trout are widespread throughout tributaries of the Columbia River basin. This species exhibits fluvial (i.e. fish migrate as adults from larger streams or rivers to smaller streams to reproduce) and adfluvial (i.e. fish migrate larger distances as mature adults from lakes to inlet or outlet streams to spawn) life-history strategies through much of its current range. The Salmon River Watershed provides suitable habitat for bull trout. Electrofishing surveys conducted by the IDFG in 2001 found a total of 659 bull trout within the Salmon Region, including one within Squaw Creek and two within Herd Creek (IDFG 2002). Herd Creek is a tributary to the East Fork Salmon River located upstream from the quarry.

Westslope Cutthroat Trout

Westslope Cutthroat trout are a BLM Type 2 sensitive species, and use the Salmon River, East Fork Salmon River, and virtually all of its suitable tributaries for spawning and rearing. Westslope cutthroat trout are present in these systems in various life stages year-round. They spawn in the smaller tributary streams from May through mid-July, when water temperatures reach about 50 degrees Fahrenheit.

3.2.5 Wild Horses and Burros

The Proposed Project Area is in the Challis Herd Management Area (HMA), which has an appropriate management level of 185 horses. The herd has varied from 185 to 253 horses between gathering events. The Challis HMA covers 167,840 acres bounded by Highway 75 on the north, East Fork Road on the west, the Willow Creek divide on the south, and U.S. Highway 93 on the east. There are no burros in the Challis HMA.

Wild horses have been observed within approximately 2 miles of the Proposed Project Area during census flights. Evidence of horse use was noted in the summer of 2002 on the power-line access road approximately 2,000 feet southeast of Pit 2. A group of four to six wild horses has been noted on the northeast side of the East Fork Salmon River, approximately 1.5 mile southeast of the quarry during the winters of 2001 and 2002. The Three Rivers Stone Quarry receives very little use by wild horses and does not contain any areas identified as crucial habitat (USDI-BLM 1999).

3.3 OTHER RESOURCES

3.3.1 Cultural Resources

Background

Cultural resources are sites, buildings, districts, structures, and objects that contain evidence of past human activities. The National Historic Preservation Act (NHPA) of 1966 established the Federal government's policy and programs on historic preservation, including the establishment of the National Register of Historic Places (National Register). Cultural resources that are listed or eligible for listing on the National Register are called historic properties. Historic properties can reflect many kinds of significance, including architecture, history, archaeology, engineering and culture.

Archaeological survey of the proposed area of potential effect (APE) is required to assist in implementing Section 106 of the NHPA, procedures of the Advisory Council on Historic Preservation (36 CFR 800), and BLM policy requiring inventory and evaluation for cultural resources within potential impact areas. Section 106 of the NHPA requires that prior to any action, Federal agencies make a reasonable and good faith effort to identify cultural resources that might be affected by the action, to identify those resources which may qualify as eligible to the National Register, and that Federal agencies take into account the effects of their undertakings on all historic properties. The Idaho State Historic Preservation Office (SHPO) and the Advisory Council on Historic Preservation (ACHP) are the state and Federal agencies responsible for overseeing the management and preservation of heritage resources in compliance with the NHPA.

Existing Cultural Resources

The Salmon River Corridor is rich with prehistoric and historic culture. Native Americans have used the Salmon River corridor and the confluence area of the East Fork and Main Stem Salmon rivers extensively for thousands of years, and prehistoric sites have been located along the rivers and in their vicinity. The historic town site of Crystal is also located at the confluence of the East Fork and Main Stem Salmon rivers and historic building remnants have been recorded in this area.

The archaeological and historic inventory record was examined to determine the presence of cultural resources in the existing Three Rivers Stone Quarry and the area proposed for expansion. Records included reports and summaries of field surveys conducted by the BLM, Idaho State University Museum, Shapiro and Associates, and the Idaho Transportation Department between 1975 and 2004. Most surveys completed between 1996 and 2004 were directly tied to mining operations by L&W Stone and covered the majority of the area

proposed for mining expansion and exploration. These previous inventories identified a total of five cultural resources in or adjacent to the proposed APE. Of these, one was eligible for inclusion in the National Register under Criterion D. Table 3.3-1 summarizes these cultural resources. Maps of these sites are not included in this document in order to protect the historic resources, as authorized by Section 304 of the NHPA.

Table 3.3-1. Cultural Resources Previously Recorded in the Project Area Vicinity.

Site Number	Site Type	Year Recorded	National Register Eligibility
10CR508	Rock Overhang/Shelter	1975	Not Eligible
10CR984	Lithic Scatter	1991	Not Eligible ¹
10CR-1861	2 Talus Pits ²	2004	Criterion D
10CR-492	Lithic Scatter ²	1975	Yes
10CR-493	Five Talus Pits/ Hunting Blinds ²	1975	Yes

¹ This site was heavily disturbed in the winter of 1999-2000. A large component of the site was removed and some artifacts were displaced, thus the site no longer retains the integrity that might render it eligible for the National Register.

² Adjacent to but outside of the Proposed Project Area.

In addition to the five previously recorded sites above, four flakes of locally available volcanic tuffs were noted within the Proposed Project APE in 2004 but not formally recorded. These flakes were not associated with any other cultural materials and are not eligible for listing on the National Register.

To date, surveys of the Three Rivers Stone Quarry in the area proposed for expansion have not resulted in the record of any cultural resources eligible for listing on the National Register. A small portion of the area proposed for expansion between Pit 1 and Fuel Storage Area #2 and the Pit 1 waste rock area have not been surveyed for cultural resources. The potential that cultural deposits remain in this area is low due to the steep topography and disturbed nature of the majority of the area. However, the potential still exists for the presence of cultural resources in localized portions of this area; therefore, an intensive survey of this area will be conducted between the draft and final version of this EIS, and the findings of the survey will be reported in the Final EIS.

3.3.2 Tribal Treaty Reserved Rights and Interests

The Challis Field Office area is entirely comprised of lands (aboriginal, traditional, or unoccupied) on which the Shoshone-Bannock Tribes reserved the right to hunt, fish and gather natural resources in the Fort Bridger Treaty of 1868. As a land and resource manager,

the BLM has a Federal trust responsibility to honor treaty rights, and to make land management decisions and take actions that do not harm treaty rights, treaty resources, and other tribal interests. The BLM is required to do this while still meeting its land and resource management responsibilities to all of the nation's people.

Historically, the East Fork Salmon River has been an important fishery resource for the Tribes. In the past, the Tribes have expressed concern about actions within the watershed that have the potential to impact the spawning and rearing systems of spring/summer Chinook salmon and summer steelhead. Steelhead and salmon fishing in the East Fork continues to be an important cultural activity for Shoshone-Bannock tribal members today. Some tribal members continue to use traditional methods to catch fish, such as spearing, which requires clear water and good visibility. Any potential impacts to water clarity or turbidity are of special concern to the Tribes.

Government-to-government consultation with the Shoshone-Bannock Tribes is ongoing regarding the amended plan of operations and proposed quarry expansion (see Section 5.1.1). As of August 30, 2005, the Tribes have divulged no specific concerns about properties potentially eligible for the National Register, or properties related to tribal treaty rights or Native American religious concerns within the L&W Stone proposed APE.

3.3.3 Social and Economic Conditions

The Proposed Project Area is within Custer County, near the incorporated communities of Challis and Clayton. Custer County is 4,925 square miles in size, was sparsely populated with 0.9 persons per square mile in 2000 (U.S. Census Bureau 2006b), has no metropolitan areas, and is distant from urban areas (USDI-BLM 1998). Approximately 23 residential properties have views of some portions of the proposed operations. Since the majority of people employed at the Three Rivers Stone Quarry live in the Challis area (Challis and Clayton), the following discussion is limited to these communities and does not include the communities of Stanley and Mackay.

Population

The population of Challis in 2000 was 909, a decline of about 15 percent from 1990 (US Census Bureau 2006a). This decline in population was due primarily to the closure of the Hecla Mine. More recently, and since the 2000 Census was completed, the Thompson Creek Mine has increased employment which has positively affected the population of Challis. The number of retirees buying homes in the Challis area has also increased the population of the area. The population of the greater Challis area (ZIP Code Area 83226) is 2,288, indicating that the majority of the residents live in a rural/unincorporated setting. Unlike Challis, the

population in the greater Challis area has been stable during the period between the two most recent population censuses.

Employment

The service sector is the largest component of employment in the Challis area, employing about 345 people and consisting of a variety of services for residents and accommodations and food services for tourists (Table 3.3-2). Challis was a historical trading center for miners, and mining is still the primary way of life for many community members. Today about 281 people work in the mining industry which makes up the second largest component of employment in the Challis area (Table 3.3-2). Other areas of significant employment include retail trade, government, and agriculture (Table 3.3-2). Minor areas of employment (less than 10 %) include construction, transportation, communication, and utilities (TCU), financial services (FIRE), and manufacturing (Table 3.3-2).

Table 3.3-2. Challis Area Employment.

Employment Type	Number Employed in Challis Area
Services	345 (23%)
Mining	281 (19%)
Government	248 (17%)
Agriculture	197 (13%)
Local Trade	178 (12%)
Construction	129 (9%)
TCU	58 (4%)
FIRE	36 (2%)
Manufacturing	19 (1%)
Total	1,491 (100%)

Challis has a variety of public services including an airport that provides charter access to the Idaho backcountry, Custer County Offices, a medical clinic, USFS and BLM offices, and the Challis School District. The community's largest employer is the Thompson Creek Mining Company. The second largest employer is the Federal government (USFS, BLM, and the U.S. Postal Service). Other major employers include L&W Stone, two utility companies, two grocery stores, three restaurants, two service stations, and the local bowling alley.

The L&W Stone Corporation currently employs about 75 workers at the Three Rivers Stone Quarry. Approximately 36 of these employees work seasonally, generally April through December of each year. Wages at L&W Stone are among the highest of all employers in the Challis area and Custer County. The majority of seasonal employees are paid by the weight

and quality of flagstone produced daily, with wages paid dependent on experience and job description (Table 3.3-3). The quarry provides a variety of jobs including laborers, trucking, equipment operators, management, and rock splitters and handlers. Much of the work requires hard physical labor, and even with the high wage scale, the quarry has been unable to meet all of its labor needs with local workers. Consequently, the majority of the rock splitters and handlers at the quarry are seasonal workers with work visas (H2B visas) or resident cards who reside part of the year in Mexico. The Three Rivers Stone Quarry employs approximately 14 year-round rock splitters that also hold work visas or resident cards. They are able to work at the quarry throughout the winter due to the installation of heated tents in 2006. It is likely that employees holding work visas or resident cards send a portion of their income to Mexico.

Table 3.3-3. Wage Rates at the Three Rivers Stone Quarry.

Job Type	Wage
Entry level general laborers	\$7.00 – \$9.00/hr
Truck drivers, loader operator, bulldozer operator, driller/blaster, maintenance	\$10.00 – 25.00/hr with benefits plus overtime (\$20,800 – \$52,000 annually)
Rock splitters and handlers	Paid weekly based on the weight and quality of flagstone produced, \$500 – \$1,500 per week (\$18,000 – \$65,000 annually), plus housing benefits. Resident aliens offered medical insurance.

Employment in metal mines in the Challis area has exhibited a boom and bust character due to the volatile nature of the metal markets. In contrast, L&W Stone operations are linked to construction demand for dimension stone which has been steady in the west due to its value in residential and commercial construction. Stone from the Three Rivers Quarry is being sold on the west coast of the United States and in the Far East (Japan). Consequently, employment at the quarry is more stable than the other mining employment in the area. When examined from the perspective of total industry output (industry sales), mining makes an even larger contribution to the local economy, making up about 26 percent of all economic activity in the Challis area. This is explained by the relatively high wage scales and sales per worker of mining operations as compared to retail trade or service businesses.

Challis Area Economy

The Challis area economy is based on a combination of mining, agriculture, tourism, government services, and land development (Table 3.3-4). The Thompson Creek Mining Company (molybdenum) and L&W Stone are the two principal mining companies.

Agriculture in Custer County is primarily cattle ranching and associated hay and pasture operations. Land used for ranching is experiencing considerable pressure for land subdivision and development as retirees and “quality-of-life migrants” are moving into the upper Salmon River valley and purchasing retirement and recreation homes. Tourism is seasonal with a relatively short summer season followed by a fall season focused on big game hunting. There are also spring steelhead fishing seasons and winter sports. Motel and restaurant employment is greatest during the tourist season. Land development and other natural resources are also important components of the economic base. Other natural resource activities include logging and hunting and associated guides and outfitter operations.

Table 3.3-4. Challis Area Economy and Economic Base.

Contribution Type	Economic Base (%)
Mining	46
Agriculture	25
Tourism	13
Government	10
Land Development	6

Source: Bureau of Economic Analysis 2007.

Income

Challis residents derive a large share (60%) of their income from wage and salary employment. Farm and business profits also make a significant contribution (11%) to the local economy, and spending by owners of seasonal homes is becoming more important to the areas’ economy. Retirees in Challis rely more on social security income as opposed to investment income as in neighboring communities.

Per capita income in Challis in 1999 was \$15,803, which was slightly lower than surrounding communities. However, median family income was slightly higher, at \$39,444. Twelve percent of the population had individual income below the poverty level, which was comparable to surrounding communities (US Census Bureau 2006a).

Housing

Housing in the Challis area, which comprises the Challis, Patterson and Clayton ZIP code areas (83226, 83253, and 83227), consists of owner and rental housing units. In Challis, older homes typically sell for \$75,000 to \$125,000 and newer homes for \$125,000 to \$175,000. Rental units rent for \$300 to \$500 per month, with a median rent of about \$450. In 2000, there were 1,856 housing units in the greater Challis area (U.S. Census Bureau, 2006a) and currently, very few are vacant. Rental demand has gone up with the expansion of the

workforce at the Three Rivers Stone Quarry and Thompson Creek Mine, and the demand currently exceeds the supply. A small portion of the houses are inhabited by second-home owners, with the numbers recently increasing in the Challis area.

Community Services

Community services in the Challis area are shown in Table 3.3.5. In addition to law enforcement and protection from the Challis police department, Challis receives services from the Custer County Sheriff. Given the small size of Challis, only one small healthcare facility is present. Dental, vision, and chiropractic services are also present. The closest hospital is in Salmon, Idaho, about 60 miles from Challis. Two additional hospitals are present in the region, one in Hailey (113 miles away) and another in Idaho Falls (150 miles away). Ambulances are provided by the 24-hour Challis Volunteer Ambulance Service. Fire protection is provided by paid and volunteer county firemen.

Table 3.3-5. Community Services in the Challis Area.

Location	Police Departments (number)	Medical Facilities (number and type)	Schools (grade and number of students)
Challis	1	4 (1 healthcare, 1 dental, 1 vision, and 1 chiropractic clinic)	PK – 6 (176) 7 – 12 (235)
Clayton	--	--	KG-4 (6)

Source: Challis Chamber of Commerce and Institute of Educational Sciences National Center for Educational Statistics.

Challis is within the Challis Joint School District 181. In addition to the schools listed in Table 3.3-5, an elementary school in Patterson, Idaho and an elementary-junior high school in Stanley, Idaho are also part of this District, with an additional 42 students. Many of these students attend the high school in Challis. However, given the distance from the quarry, it is unlikely that children of quarry employees attend these schools. Demography of the students enrolled in the schools in Challis and Clayton is primarily Caucasian, with 6 percent Hispanic, and 1 percent Asian. Demography of the students enrolled in the school in Stanley is all Caucasian, and demography of the students enrolled in the school in Patterson is 79 percent Caucasian and 21 percent Hispanic. An English proficiency program is offered in the school District.

Public Land Ownership

In Custer County, Federal land ownership accounts for over 90 percent (94.3%) of all land. Less than 2 percent is owned by the state. The county has a high proportion of land in Federal ownership compared with surrounding counties. Consequently, local officials report that the county's economic well-being is very dependent upon public land management

decisions (USDA-FS 2003). The principal components of the Challis area economic base are all dependent to a large degree on Federal land management.

3.3.4 Visual Resources

VRM System

In order for the BLM to meet its responsibility to maintain the scenic values of the public lands, they use a Visual Resource Management (VRM) system. This system defines various scenic values, and provides a way to describe and evaluate landscape appearance (USDI-BLM 1986a; USDI-BLM 1986b). The VRM system is a classification of many landscape characteristics that helps guide land management activities and project implementation. The system is intended to identify scenic values, sensitive areas, and potential mitigation strategies, not as a basis for approving or denying land use activities. The VRM system allows land management decisions to be considered within the context of visual resources so activities can be implemented to maintain or enhance the particular scenic values of an area.

Assessing scenic values and determining visual impacts can be a subjective process. To increase objectivity and consistency, the VRM system describes and evaluates landscapes by using the basic design elements of form, line, color, and texture. This same system can also be used to describe proposed actions and analyze potential visual impacts of these actions. Projects that repeat these design elements are usually in harmony with their surroundings, whereas those that do not, create contrast. By adjusting project designs so that the basic design elements are repeated, visual impacts can be minimized. In general, the VRM system consists of two stages: inventory classification and management classification (USDI-BLM 1986b). These classifications are summarized below in the context of the Proposed Project Area.

Visual Resource Inventory

The VRM Inventory is a process that BLM uses to guide the management of visual resources (USDI-BLM 1986a). The process rates the visual appeal of a tract of land, accounts for public concern for scenic quality, and determines whether the tract of land is visible from travel routes or observation points. The inventory utilizes a classification matrix to rank landscape characteristics such as scenic quality, visual sensitivity, and distance zones. Inventory classes provide a basis for considering visual values during the RMP process. They do not establish management direction and should not be used as a basis for constraining surface disturbing activities. The visual resource inventory process utilizes the following landscape characteristics:

Scenic Quality: This characteristic is a measure of the visual appeal of a tract of land within the planning area. The planning area is sub-divided into Scenic Quality Rating Units (SQRU) of similar visual character on a basis of: like physiographic characteristics, similar visual patterns, texture, color, variety, etcetera, and areas which have similar impacts from man-made modifications. The size of the SQRU may vary from several thousand acres to 100 or less acres, depending on the homogeneity of the landscape features, and the detail desired in the inventory. Normally, more detailed attention would be given to highly scenic areas or areas of known high sensitivity. Seven key factors determine the scenic quality of a unit: landform, vegetation, water, color, adjacent scenery, scarcity, and cultural modifications. Resource specialists consider these factors when ranking units for scenic quality (A = high, B = medium, C = low). Ratings consider key factors on a relative basis, taking into account similar features within the area. Prominent high cliffs for example, may receive a higher quality rating than flat valley bottoms. At the time of preparation of this document the SQRU established by the BLM for the proposed project area were not available.

Visual Sensitivity: This characteristic is a measure of public concern for scenic quality. Public lands are assigned high, medium, or low sensitivity levels for each by analyzing various indicators of public concern, such as: type of user, amount of use, public interest, adjacent land uses, and special areas such as wilderness. At the time of preparation of this document the sensitivity level rankings for the proposed project area were not available. However, the State of Idaho has designated SH-75 between Stanley and Salmon as the Salmon River Scenic Byway Corridor. The Idaho Department of Transportation has begun a planning effort to complete a Salmon River Scenic Byway Corridor Management Plan, which is currently under preparation. It is locally driven, and considers values that local citizens wish to preserve, conserve, or otherwise enhance. The Proposed Project Area is visible from specific sections of SH-75, and visibility depends on travel direction.

Distance Zone: Landscapes are subdivided into three distance zones based on relative visibility from travel routes or observation points. The three zones are: foreground-middleground, background, and seldom seen. The foreground-middleground zone includes areas seen from highways, rivers, or other viewing locations that are less than 3 to 5 miles away. The background zone is beyond the foreground-middleground zone, but usually less than 15 miles away. The seldom-seen zone includes areas not seen as foreground-middleground or background (i.e., hidden from view). Known key observation points along SH-75, East Fork Salmon River Road, and the Salmon River would place the project in the foreground-middleground zone.

Visual Resource Management Classification

The RMP process utilizes information from the visual resource inventory process to classify the planning area into one of four VRM Classes. The objective of each class is listed below. Existing mining operations and the proposed expansion area are located in a VRM Class II area.

VRM Class I Objective: To preserve the existing character of the landscape. The level of change to the characteristic landscape should be very low and must not attract attention.

VRM Class II Objective: To retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.

VRM Class III Objective: To partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate.

VRM Class IV Objective: To provide for management activities which require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high.

Baseline Visual Conditions Verses Existing Visual Conditions

Environmental baseline conditions for visual resources at the Three Rivers Stone Quarry are those that existed in 1992 because those conditions represent the most recent level of disturbance approved by the BLM. Changes that have occurred at the quarry site since then have never been formally analyzed for visual impacts. The photographs below depict the Proposed Project Area from approximately the same vantage point over a period of time from 1992 to 2005 (see Figures 3.3-1 through 3.3-5). The figures are displayed here in an attempt to give the reader an idea of how the area has changed since 1992. Following the photographs is a description of visual resource conditions that existed at the site in 1992.

Obvious changes in the scope of operations since 1992 have resulted in visual contrasts. Being temporally removed from the visual baseline conditions presents a unique challenge in describing the affected environment. However, the greatest attempts have been made to reconstruct the visual baseline conditions using historic photographs, stereoscopic aerial photographs, historic plans of operation, field notes, personal communications, and other general information from the administrative record. The following description of visual baseline conditions strives to reconstruct the appearance of the landscape in 1992.



Figure 3.3-1. The Proposed Project Area (1992).



Figure 3.3-2. The Proposed Project Area (2003).



Figure 3.3-3. The Proposed Project Area (2005).



Figure 3.3-4. Overlook of Pit 1 (1992).



Figure 3.3-5. Overlook of Pit 1 (2005).

Project Area Visibility

The Proposed Project Area is in the Northern Rocky Mountains physiographic province at the confluence of the Salmon and East Fork Salmon rivers. The region consists of high mountain ranges with deeply dissected, steep-sided valleys. These narrow valleys are comprised of irrigated fields flanked by rugged foothills and cliff features. Vegetation in the foothills creates a very irregular pattern caused by patches of grasses, low lying sagebrush, or dark stands of conifers. This is a very arid appearing environment with colors mostly in the spectrum of muted greens, browns, and yellows. Houses and structures associated with small-scale farmlands in the river bottoms sparsely populate the landscape. A two-lane highway parallels the length of the Salmon River adjacent to the quarry and an unpainted paved county road parallels the East Fork Salmon River.

A Key Observation Point (KOP) is one or a series of points on a travel route, use area, or a potential use area where the view of a management activity would be most revealing. KOPs are chosen based on existing land use, frequency of visibility, duration of visibility, and anticipated activities of the observer. Six KOPs were established that provide a view of the Proposed Project Area from diverse locations in an effort to communicate landscape appearance experienced by the public from various perspectives (Figure 3.3-6).