

Description and Summary

Soil profile characteristics have been influenced by wind-deposited materials high in carbonates and can be described as follows:

- Various forms of cementation (duripans) are common at differing depths in the soil profiles.
- Soils are shallow to very deep and well drained to excessively drained.
- Surface soil textures range from loams and silt loams to sandy loams.
- Sub-soils can vary from sandy loam to clay loam.
- The soils have an aridic or aridic/xeric soil moisture regime and a mesic soil temperature regime.
- The wind and/or water erosion potential ranges from low to high depending on surface texture and slope (Soil Map 1).

Soils information for the NCA was obtained from the National Resource Conservation Service (NRCS) soil surveys for Owyhee County (2003), Ada County (1980), Canyon County (1972), and Elmore County (1991).

An important component of many ecological sites in the NCA is the biological soil crusts, which play a particularly important role by protecting the interspatial areas from various forms of erosion. Occupying the interspatial area between larger plants, these crusts enhance soil stability, soil moisture retention, and site fertility (by fixing atmospheric nitrogen and contributing organic matter). The crusts also appear to limit germination and establishment of invasive annual grasses.

Crust cover can often be inversely related to the amount of bare ground, suggesting that a decline in crust cover produces an increase in bare ground (rather than an increase in vascular plants, with the exception of invasive annuals). In the NRCS “National Range and Pasture Book”, biological soil crusts are identified as a critical ecological attribute to be used as an indicator of rangeland health (USDA 2003). These crusts may serve as an early indicator of ecological site decline since they

appear to be more sensitive to disturbance from livestock and OHV activity than vascular plants. In the NCA, biological soil crusts are in a severely depleted condition.

Conditions and Trends

In areas of the NCA where historic livestock grazing has degraded the watershed, an early-to mid-seral or disturbed vegetative condition now exists. This trend is continuing throughout the NCA, and in combination with wildland fire, native vegetation is being altered and replaced by less desirable species, or in the worst case, exotic invasive and noxious species (USDI 1996b pp 25-28).

Only five out of the last 14 years (1993, 1995, 1996, 1998, and 2005) received average or slightly above average annual precipitation.

Areas in a degraded ecological condition are subject to increased erosion processes and impaired watershed health. As vegetative cover is depleted and species composition is changed, site productivity is reduced through erosion and lack of biological diversity (Blackburn *et al.* 1986, p 31-38). Continuation of this trend could lead to desertification in some areas. This phenomenon is already apparent in large areas where drought, in combination with historic grazing practices and wildland fire, has exposed soils to accelerated rates of wind erosion. Due to depleted surface soil, these areas are transitioning to a vegetative community dominated by weedy annual forbs.

Also affecting watershed health is the amount of mechanical disturbance to the soil surface resulting in compaction and structural breakdown. Soil disturbance has been shown to reduce vegetative composition, vigor, and productivity. Several studies on grazing intensity consider heavy livestock trampling to be more harmful to the watershed than excessive grazing (Warren *et al.* 1986a, pp 500-504, Warren *et al.* 1986b, pp 491-495).



2.2.8 Upland Vegetation

Introduction

Prior to European settlement, the NCA was dominated by three principal vegetation communities: Wyoming big sagebrush, winterfat, and shadscale, each with an understory of perennial grasses and forbs. These communities were often found as complexes or mosaics. Biological soil crusts, consisting of lichens, algae, and mosses, are

- The NCA is characterized by cool, moist winters and hot, dry summers.
- Average annual precipitation in the NCA ranged from 6.8 to 10 inches from 1992 to 2002.
- During drought, annual precipitation has been as little as 3 inches at some locations.

another important component of the ecological community (Yensen 1982).

Climate, livestock grazing, introduction of invasive exotic species, wildfire, recreation, and military activities had significantly altered vegetation communities in the post-European settlement period (Yensen 1982, p 39). In 1979, the NCA was still characterized by extensive shrub stands; however, the grass and forb understories have been significantly altered (Vegetation Map 1). After a series of large wildfires in the early 1980s and mid-1990s, shrub communities decreased significantly, and comprised approximately 37% of the NCA in 2001 (Vegetation Table 2.1, Vegetation Map 2). Vegetation in the remaining area is comprised primarily of invasive exotic annuals or seedlings.

Vegetation Table 2.1. Vegetation Community Composition for the NCA Based on 2001 Remote Sensing Data. Percentages Within Each Area are Based on the Acreage Totals for the Six General Vegetation Classifications.

Vegetation Community	Total Acres in NCA	Percentage of Area				
		NCA	Management Area 1	Management Area 2	Management Area 3	OTA
Shrub	154,400	32	43	31	24	31
Shrub/Cheatgrass	21,100	4	4	3	6	6
Seedlings	34,100	7	23	4	6	1
Sandberg/Cheatgrass	28,000	6	3	5	5	10
Cheatgrass/Exotic Annuals	223,200	47	27	52	56	51
Bare Ground	15,700	3	1	6	3	1

Influences/Disturbances

Climate

The NCA is characterized by cool, moist winters and hot, dry summers. From 1948 to 2004, average monthly maximum temperatures ranged from 41°F in January to 96°F in July at Swan Falls (Western Regional Climate Center). Precipitation in the NCA is variable depending upon location (Vegetation Map 3). Annual precipitation is strongly influenced by the rain shadow of the Owyhee and Boise mountain ranges and exhibits a pattern of in-

creasing annual precipitation from south to north. The majority of the precipitation occurs in the winter and early spring, with occasional summer thunderstorms.

Livestock Grazing

Intensive overgrazing by domestic livestock occurred in the general area from about 1870 to 1934. Decreaser grasses (dominant understory species that decline under intensive grazing) including bluebunch wheatgrass, Thurber's needlegrass, Indian ricegrass, and Great



Basin wildrye and many native forbs were drastically reduced or eliminated from the understory (Quinney 2000, p 93). Increaser grasses (understory species that increase under unfavorable grazing practices), primarily Sandberg bluegrass, became the dominant species. Some of the important shrub communities, like winterfat, were severely damaged, while others were eliminated.

Grazing intensity and timing are important factors in vegetation establishment and recovery. Grazing before seedlings become fully established, or at unsupportable stocking levels following treatments, particularly when combined with drought conditions, has resulted in outright seeding failures or seedlings that may initially have been successful, but subsequently became degraded or failed as a result of improper grazing. When moisture is limiting, as is often the case in the NCA, late spring grazing can prevent bunchgrasses from completing their normal growth cycle. When adequate soil moisture is present after livestock removal, bunchgrasses can still complete their growth cycle. Therefore it is possible to utilize grazing systems that ensure that bunchgrasses are able to set seed every year or most years. Little or no seed production and the lack of establishment of new individuals eventually results in attrition of the stand, as plants die and are not replaced. These openings allow cheatgrass and other undesirable exotic species to invade the site, further decreasing the ability of the stand to regenerate and improve itself (USDI 1995a, p.18).

Invasive Exotic Species

By 1900, a significant vegetation change had begun to occur in the area. Many species of exotic annuals were introduced into the area through contaminated crop seed and livestock feces. These species included cheatgrass and several exotic mustards (Yensen 1981, Pie-meisel 1951). Years with average and above average precipitation result in increased cheatgrass production, (as measured by plant density, plant size, and number of seeds). In addi-

tion, precipitation concentrated in late winter and early to mid-spring can provide moisture for heavy cheatgrass production, even though the total annual precipitation remains at or below average. These annuals then cure out and are much more flammable than the native species they replace. Exotic annual communities vary greatly with soil type, former vegetation community composition, and history of disturbance. Additional exotic annual species, including halogeton, bur-buttercup, Russian thistle, pepperweed and other mustards have also invaded disturbed areas.



Rush skeletonweed. Most known occurrences of non-native plants are associated with the Snake River Canyon and the western portion of the NCA.

Noxious weeds are non-native plants that have been designated “noxious” by State law because of their potential harm to the Idaho economy. The cost of controlling a noxious weed must be less than the harm the weed’s presence does to the State economy (Callihan and Miller 1994, pp vii-viii). No comprehensive noxious weed inventory has been conducted in the NCA. However, from 1996 to 2003, BLM specialists identified 10 noxious weed species in 146 distinct populations in the NCA (Vegetation Table 2.2). Most of these known occurrences were associated with the Snake River Canyon and the western portion of the NCA. Other noxious weed species known in the NCA include buffalobur, field bindweed, leafy spurge, puncturevine, yellow starthistle, and purple loosestrife.



Vegetation Table 2.2. Known Populations of Noxious Weeds and Estimated Area Occupied in the NCA, 1996-2003.

Species	Number of Known Populations				Total
	<0.1 acre	0.1-<1 acre	1-5 acres	>5 acres	
Camelthorn		2			2
Canada Thistle	1	5	1		7
Diffuse Knapweed		1			1
Perennial Pepperweed	7	12	2	1	22
Rush Skeletonweed	2	1			3
Russian Knapweed	8	17	4		29
Scotch Thistle		7	1	1	9
Spotted Knapweed		1			1
Tamarisk ^a		1			1
Whitetop	11	32	8	7	59

^a Currently considered an invasive species.

Wildfire

Prior to European settlement, wildfire frequency in the Snake River Plain was between 35 and 100 years for sagebrush communities and greater than 200 years for salt desert shrub communities (Vegetation Map 4) (USDI 2000b, p12). With the increase of exotic annuals, lightning-caused wildfires began to burn with greater frequency and intensity, and affected larger and larger areas. Seeds of exotic annuals are well suited to survive wildfire, while sagebrush, winterfat, and shadscale, are eliminated by wildfire. In years of average to above average precipitation, fine fuel loads (primarily annual grasses) increase significantly, which results in more acres burned by wildfire. Since 1979, when NCA vegetation was first mapped, the largest wildfires have occurred in the early 1980s, 1995, and 1996 (Vegetation Map 5). These large wildfire occurrences all followed years of average to above average precipitation and contributed significantly to the NCA's current appearance (Vegetation Table 2.3). The burn-reburn interval of the Snake River Plain ecosystem has been forever altered. Once-vast stands of native shrubs have been replaced by large stands of exotic annuals, such as cheatgrass.

Wildfires that are not immediately contained are generally larger and more intense than historic fires. Because of the change in the wildfire regime in much of the Snake River Plain, the rate of shrub loss has far exceeded shrub

regeneration (Whisenant 1990). Consequently, the vegetation in much of the NCA has transitioned from shrub-dominated communities to annual grasslands. Based on 2000-2001 Landsat imagery (USDI 2005c), it was estimated that only 37% of the NCA is currently occupied by big sagebrush, winterfat, or salt desert shrub communities (Vegetation Table 2.3, Vegetation Figures 2.1 and 2.2).



Wildfire near Initial Point. Approximately 50% of the NCA burned between 1980 and 2003, and 32% of that area burned two or more times. (Vegetation Map 5).

Fuel breaks were constructed prior to the mid 1990s, primarily to reduce the effects of human caused fires. Post-fire Emergency Stabilization and Rehabilitation (ESR) efforts were conducted in most burns in an effort to stabilize soils and establish desirable ground cover.



Mechanical Damage

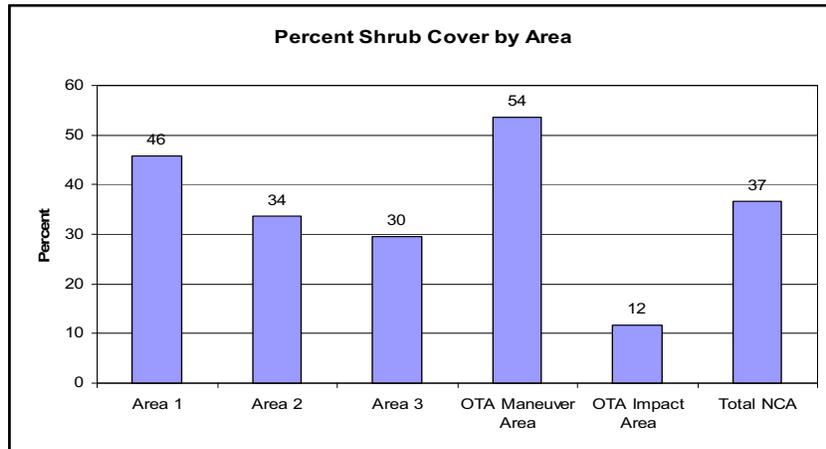
Vegetation and soils are damaged by a number of activities, including off-road recreation, military training activities, livestock trampling, firebreaks, habitat restoration projects, and utility and road right-of-way (ROW) de-

velopments. These activities destroy biological soil crusts, reduce soil fertility, increase susceptibility to erosion, increase establishment of invasive/noxious plants, and fragment habitat.

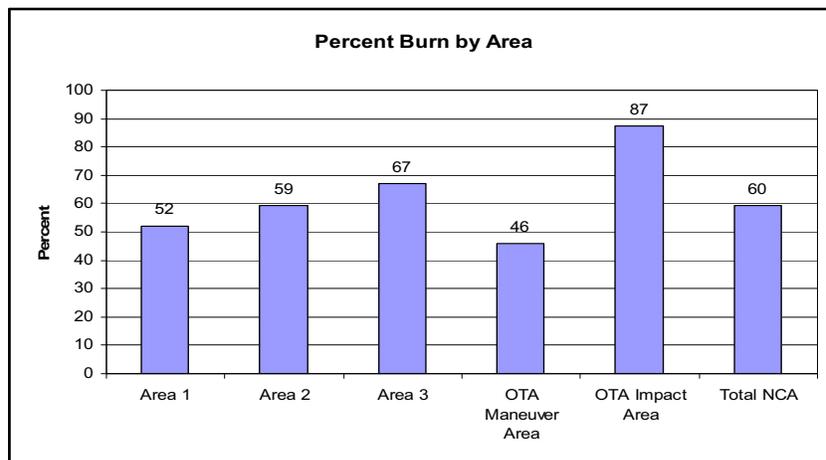
Vegetation Table 2.3. Changes in Spatial Distribution of Vegetation Between 1979 and 1998 for Area 1, Area 2, Area 3, and the Total NCA.

Vegetation Class	Area 1	Area 2	Area 3	Total NCA Change
Big sagebrush	-57.6%	-71.3%	-88.1%	-70.8%
Salt desert shrub	-56.7%	-87.7%	-95.9%	-84.9%
Winterfat	16.2%	-32.3%	36.5%	-3.0%
Herbaceous	256.6%	194.9%	440.3%	263.7%

Vegetation Figure 2.1. Percent Shrub Cover by Management Area.



Vegetation Figure 2.2. Percent of Area Burned Between 1957 and 2004.



Upland-Native Plant Communities

Wyoming big sagebrush communities, once the dominant shrub steppe community in the NCA, currently comprise approximately 17% of the area (Vegetation Maps 2 and 6). These communities have decreased between 57% and 88% between 1979 and 2001 in the different management areas (Vegetation Table 2.3). The communities occur in deeper loamy soils throughout the NCA; however, the largest contiguous stands occur in the northeast portion of Management Area 1. Sagebrush communities in the remaining areas occur in smaller, isolated patches interspersed with exotic plant communities. Approximately 77% of the sagebrush communities have an understory that is dominated by Sandberg bluegrass and/or other native perennial bunchgrasses, including bottlebrush squirreltail and Thurber's needlegrass. Cheatgrass and bur buttercup are usually present in these areas to some degree and may be co-dominants with native species. Biological soil crusts are an important component of these communities. Cheatgrass is the dominant understory grass in the remaining areas. Occasionally, stands of rabbitbrush (approximately 2% of the NCA), broom snakeweed, and Gardner saltbush occur in these soils.



Good quality sagebrush/bunchgrass habitat.

Winterfat communities occur on non-alkaline silty soils in lower precipitation zones north and south of the Snake River, and comprise approximately 6% of the NCA (Vegetation Maps 2 and 6). Winterfat communities increased in Management Areas 1 and 3 and decreased in Management Area 2 between

1979 and 1998 (Vegetation Table 2.3). This community is dominated by winterfat, with an understory of Sandberg bluegrass and other grasses, and such forbs as larkspur, globemallow, and evening primrose. Occasionally there is a patchy overstory of spiny hop sage.

Salt desert shrub communities occur on alkaline soils in lower precipitation zones north and south of the Snake River and comprise approximately 9% of the NCA (Vegetation Maps 2 and 6). These communities decreased between 57% and 96% from 1979 to 1998 in the different Management Areas (Vegetation Table 2.3). Salt desert shrub communities are dominated by shadscale, with varying amounts of bud sagebrush, spiny hop sage, and other shrubs. Perennial bunchgrasses and several species of forbs form the understory. Common forbs include globemallow, larkspur, evening primrose, and hairy wild cabbage.

Native-perennial/exotic-annual grass dominated communities comprise approximately 6% of the NCA, occurring most extensively in the northwest portion of Management Area 3 and in scattered locations in the other management areas (Vegetation Map 6). These communities are co-dominated by Sandberg bluegrass and cheatgrass and occur on a variety of soils. They are primarily the result of wildfires in shrub communities that had relatively intact Sandberg bluegrass understories.

Influences/Disturbances

Wildfire

Remnant shrub communities generally have not been influenced by wildfire within the last 50 years; however, shrub communities where cheatgrass dominates the understory or communities that are adjacent to cheatgrass dominated communities are highly susceptible to being eliminated by wildfire. Sandberg bluegrass is somewhat resistant to wildfire because it becomes dormant relatively early in the year. However, repeated wildfires in these community types could potentially reduce or eliminate Sandberg bluegrass where inadequate ground cover results in soil loss (primar-



ily by wind erosion) and lowered site productivity.



All wildfires in the NCA are aggressively suppressed.

Livestock Grazing

Perennial grasses are most susceptible to livestock grazing during their critical growth period in the spring. The critical growth period varies by species and may extend throughout the growing period for some species, such as Sandberg bluegrass (Kimball and Schiffman 2003). Vigor and productivity decrease and species can be eliminated in areas that receive concentrated use or continual growing season use without rest or deferment. During periods of low cheatgrass production, native shrub and grass communities may receive greater use levels than are appropriate for maintaining these communities. Increased forage consumption negatively alters the nutrient, energy, and hydrologic cycles. Mechanical damage (crushing/breaking) to sagebrush may occur in areas where livestock are concentrated, such as salt grounds, watering sites, or areas where livestock are gathered and sorted.

Invasive/Noxious Species

Invasive and noxious species more readily establish in areas where perennial grasses and/or biological soil crusts are reduced or eliminated because of lack of competition for moisture and nutrients.

Mechanical Damage

Native communities are most susceptible to mechanical damage because their native biological soil crusts have not as yet been compromised. Activities, such as livestock trampling, and off-road recreational and military

vehicle activity compact soils, destroy soil structure, and damage and/or destroy vegetation. The elimination of vegetative cover allows invasive exotic species, especially noxious weeds, to become established. The agents causing the damage are often the vectors for noxious species.

Exotic Plant Communities

Cheatgrass and other exotic plant dominated communities comprise approximately 25% and 22% of the NCA, respectively (Vegetation Map 6). These communities have increased between 195% and 440% from 1979 to 2001 in the different management areas (Vegetation Table 2.3). The communities occur throughout the NCA on a variety of soil types and are generally associated with areas where wildfire and/or other disturbances have eliminated shrubs and perennial grasses. The transition from a vegetation state dominated by cheatgrass to one dominated by Russian thistle, halogeton, or bur buttercup is characterized by a severe loss of soil through wind erosion resulting in reduced site productivity. An additional 3% of the NCA, primarily in the southwest portion, is classified as bare ground.

Influences/Disturbances

Wildfire

During periods of above average precipitation, increased cheatgrass production can result in high fuel levels within these communities. Wildfire return intervals may be as low as 3-5 years during these periods. The continuous, rapid burning fuels often allow wildfires to carry beyond the boundaries of the exotic communities into adjacent shrub dominated communities, thus further reducing the NCA's overall shrub cover.

Livestock Grazing

In most years, livestock grazing has a limited impact on exotic annual plant communities. However, when reduced forage production results from below normal precipitation, excessive removal of annual vegetative cover has led to reduced spring soil temperatures, reduced water-holding capacity, delayed seed



germination, and increased soil loss from wind/water erosion.

Invasive/Noxious Species

Cheatgrass germination and productivity varies significantly with annual fluctuations in temperature and in the timing and amount of precipitation. Production can decline significantly during drought periods. During periods of low cheatgrass production when ground cover is scarce, soils are highly susceptible to erosion. Soil erosion reduces site productivity which can alter site potential making restoration more difficult. Where this occurs, there can be a transition to an even less desirable community where weedy exotic annual forbs (Russian thistle, halogeton, bur buttercup) dominate. This has occurred in highly disturbed areas of the NCA, especially near the Mountain Home Air Force Base.

Mechanical Damage

In areas that have degraded to a cover of annual grasses and forbs, further soil disturbance makes the site more conducive to invasive and noxious weeds, which further increases the pace of habitat degradation.

Seeded Communities

Thousands of acres have been seeded since 1948, with about 7% of the NCA having been treated since 1995 (Vegetation Map 6). Seedings have been used to improve livestock forage production, to improve wildlife habitat, to create greenstrips, to stabilize and rehabilitate areas affected by wildfire, or to restore perennial grasses.

Seeding plantings to improve livestock forage occurred prior to the 1970s. The sagebrush overstory was removed (primarily through the use of chemicals) and the treated area was seeded with crested wheatgrass. These treatments were generally located in the eastern portion of the NCA.

Firebreaks (greenstrips) are linear areas (usually along major roads) where fire resistant vegetation has been established for the purpose of slowing fire spread and facilitating

wildfire suppression efforts, thereby potentially reducing the rate of loss of remnant shrub communities and other high-value resources. Approximately 3,300 acres of greenstrips were established between 1987 and 1994; however, drought conditions, lack of maintenance, and other factors resulted in a low success rate in establishing perennial grasses.



Seeding equipment used for emergency stabilization and restoration projects.

About 7% of the NCA has been reseeded since 1995.

Fuel breaks are used to slow fire spread and improve fire suppression.

Prior to 1990, most reseeded projects involved plowing and seeding. However, since 1990, post-fire emergency stabilization rehabilitation (ESR) seedings have typically been accomplished in the fall with a rangeland drill. Crested wheatgrass was the primary non native perennial grass species used until the mid-1990s, when more hardy species, such as Russian wildrye and Siberian wheatgrass were included in the seed mix. Sagebrush seeds have been broadcast onto many seedings since the mid-1980s. The success rate of ESR efforts depends on a variety of factors including timing and amount of precipitation, type and viability of plant materials used, and application methods. By the late 1990s, approximately one-third of ESR efforts were considered successful (soil stabilization occurred, invasive/noxious weeds were controlled, and vegetation communities returned to pre-fire conditions or better). An additional one-third was considered partially successful (movement toward, but not fully achieving, some or



all of the objectives). These areas would be expected to remain in a relatively static condition with proper management, but would require further treatment to be considered successful. One-third of treatments were unsuccessful and would require restoration efforts to establish desirable plant species.

Few habitat restoration efforts have been attempted in the NCA. In addition, efforts to re-establish shrub cover have had limited success primarily because of drought conditions.

Influences/Disturbances

Wildfire

Seeded communities are generally resilient to wildfire; however, repeated burning and/or improper post-fire livestock grazing can reduce or eliminate bunchgrasses. Reducing the cover of bunchgrasses makes the seeded communities more susceptible to the establishment or increase of invasive and noxious species. Shrubs that have become re-established in seeded communities are eliminated by wildfire.

Livestock Grazing

Reintroducing grazing into seeded pastures prior to complete re-establishment or in numbers too high for vegetation to support has potentially degraded or destroyed many otherwise successful seedings.

Invasive/Noxious Species

Cheatgrass and some other exotic annual plants can take advantage of short bursts of moisture to germinate, grow and mature. This gives them a distinct advantage over perennial plants, whose seeds will either not germinate, or will die from lack of moisture following germination.

Precipitation

Rehabilitation of burned shrub stands through reseedling has had mixed results and has generally been unsuccessful during periods of drought. Big sagebrush and winterfat are native shrubs used in range seedings. Generally, their seeds are viable for up to three years, but

droughts that last more than a year are likely to kill these seeds. Droughts also kill perennial shrubs and grass seedlings, by desiccating them before they are large enough to store sufficient energy reserves in their root systems. Prolonged droughts can also kill established perennial plants by depleting their energy reserves. Energy depleted plants are more susceptible to disease.

2.2.9 Water Quality, Riparian and Wetlands

In 1972, Congress passed Public Law 92-500, the federal Water Pollution Control Act, more commonly called the Clean Water Act (CWA). The goal of this act was to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters" (Water Pollution Control Federation 1987). Federal agencies are responsible for water quality on lands they manage. Water quality best management practices are those practices that are the most effective, practicable, and economic means of preventing or reducing the amount of pollution from non-point sources, which are defined as sources that cannot be pinpointed but that can be best controlled by proper soil, water, and land management practices.

Water Quality

The CWA and the programs it has generated have changed over the years as experience and perceptions of water quality have changed. The CWA has been amended 15 times, most significantly in 1977, 1981, and 1987. One of the goals of the 1977 amendment was to protect and manage waters to insure "swimmable and fishable" conditions. The CWA requires that States and Tribes restore and maintain the chemical, physical, and biological integrity of the nation's waters (33 USC § 1251.101).

States and Tribes, pursuant to Section 303 of the CWA, are to adopt water quality standards as necessary to protect fish, shellfish, and wildlife while providing for recreation in and on the waters whenever possible. Section 303(d) of the CWA establishes requirements for States and Tribes to identify and prioritize water bodies that are water quality limited



(i.e., water bodies that do not meet water quality standards).

States and Tribes must publish a priority list of impaired waters every two years. For waters identified on this list, States and Tribes must develop a total maximum daily load (TMDL) for the pollutants, set at a level to achieve water quality standards. This assessment addresses water bodies that were placed on the "303(d) list" in the Mid-Snake River/Succor Creek Sub-basin and the King Hill-C.J. Strike Sub-basin.

The Sub-basin Watershed Advisory Group (WAG) and the designated agencies played a significant role in the TMDL development process. The WAG and the designated agencies were involved in developing the allocation processes, and their continued participation will be critical while implementing the TMDL.

The IDEQ Mid-Snake River/Succor Creek Sub-basin Assessment and TMDL (IDEQ 2004) and the King Hill-C.J. Strike Sub-basin Assessment and TMDL (IDEQ 2006) each provide a summary for 303(d) listed waters, some of which occur in the NCA (Water Quality Map 1). Summaries include current water quality status, pollutant sources, and control actions in the watershed to date. While not a requirement of the TMDL, DEQ performs assessments to ensure impairment listings are current and accurate. The TMDL is a plan to improve water quality by limiting pollutant loads. Specifically, a TMDL is an estimation of the maximum pollutant amount that can be present in a water body and still allow that water body to meet water quality standards (40 CFR § 130). Consequently, a TMDL is water body and pollutant-specific.

In the Mid-Snake River/Succor Creek Sub-basin Assessment (HUC 17050103), TMDLs were developed for nutrients and dissolved oxygen for the Snake River. Sinker Creek was previously listed for temperature, sediment, and flow alteration. However, the final TMDL established standards for temperature and

sediment, but de-listed flow alteration. Corder Creek was de-listed for sediment.

In the King Hill-C.J. Strike Sub-basin Assessment (HUC 17050101), TMDLs were developed for sediment and nutrients in the Snake River and for nutrients and dissolved oxygen in C.J. Strike Reservoir. Bennett Creek was de-listed for unknown pollutants.

Because the final authority to administer water quality compliance and determine TMDLs is held by DEQ and EPA, it is beyond the scope of this RMP.

Riparian and Wetlands

Riparian areas include approximately 96 miles of Snake River shoreline, including the Bruneau Arm of the C.J. Strike Reservoir, and almost five linear miles of perennial streams, including Bennett Creek, Sinker Creek, and Rabbit Creek, together with several Snake River islands, Bruneau Duck Ponds, Borden Lake, TWMA, several seeps and springs, and some wetland areas which were artificially created by irrigation return flows. With the exception of TWMA and localized segments of the Snake River with dense noxious weed infestations, riparian areas are generally in proper functioning condition and are operating within their capability. Capability is defined as the highest ecological status a riparian-wetland area can attain given political, social, or economic constraints (USDI 1993). These constraints are often referred to as limiting factors.

Upstream of C.J. Strike Dam on the Snake River, the modified stream flow regime, resulting from water impoundment, has inundated historic floodplains under reservoir backwaters. The Snake River no longer functions as a lotic (flowing water) system; instead, the reservoir slack waters have created a lentic (standing water) system. C.J. Strike Reservoir is not used to store water on a seasonal basis; rather, inflows and outflows are close to equal on a daily basis. Reservoir draw-downs for a typical day are 0.3 ft. (Idaho Power Company). As such, the water level in



C.J. Strike Reservoir is generally maintained at or near full reservoir elevation, and this consistent water level has aided development and maintenance of a vigorous riparian obligate plant community (emergent wetland) along the shoreline.

Areas previously occupied by woody upland vegetation are now dominated by riparian species, including hardstem bulrush, cattail, and sedge communities, together with sporadic occurrences of younger-aged native and non-native shrubs and larger trees occurring further inland. Several islands totaling approximately nine acres exist in the reservoir below Loveridge Bridge. Approximately 200 acres of islands are found above Loveridge Bridge in the reservoir's backwaters. Some of these islands have increased in surface area due to silt accretions on the downstream end of the islands. Accretion was especially rapid in 1993 following a large landslide into the Snake River below Bliss, Idaho. Most of the islands are in functioning at risk category with strong to moderate upward trends.

Because the water level in C.J. Strike Reservoir is maintained at a near constant level, inflows and outflows are close to equal on a daily basis. Downstream of the reservoir, however, the volume, timing, and duration of stream flow in this free-flowing section of the Snake River fluctuates significantly as a function of the amount of water being released from the dam at any given time for power generation. The amount of water released from the dam is ultimately controlled by the collective operations of several large upstream hydroelectric, irrigation, and flood control reservoirs (Milner, Minidoka, American Falls, Blackfoot, Jackson Lake, and Palisades), and a natural annual hydrograph no longer occurs here. To further complicate matters, several large irrigation pumping diversions upstream of C.J. Strike Dam remove even more water during the irrigation season (April thru November). BLM has no jurisdiction to control stream flow, timing, or volume of water discharge in the Snake River.

Tailwater fluctuations below the reservoir can be pronounced as flows and are adjusted hourly to accommodate power demand. Peak electrical demands generally occur over a three-hour period. Turbine tailwater discharge is increased in response to peak demand which results in water levels fluctuations of about three feet. A study (Blair 1997, p 73) on behalf of Idaho Power Company quantified the effect peaking flows have on frequency of riparian vegetation. The study concluded that an area ranging in size from 28.3 to 40.7 acres was devoid of riparian vegetation as a result of peaking flows.

The typical flood return interval above bank-full level is 1.6 years in natural stream systems (Rosgen 1996, pp 2-3); however, the benefits from periodic disturbance caused by passage of large ice jams and flooding flows, including sediment recruitment, entrainment and deposition, nutrient delivery, and seed dispersal, occurs only rarely below the reservoir, most recently in 1996.

Most of the free-flowing Snake River segments are moderately entrenched so riparian areas are generally narrow (less than 30 ft.), with wider areas occurring where tributary deposition, tributary mouths, point bars, islands, Bonneville Flood deposits, and low lying terraces are found.

Aerial reconnaissance (Tarter 2003) and review of aerial photographs of the Snake River from C.J. Strike Reservoir to Swan Falls Dam, indicates island and Snake River bank vegetation consists of four basic habitat types:

- 20% Forested Wetland,
- 40% Scrub-Shrub Wetland,
- 30% Shore and Bottomland Wetland, and
- 10% Emergent Herbaceous Wetland.

Snake River riparian areas are generally vegetated by a diverse mix of native and exotic plant species. Native species include cattails, phragmites (a non-native genotype of phragmites is invading North America and is considered an invasive weed in many areas),



sedge spp., reed canarygrass, bulrush spp., grasses and forbs, willow spp., currant, rose, poison ivy, and dogwood. Native and exotic trees are also present, and include cottonwood, western juniper, tree of heaven, green ash, silver maple, boxelder, poplar, locust, netleaf hackberry, and skunkbush sumac. Where the Snake River is entrenched, the steep banks may have little or no hydric vegetation except for coyote willow, and instead, are often occupied by xeric upland species, such as greasewood, sagebrush, and skunkbush, that are often uncharacteristically large and vigorous due to their proximity to water. Where banks and flats are exposed during low water in summer, cocklebur, a moderately poisonous annual weed, is abundant.

Noxious weeds are present along most Snake River riparian zones and may represent the most severe and immediate threat to the biological health of riparian areas and wetlands in the NCA. Noxious weed species include: perennial pepperweed, purple loosestrife, poison hemlock, whitetop, Russian knapweed, Canada thistle, Serbian pea-shrub, and likely many others.

In some areas noxious weeds are the dominant vegetation and have severely damaged the biological functioning condition of riparian areas and wetlands. This is particularly a problem at TWMA where large areas are occupied by purple loosestrife and perennial pepperweed. Functioning condition is functional at risk on an estimated 60% of lentic areas within TWMA because of weed infestation. BLM weed specialists have released golden loosestrife beetle, an introduced predator of purple loosestrife which may naturally control this destructive obligate hydric weed; however, there are no effective predators available to control the expanding infestation of perennial pepperweed, an aggressive weed species that occupies a much broader range of riparian habitats and soil moisture regimes. Chemical treatments with the herbicide Telar, mowing, and tillage are the only reasonably effective suppression methods currently available. Perennial pepperweed stands were successfully

burned in the TWMA in late winter, 2003. Burning was followed by an overlay application of contact and systemic herbicide (Telar). Further herbicide treatment and seeding will continue annually until weeds are sufficiently suppressed and replaced by desirable vegetation. Tamarisk, a weedy shrub, is also present along some riparian areas.

Lotic (flowing water) Condition and Trend

To assess current stream health, methods developed by BLM in cooperation with NRCS and USFS (USDI 1998, p 125) were used which place the biological (plant life) and hydrological (physical) functioning condition of streams into the following five categories:

- **(PFC)** proper functioning
- **(Risk U)** functioning at risk with an upward trend
- **(Risk S)** functioning at risk with static trend
- **(Risk D)** functioning at risk with downward trend
- **(NF)** non-functioning condition.

All streams with perennial flow regimes were examined and rated for functioning condition. Some intermittent (seasonal flow regime) and ephemeral (flowing only in response to rainfall and snow melt) stream segments were examined to determine if flow regimes verified delineations on National Wetlands Inventory maps (1996). Streams were not rated for functioning condition if obligate hydric vegetation was not present.

Overall, 95% of Snake River lotic segments were in PFC, and 5% exhibited Risk D trends resulting from noxious weed infestations. Snake River islands downstream of C.J. Strike Reservoir were all in PFC. Rattlesnake, Bennett, and Sinker creeks were also in PFC; however, a segment of Corder Creek was in Risk D condition, the result of perennial pepperweed infestation.



Lentic (standing water) Condition and Trend

Methods developed by BLM in cooperation with NRCS and USFS were used to assess current wetland health (USDI 1999a, p 109.). The five functioning categories used in lotic assessments were also used for lentic systems; however, the assessment criteria were modified somewhat for standing water environments.

Trueblood Wildlife Management Area

This area is co-managed by BLM and IDF&G for the benefit of waterfowl, upland game birds, wading birds, and songbirds. Trueblood Wildlife Management Area (TWMA) provides an outstanding nesting and brood-rearing resource for resident birds, and a rest and foraging area for a large variety of wading birds, shorebirds, and other migratory bird species. Riparian functioning condition inventories were first performed at the TWMA in 2002 and about 40 acres of wetland was rated functioning at risk with downward trend due to rapidly expanding areas with noxious weed infestations. Following two years of successful weed abatement and seeding efforts by BLM the 40 acre tract was reassessed in February 2005, and rated functioning at risk with strong upward trend.

Water enters the TWMA from an irrigation drainage canal and a roadside ditch that carries flood irrigation return flows from agricultural lands upstream of the wetland complex. The water is then distributed through the wetland and into three ponds. Levels of *E. coli*, nutrients, and sediment are often extremely high in waters entering TWMA; however, Idaho DEQ water quality standards for non-point-source pollution do not apply to waters flowing in artificial conveyances such as ditches, canals, pipelines, or constructed wetlands (Mike Ingam, IDEQ pers. com.).

A recent study conducted by Idaho State University (ISU) (Pappani and Inouye 2003, pp 20-21) revealed that from March 23, 2002, to March 23, 2003, a total of 221 tons of total suspended sediment (TSS) was conveyed into

the wetland via the supply canal. About 19% of the sediment precipitated on the pond bottoms and canal; the remainder was discharged into the Snake River. In addition, large quantities of sediment bedload were discharged into the system, but the volume was not quantified in their study. The ponds and canal will eventually require dredging operations to remove sediment and retain the open water areas.

- The 237 acre TWMA was constructed in 1982.
- It is composed of about 55 acres of open water in three ponds with 182 acres of associated wetland and upland sites.
- The area is not managed as a wildlife preserve, and is regularly hunted for a variety of upland game birds and waterfowl during the open hunting season.
- The area is closed to public access during the spring nesting season (April thru July).

Of chemical pollutants, 61 tons of nitrogen, and 4 tons of phosphorus were brought into TWMA via the supply canal. Nutrient uptake and removal varied depending on the water flow path through the wetland complex. On average, 21% of nitrogen and 40% of phosphorus received, by mass, was removed from water that remained in the primary canal, and did not pass through the wetland complex. However, 67% of total suspended sediment (TSS), 45% of nitrogen, and 60% of phosphorus that entered the wetland complex through one of two available flow paths was removed before being discharged into the Snake River.

Concentrations of total coliform bacteria ranged from 388 colony forming units (CFU) to 85,800 CFU, while *E. coli* concentrations ranged from 0 to 8,600 CFU. The ISU study recommended that an additional pond be constructed, which would enhance the effectiveness of natural water treatment within the wetland complex, and also recommended introducing prescribed fire to periodically remove



aboveground biomass, increase light infiltration, and free nutrients, which would invigorate the plant community and increase nutrient cycling and uptake efficiency by plant life.

At present, portions of the TWMA are in a decadent state as a result of many years without fire. Areas that once supported vigorous plant communities are now reduced to dense, decaying accumulations of biomass where little, if any, light can penetrate. Fire is an essential natural component of healthy wetlands, and is necessary if wetlands are to sustain themselves over time.

Borden Lakes Game Management Area

This 255-acre area is made up of Snake River frontage below C.J. Strike Dam and a marsh on the north side of the Snake River below the dam that receives seepage from the reservoir. The basin in which the lake sits was used as a clay source for the dam core when it was constructed in the early 1950s. The pool at Borden Lake filled after completion of the dam in 1952. Between 1952 and 1987 the lake became a marsh filled with sedges, rushes, and cattails. There was no open water available for waterfowl loafing or nesting. The IDF&G proposed channeling the marsh to provide open water. The channeling and island building was completed in 1988. An 8-inch siphon was built from the reservoir to the marsh to increase water depth so the marsh habitat would be maintained. The siphon process was unsuccessful and since that time, the marsh has shrunk in size from over 30 acres to less than 10. The former marsh area has now become infested with Canada thistle and perennial pepperweed. Roughly five acres of lentic riparian habitat at Borden Lakes rated functioning at risk with downward trend due to weed infestation, the remainder was in PFC. In its new operating license order for C.J. Strike Hydroelectric Project No. 2055-010, issued August 4, 2004, Article 413, Idaho Power Company was directed by the U.S. Federal Energy Regulatory Commission to provide “for the continued supply of water to Borden Lake Game Management Area (GMA) in an

amount sufficient to support the wildlife habitat goals of the GMA.”

The loss of emergent vegetation has reduced the number of nesting northern harriers to two or three pairs. Before the channel/island construction, 8-20 pairs nested in the marsh. The marsh also provided nesting and roosting places for several other species of birds. While use of the area by these birds has been greatly reduced, the area does produce many waterfowl since the channels provide open water. The islands have been overrun by tamarisk, an invasive exotic shrub/tree that does not provide habitat as productive as the native willows. The forested area at the west end of the marsh is being invaded by Russian olive trees.

2.2.10 Visual Resource Management (VRM)

This system, explained in BLM Manual 8400, places landscape units into classes that indicate the overall significance of the visual environment and establishes management objectives for determining the degree of acceptable visual change within a landscape. The VRM objectives for an area are used to evaluate the visual compatibility of a proposed project and to determine if mitigation measures are needed to reduce or eliminate visual impacts. Definitions of the four visual management class objectives are found in the Glossary. The VRM system has two visual classes for public land, an inventory class, and a management class.

The Visual Resource Management system was developed to classify and manage visual landscapes.

Inventory Class

The inventory class is assigned through an objective process, in which Inventory Class I is assigned to areas such as wilderness, wild sections of national wild and scenic rivers (W&SR), and other congressionally and administratively designated areas, where the landscape has a natural appearance without man made intrusions.



Inventory Classes II, III, and IV are based on a combination of scenic quality, sensitivity level, and distance zones. Explanations of each of these are given below.

Management Class

Management classes are assigned during the land use planning process. The assignment of visual management classes is ultimately based on the management decisions made in the planning document and may not necessarily match the inventory class.

A visual inventory of public lands in the NCA was completed in 1980 and, although the visual landscape has changed since that time, the inventory has not been updated. Management classes identified since 1980 are shown on VRM Map 1, and the number of acres in each management class is summarized in the following table.

VRM Table 2.1. Existing Visual Resource Management Classes in the NCA.

Class I	Class II	Class III	Class IV
10,300 acres	21,400 acres	205,700 acres	246,300 acres

A portion of the former Birds of Prey Natural Area and parts of the Oregon National Historic Trail are Class I management areas (VRM Map 1).

Class II management areas cover the remaining part of the old Natural Area, the area around Bruneau Dunes State Park, and a small area around C.J. Strike Reservoir.

Class III areas include the western portion of the NCA, buffer zones along Interstate Highway 84, State Highways 51, 67, and 78, and buffer zones along Simco Road and around C.J. Strike Reservoir.

The remaining central portion of the NCA and small areas in the eastern section are managed for Class IV objectives.

Changes that have occurred in the NCA since the 1980 visual resource inventory include:

- In 1982, a 500 KV transmission line was constructed, which traverses the north and west portion of the NCA.
- New facilities associated with the OTA (Christmas Mtn. Tower, Snake River Training Facility, Ammunition Supply Point, etc.) have been built.
- In 2003, power poles along Swan Falls Road were replaced with towers three times higher.
- Many new structures (houses, storage buildings, U.S. Ecology waste storage site, etc.) have been built on private lands within and adjacent to the NCA boundary, creating a visual impact to the surrounding public lands.
- Visual impacts to the landscape from illegal off-highway vehicle use and cross-country military traffic have increased.
- In addition, natural and human-caused wildfires have changed the vegetative component of the NCA’s landscape.

Three major visual components are inventoried and evaluated in the determination of VRM classes:

- scenic quality,
- visual sensitivity, and
- distance zones.

Scenic Quality

Scenic quality is defined as the degree of harmony, contrast, and variety that influences the overall impression of a landscape. The NCA contains high-quality scenic areas associated with the Snake River Canyon, with exceptional visual value because of variety and harmony.

Modifications can affect scenic quality by either complementing or detracting from the visual landscape. Of greatest concern are modifications that depreciate scenic quality, such as power transmission lines, gravel pits, communication sites, unauthorized off-road vehicle use areas, and illegal dump sites.



Visual Sensitivity

Visual sensitivity is the degree of public concern toward scenic quality and toward existing or proposed visual change within a landscape. Sensitivity levels increase as one moves from the upland desert areas to the Snake River Canyon. The large number of visitors in the western portion of the NCA and along Interstate 84 and State Highways 51, 67, and 78 also increase the sensitivity level of those areas.

Distance Zones

Distance zones refer to the distance from an observer to the target landscape. This distance affects the observer's ability to detect individual landscape elements and changes. Because of the number of travel routes and use areas, much of the NCA is visually accessible. The topography of the area creates two dominant view sheds; the upland desert of the Snake River Plain, and the Snake River Canyon.

The visible areas of the upland desert consist primarily of middleground and background distance zones. Landscape modifications in the middle and background regions of these areas are less noticeable to the casual observer.

In contrast, the confined nature of the Snake River Canyon creates distance zones of primarily foreground and middle-ground. Since areas that are closer have a greater effect on the observer, these areas require the most attention in analyzing and mitigating visual impacts.

The combined effects of scenic quality, sensitivity, and distance zones place a large portion of the NCA in VRM classes with moderate tolerances for modification (VRM Class III and IV). However, there are areas, primarily associated with the Snake River Canyon and along the Oregon National Historic Trail, that have little tolerance for visual impacts (VRM Class I and II).

2.2.11 Wild Horses and Burros

Approximately 3,400 acres of the 51,000 acre Black Mountain Wild Horse Herd Management Area occur in the NCA west of Highway 78 in Owyhee County. Due to the significant amount of off-road vehicle activity, wild horses generally do not use this portion of the NCA, with only about one stray horse being observed each year.

2.2.12 Idaho Army National Guard

The Orchard Training Area (OTA) is located in the NCA approximately 13 miles south of Boise. The two main access routes to the OTA are Pleasant Valley Road, directly south from Gowen Field, and Orchard Road, which leads southwest from Interstate 84. The OTA is located primarily in Ada County, with a small portion in Elmore County.



Military training first occurred on the Snake River Plain in 1941 during World War II when the Army Air Corps established three practice-bombing ranges.

General support facilities for OTA operations, as well as the Idaho Army National Guard (IDARNG) headquarters, are at Gowen Field, located on the south side of the Boise Municipal Air Terminal outside the NCA. Gowen Field is an Air National Guard installation on which the Army National Guard is a joint tenant. The IDARNG State Area Command



Headquarters and its sub-commands are located on Gowen Field.

The IDARNG OTA includes approximately 138,500 acres of BLM-administered federal and State land (Lands Map 1). Acreage figures throughout the IDARNG section in this chapter will include both BLM and State lands. From the World War II era until the 1970s, public lands affected by military training activities extended to the Snake River Canyon. Over the years, however, training activities were moved away from the Snake River Canyon to minimize potential impacts to the raptors that nest along the canyon.

Military Mission

The mission of the OTA is to provide:

- a training area for National Guard and Reserve Forces and where compatible, to other government and civilian organizations;
- administrative assistance, facilities, logistical, and training areas to support units conducting annual and inactive duty training;
- ranges and facilities for small arms and crew-served weapons qualification;
- Maneuver Areas suitable for training heavy armor and mechanized units;
- artillery, gunnery, and small arms training;
- AH-64 Apache attack helicopter gunnery training; and
- organizational and direct support maintenance facilities.

Potential training days (one soldier day training) average per year from 1997 through 2003 in the OTA is as follows:

- Area A (Alpha) = 1,744 training days with 20% of the training
- Area B (Bravo) = 2,209 training days with 25% of training
- Area C (Charlie) = 3,388 training days with 38% of the training
- Area D (Delta) = 1,795 training days with 17% of the training.

Total average training days are 9,136 with the number of soldiers trained fluctuating each year, however, the general trend has been a slight increase. IDARNG Map 1 shows training areas.

Training Area History

During World War II the area was used as a bombing training area by the Army Air Force. In 1953 the IDARNG reached an agreement with BLM that provided a 5-year permit for military use between June 1 and September 30. When this permit expired in 1958, a one-year renewable permit was signed and was renewed each year thereafter. In 1964, the U.S. Marine Corps Reserve Unit in Boise was also granted authority to train on the OTA.

In the early 1970s, the BLM prepared an environmental analysis (EA) for the renewal of the military Special Land Use Permit. Although the EA did not assess the impacts of military training on the environment, the size of the training area was reduced to protect more sensitive areas, particularly land that adjoined the Snake River Canyon. In 1979, BLM and IDARNG signed a Memorandum of Understanding (MOU) to authorize their continued military use of the OTA. The MOU includes a provision requiring that it be reviewed at least every five years for the purpose of addressing new issues or incorporating new requirements as needed. The MOU was first modified in 1985, and again in 2002. This latest amendment extended the term of the MOU to 30 years, and provided for subsequent amendments following completion of the NCA RMP to incorporate those RMP decisions that may affect operational aspects of the OTA. One of the objectives of the MOU is to ensure the safety of the general public, BLM, and military units using the OTA. The MOU requires IDARNG and BLM to mutually develop and maintain law enforcement Standard Operating Procedures (SOP), which include actions providing for the cooperative protection, security, and safety of the resources and people on the public land in the OTA.



Military Training Activities & Natural Resources

Current training in the OTA is primarily conducted by IDARNG units, with National Guard and Reserve units from other States permitted on a space available basis. The MOU excludes active duty military units (such as Mountain Home Air Force Base) from training on the OTA except in support of the IDARNG. Approximately 8,000 to 10,000 soldiers train on the OTA each year. The primary military training period extends from April through July; however, there is seldom a week when there is not some type of training being conducted somewhere on the OTA. Most of the training involves firing weapons on established ranges. On occasion this may include parachute drops of personnel or equipment, which is approved by the BLM on a case-by-case basis. All live weapons firing is conducted in the 53,000 acre Impact Area which is closed to the public for obvious safety reasons. Within the Impact Area is an approximate 3,400-acre site, called the Artillery Impact Area, which is the primary target area for artillery. As such, the Artillery Impact Area contains the bulk of the unexploded ordnance found within the larger Impact Area (IDARNG Map 1).



The OTA contains one of the largest most sophisticated automated tank ranges in the United States. This range accommodates gunnery training for Abrams Tanks, Bradley Fighting Vehicles, and Apache Helicopters.

The 85,500 acres surrounding the Impact Area are available for use by the IDARNG for military maneuver training. However, only a portion (approximately 35%) of the 85,500 acres is used for off-road maneuver training. This area is also used for livestock grazing and dispersed public recreation.

To protect shrubs, heavy maneuver exercises are voluntarily restricted to non-shrub areas. Light maneuvers are allowed in shrub areas, but must avoid heavy shrub stands. Firing pads and lanes on established ranges have been stabilized by gravel or cinders. Repeated wheeled and tracked vehicle passes over the same area can alter vegetation composition or destroy vegetation and turn the soil structure to a flour-like consistency and expose it to wind erosion. Convoy movements are restricted to established roads to minimize this impact and training is scheduled to avoid excessive use of any one area.

Assembly areas are located in annual grass areas. Access to areas by established roads must be possible, particularly with sites that require a heavy flow of traffic. No vegetation may be cut for camouflage. Placement of chemical toilets and trash collection containers follows the same criteria.

One five-acre site on State land is the only excavation area available for combat engineers to practice building tank traps and other surface disturbing activities. Excavation activities have the potential to disturb archaeological sites and cause soil disturbance that destroys native vegetation and opens these areas to invasion by exotic annuals.

Temporary drop zones have been authorized in the past on a case-by-case basis. These are approved only after adequate environmental documentation, and after appropriate mitigation measures have been established and are determined to be consistent with the enabling legislation and MOU.



Natural Resource Management

Natural resource management began on the OTA in 1987 with the implementation of the Integrated Training Area Management (ITAM) program. This Army wide program established vegetation monitoring and developed educational materials to train soldiers how to protect the environment while accomplishing their training mission.

The IDARNG, as both a federal and a state agency, is required to comply with the same environmental laws and regulations as other federal land management agencies. Department of Defense (DoD) and Department of Army regulations and policies provide further implementation guidance. Included in this guidance is the requirement for the IDARNG to implement an Integrated Natural Resource Management Plan (INRMP) for the OTA. The INRMP is an internal DoD plan that sets forth goals and objectives for natural resources management on the OTA for a five-year period and is reviewed and revised on a yearly basis.

Every soldier participating in training on the OTA is required to attend an environmental awareness and safety briefing at least once each year. This combination video and scripted discussion addresses numerous environmental topics, and emphasizes the avoidance of shrub stands, staying out of restricted areas (primarily slickspot peppergrass areas, playas with Davis peppergrass, and cultural sites), fire prevention, and training tactics which minimize damage to vegetation, soils, and wildlife.

Vegetation Management

Since 1989 the IDARNG has annually monitored over 200 permanent vegetation plots in the OTA. These “core plots” were established to determine the long term impacts of military training on vegetation. The monitoring data indicate that sagebrush population trend on the OTA is stable both in plant density and average height. Although the IDARNG has restricted maneuver activities from heavy shrub areas since 1989, information gained from this

monitoring assists IDARNG in managing types, levels, and locations of training to minimize impacts on soils and shrub communities. Additional plots were established to provide information on the effectiveness of rehabilitation efforts.

Military training activities are restricted in some areas to protect sensitive plant species (i.e., slickspot peppergrass and Davis peppergrass) and cultural sites. Additional restrictions are imposed on a temporary basis to protect research study sites and plant rehabilitation areas. Since 1991, IDARNG has protected slickspot peppergrass populations from off-road maneuver training. Since this protection was implemented, no slickspot peppergrass has been impacted or destroyed by military activities. In addition, to enhance fire protection (see Fire Suppression and Prevention section below) additional firefighters are on duty during fire season, even during periods when no training activities are occurring.

The IDARNG environmental staff has broadcast seeded native species on approximately 800 acres a year since 1990. These rehabilitation projects range in size from 1 to 640 acres, with most occurring in historic burned areas (more than 20 years old). Due to the unpredictability of rainfall, some areas have been seeded several times in successive years to the same and/or additional species. It is estimated that approximately 10% of the treatments have been successful.

To prevent introduction of noxious and non-native invasive plant species, the IDARNG has a policy requiring all vehicles from outside the Treasure Valley area to be washed prior to entering the OTA. A tactical vehicle high pressure wash facility is maintained on adjacent State land at the Mobilization and Training Equipment Site (MATES) facility for that purpose. Annual surveys are conducted to identify weed areas and BLM is provided with the information. Many small weed infestations are controlled by hand weeding by IDARNG. Monitoring data indicate that while the number of non-native species varies greatly from



year to year, depending on precipitation patterns, the long-term trend seems to be stable on the OTA (Bern, 2006).

Fire Suppression and Prevention

During the fire season, live weapons firing has the potential to start fires, and when fire danger is high, IDARNG fire crews and equipment are stationed in the area to provide immediate response. Firefighters employed by IDARNG are required to meet National Wildfire Coordinating Group (NWCG) standards as stated in the Wildland and Prescribed Fire Qualification System Guide (Document 310-1). Fires that occur in the OTA must be immediately reported to Range Control. During the fire season, use of pyrotechnics must be coordinated with the Range Officer, and often a daily determination of their allowable use is made after all factors have been examined. Slickspot peppergrass habitat and existing shrub stands receive the highest protection priority. All fires are extinguished as quickly as possible. In addition, to enhance fire suppression capability, BLM issued IDARNG a right-of-way to construct and maintain about 70 miles of bladed fire breaks in the Impact Area. Further, BLM authorizes IDARNG on an as-needed basis to conduct limited controlled burns near live-fire targets.

Cultural Resource Management

Since 1989, under the requirement of a Memorandum of Agreement with BLM and the State Historic Preservation Office, IDARNG has been monitoring 28 significant archaeological sites in the OTA. This long-term monitoring data has indicated no negative impacts to any of the known sites due to military activities. The only site that shows a downward trend from other than natural processes is the Higby Cave site, which has suffered significant public vandalism.

In 2003 the IDARNG implemented an Integrated Cultural Resource Management Plan for managing and monitoring cultural re-

sources in the OTA. The Shoshone-Paiute Tribes of Duck Valley assisted in the development of this plan and provided official tribal endorsement. In 2005 and 2006, a Class III cultural survey was conducted on 20,000 acres of the OTA. The IDARNG surveys areas prior to construction or new surface disturbance and meets with the Shoshone-Paiute Tribe monthly to ensure military activities will not impact sites significant to the Tribe.

Public Use

BLM annually sponsors a meeting between IDARNG and ranchers who graze livestock in the OTA to coordinate spring grazing and military training activities. Grazing activities take priority over Army National Guard gunnery in the northern portion of the Impact Area during the month of April. Additional coordination occurs throughout the year.

Public recreational use and illegal trash dumping have increased in the OTA over the last several years, probably in direct correlation with the overall population increase in the Treasure Valley. In addition, the 1996 designation of the Plateau shooting management area immediately north of the OTA (Recreation Map 4) appears to have resulted in increased use of the northern portion of the OTA for recreational shooting. When members of the public are recreating or conducting other activities in portions of the OTA where training exercises are to be conducted, they may be contacted by IDARNG personnel to inform them about potential conflicts and safety issues.



Increased shooting along with other recreational uses poses potential safety concerns.



Road System

Approximately 118 miles of improved roads are routinely maintained by the IDARNG, with roughly 120 miles of unimproved trails receiving occasional maintenance. Two county roads provide main access to the OTA (IDARNG Map 1). Pleasant Valley Road provides direct southbound access to the northern boundary of the OTA. An unpaved tank trail is maintained along the paved portion of this road, and general road maintenance south of the Union Pacific Railroad tracks is done by the IDARNG. The northeastern part of the training area can be reached via the Orchard Road exit from Interstate 84. Standifer Road begins in the northern part of the OTA, branching southeast from Pleasant Valley Road and traversing the northeastern side of the training area, connecting to Range Road and Orchard Road near the Snake River Training Facility. The eastern portion of the training area can be reached via Simco Road. Range Road encircles the Impact Area and connects to Pleasant Valley, Standifer, and Cinder Cone Butte Roads.

Water Supply

There are two wells on the OTA. One is located at the Snake River Training Facility (IDARNG Map 1), which provides water for troop usage, maintenance, and fire fighting activities. The second well is located at the Ammunition Supply Point facility. Any water required by troops during training activities must be obtained from one of the two wells and hauled to their location.

Compatibility

In 2003, under a BLM contract, the Environmental Assessment Division of Argonne National Laboratory evaluated the effects of military and non-military activities occurring in the OTA (Argonne National Laboratory 2004). It stated in part, “Past training activities have contributed to the many environmental changes that the NCA and OTA have undergone since the 1950’s and have likely affected raptors and their habitats. However, current training activities appear to be fully compatible with those NCA goals.”

While the assessment stated that the military’s use of live munitions has resulted in the release of a variety of chemicals, many of which have been shown to elicit adverse responses in laboratory animals, and in some cases in vegetation and wildlife at other locations, current information is unavailable regarding the accumulated levels of munitions-related chemicals in the OTA environment or their effects, if any, on the biota using the OTA. The assessment did recommend further soil testing to determine if sufficient levels of munitions-related chemicals were present to affect raptors and other biota. Regardless of the potential effects on NCA biota, however, possible heavy metal accumulation and unexploded ordnance in the Impact Area is a public safety hazard. This public safety hazard is mitigated by the Ada County Ordinance that designates the Impact Area as off-limits to the public.

Cross-country (off road) vehicle travel in native shrub communities is incompatible with the purposes for which the NCA was established because of the adverse effects to soils and vegetation. IDARNG policy has restricted maneuver in heavy shrub stands since 1991.

2.2.13 Lands and Realty

The NCA manages approximately 483,700 acres. Uses of the land are diverse ranging from military training to grazing, wildlife habitat, and recreation. The current land use environment is determined by the NCA-enabling legislation.

Requests for use of lands in the NCA range from temporary permits for such things as beehives, to long-term ROW authorizations for pipelines, power lines, telephone lines, and road systems. Lands Table 2.1 shows the NCA’s average annual realty workload. Each application requires a site-specific analysis under the requirements of the NEPA. If an authorization is issued, subsequent field examinations are performed to ensure the grant holder complies with terms and conditions of the grant or permit. Approximately 8 to 14 compliance inspections occur annually.



Trends over the indicated period are reflective of what is happening on adjacent or nearby private lands. The bulk of this use has been occurring nearest to the populations centers

located along the northern portion of the NCA. It can be expected that uses will continue at current levels or higher for the foreseeable future.

Lands Table 2.1. Number of Realty Cases Completed, 1993 to 2005.

	'93	'94	'95	'96	'97	'98	'99	'00	'01	'02	'03	'04	'05
R/W's Granted	8	7	4	5	11	7	5	6	10	10	11	14	10
R/W Compliance	3	2	0	6	9	1	10	5	11	5	6	18	20
Leases	1	0	0	0	0	0	0	0	0	1	0	0	0
Permits	0	0	0	0	0	1	0	0	2	0	1	3	3
Permit Compliance	8	0	0	0	1	2	1	2	6	6	2	2	4
Access Easements	1	0	0	0	0	1	0	0	1	0	0	0	0
Disposal Exchanges	3	0	0	0	1	0	1	1	0	1	2	0	1
Acquired Land													
Purchase	1	0	0	0	0	1	0	0	2	3	1	3	2
(LWCF) Donations	0	0	0	0	0	1	0	0	0	0	0	0	0
Unauthorized Use													
New Cases est.	2	0	4	0	0	2	2	2	1	1	1	1	2
Cases Closed	0	0	0	0	0	0	0	1	1	1	0	0	2

A number of withdrawals, primarily along the Snake River, have segregated several hundred acres of public land. They include projects for proposed water impoundment areas, power transmission lines, and irrigation projects. Most of the withdrawals were initiated between 1910 and the mid-1950s when addi-

tional irrigation and hydroelectric dam projects were being proposed along the Snake River. Only the Swan Falls and C.J. Strike Dams and Reservoirs are within the boundary of the NCA. The following withdrawal orders are currently noted within the NCA.

Lands Table 2.2. Federal Land Withdrawals in the NCA.

Order Type	Order Date	Withdrawal Purpose	Action Number
Executive	07-02-1910	Power Site	Reservation 77
Executive	07-02-1910	Power Site	Reservation 117
Secretarial	06-22-1915	Boise Reclamation Project	
Secretarial	05-22-1922	Power Site	Class. 365
Federal Power Comm.	05-18-1924	Power Project	503
Secretarial	08-10-1944	Power Site	Class. 365
Federal Power Comm.	05-16-1952	Power Project 50' wide transmission line	2085
US Geological Survey	08-15-1955	Power Site	Class. 435
Federal Power Comm.	12-26-1956	Power Project	2055 Boundary
Federal Power Comm.	06-18-1969	Power Project	503 Proposed
Public Land	09-23-1959	Mountain Home Reclamation Project	1992
Public Land	09-23-1959	Snake River Reclamation Project	1992
Public Land	01-15-1962	Snake River Reclamation Project	2588
Public Land	02-09-1967	C.J. Strike Wildlife Management Area	4153



The Lands and Realty program was significantly affected by the 1993 NCA enabling legislation, which withdrew public lands in the NCA from all forms of entry, application, and disposal under the public land laws in general, and the following specific statutes:

- Desert Land Act (43 U.S.C. 321 *et. seq.*) as amended
- Carey Act (28 Stat. 422) as amended
- State of Idaho Admissions Act (26 Stat. 215)
- Section 2275 of the Revised Statutes (43 U.S.C. 851)
- Section 2276 of the Revised Statutes (43 U.S.C. 852).

In addition to the application-generated work for ROW, leases, permits, etc., there is an ongoing need to investigate and resolve unauthorized use and to evaluate potential land tenure adjustment opportunities. Section 5(a) of the enabling legislation authorized acquisition of lands through donation, purchase, exchange, or transfer from another federal agency, except that lands owned by the State of Idaho may only be acquired through donation or exchange. Section 5(c) of the Act specifies that funds for direct purchase of lands or interests therein within the NCA may be appropriated either under the authority of FLPMA or the Land and Water Conservation Fund Act of 1964.

The 138,500-acre OTA represents almost 30% of the acreage in the NCA, with the 85,500-acre Maneuver Area occupying about 60% of the OTA. Because IDARNG is required to meet escalating training requirements and readiness standards, they are seeking opportunities to enhance their current maneuver training capabilities.

BLM has developed a nationwide policy to withdraw public lands to the Department of Defense (DoD) that contain military-related hazardous chemical contamination or unexploded ordnance. As such, under all alternatives, BLM will be submitting a proposal to Congress to withdraw the approximate 53,000 acre OTA Impact Area to the DoD to mitigate

the liability related to past and ongoing munitions-related chemical soil contamination and unexploded ordnance.

Although the Mountain Home Air Force Base is located adjacent to public lands in the NCA, Air Force activities, including Military Operations Areas, do not affect the NCA.

The current location of the NCA boundary makes it difficult for the public to know what is or isn't included, and also makes managing the area difficult. To remedy this situation, BLM is proposing to realign the boundary on easily identified landmarks, such as roads, powerlines, railroads, etc. This change would require Congressional approval.

The 1983 Kuna Management Framework Plan (MFP) identifies a utility corridor running parallel to and north of Interstate-84 from Boise to Hammett, which affects a very small section of the NCA lying east of Mountain Home. This corridor contains ROW for petroleum pipelines, electrical powerlines, and fiber optic cables (Lands Map 2).

Lands within the NCA are generally open for the full range of compatible uses, with the following exceptions:

1. The 53,000-acre OTA Impact Area is closed to public access because of safety concerns associated with ongoing tank, artillery, and small arms firing and unexploded ordnance (IDARNG Map 3).
2. Approximately 1,300 acres extending along the north side of the Snake River Canyon from the USGS gauging station downstream to the Ada and Canyon County border is set aside for non-motorized uses (Transportation Map 2).
3. Approximately 43,000 acres on the south of the Snake River from Henderson Flats downstream to Guffey Butte have been designated as an avoidance or exclusion area for major realty actions, due to recreational controls (Owyhee Front), sensitive plant issues and paleontological concerns (Lands Map 3).



Lands Table 2.3. NCA Land Disposals and Acquisitions from 1988 to 2005.

	1990	1991	1993	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Access Easements	4	0	5	0	0	3	0	0	5	0	0	0	0
Purchases	0	344	0	0	0	0	0	0	0	149	0	320	979
Exchange Acquisitions	120	0	353		1280	672		34	0	8	76	0	170
Exchange Disposals	103	0	936	80	840	262	0	100	0	160	36	0	309
Donations	0	0	0	0	0	0	40	0	0	0	0	0	0
Conservation Easements	0	344	0	0	0	0	0	0	0	2120	0	0	0

No land tenure adjustments occurred in years not shown.

Since 1983, approximately 2,713 acres have been acquired and about 2,826 acres have been disposed of in land exchanges. In addition, a conservation easement was purchased on about 2,120 acres of private land to restrict future incompatible commercial, residential, or industrial developments. In 1998, 40 acres of private land was donated by an individual for inclusion within the NCA.

2.2.14 Livestock Grazing

Prior to 1934, ranchers were allowed unrestricted use of public land. In 1934, the Taylor Grazing Act was passed to address concerns about resource degradation caused by common and unrestricted grazing on the open range of the U.S. The Act established a system for: 1) allocating grazing privileges to livestock operators based on grazing capacities and priorities of use, and 2) delineating allotment boundaries and establishing grazing fees. The Act placed 142 million acres of land in western States under the jurisdiction of the Grazing Service, which along with the General Land Office, evolved into the BLM in 1946. The 1976 Federal Land Policy and Management Act (FLPMA) and the 1978 Public Rangelands Improvement Act (PRIA) provided additional authority for managing livestock grazing on public land.

The NCA enabling legislation provides that “...(1) *So long as the Secretary determines that domestic livestock grazing is compatible with the purposes for which the conservation area is established, the Secretary shall permit such use of the public lands within the conser-*

vation area, to the extent such use of the lands is compatible with such purposes.” Compatibility determinations will be made in this RMP.

Permittees have leases for grazing on State lands, which are managed by BLM as a part of the overall allotment. The approximate permitted use for the NCA is 44,000 animal unit months (AUMs) and the approximate average actual use for the past ten years is 28,500 AUMs. With the extended drought and invasion of exotic annuals, many permittees have taken voluntary non-use or reductions in use ranging from 25-50% of their permitted use.

The Sunnyside Spring/Fall Allotment (S/F Allotment) and Sunnyside Winter Allotment (Winter Allotment) are the two largest allotments, comprising about half of the NCA (Grazing Map 1). General seasons of use for NCA allotments are as follows:

- Spring: April 1 to June 30
- Fall: October 15 to December 14
- Winter: December 15 to March 31

The OTA extends across both the S/F and Winter Allotments. Approximately 14,500 AUMs of licensed use within the S/F and Winter allotments are allocated within the OTA, of which approximately 5,800 AUMs are within the Impact Area.

Appendix 10 shows the permitted AUMs, season of use, and kind of livestock for all NCA allotments.



Due to military training schedules and safety considerations, livestock operators' access to the Impact Area is coordinated with the IDARNG. IDARNG tank, artillery, and small arms firing have reduced accessibility of the area to operators and livestock during the grazing period. For safety reasons, permittees cannot access the approximately 3,400 acre Artillery Impact Area (IDARNG Map 1, and access is limited in the remainder of the Impact Area. Thus, a portion of the forage allocated to livestock is ungrazed each year. In 1994, the S/F Allotment was formally reduced by 2,394 AUMs. The IDARNG purchased these AUMs, and BLM subsequently retired the AUMs through a grazing decision.

Loss of perennial plant communities, fluctuating annual forage production, lack of permanent water, and the continuing trend of exotic annual species expanding into the NCA is re-



The NCA currently contains 34 allotments on approximately 483,700-acres of public land. Within these allotments are State lands. Over the past decade, permittees have taken voluntary reductions ranging from 25 – 50% of their stocking rates (See Appendix 10 - Grazing Table 1)

sulting in reduced stocking levels and highly fluctuating annual forage production. Since 1996, several smaller allotments have been split off from the S/F and Winter Allotments through rangeline agreements, which reduced the competition for forage that existed when several permittees grazed within a common use area.

Growth of annual exotics (e.g., cheatgrass) is strongly influenced by precipitation. The timing of precipitation and growing degree-days are important factors and are critical to growth levels on annual dominated rangelands (Vegetation Table 2.1).

The downward trend in stocking rates is in part the result of:

- the change from perennial plant communities to an annual grass community;
- a further change from annual grass communities to other invasive exotics, causing even less dependable forage from year to year; and
- an increase in the number and size of fires that have further eliminated the forage available for livestock grazing.

The permitted use levels were determined in the mid 1960s, and the forage needed to support these levels is no longer available and is not likely to return without extensive intervention. The allotments and/or pastures identified in Grazing Table 2.1 below have crossed ecological thresholds and will not improve through livestock management alone, thus they require restoration efforts to improve ecological functions.

The allotments or pastures identified on Grazing Map 7 support sufficient perennial vegetation to respond to grazing management. These pastures and allotments were identified and determined by the S&G assessments.



Grazing Table 2.1. Allotments or Pastures to be Managed as Exotic Annual Rangelands.

Allotment No.	Allotment Name	Pasture(s)
386	White Butte	<i>Entire allotment</i>
825	Sunnyside Spring/Fall	Common Area outside the Slickspot peppergrass Kuna Management Area.
826	Sunnyside Winter	<i>Entire allotment</i>
827	Rattlesnake Seeding	New Field, Rock Dam, Small Arms #2, Airbase, Hog Farm, West Lamberton, Pastures 1, 2 and 3
834	Rattlesnake Creek	<i>Entire allotment</i>
837	Rabbit Springs	<i>Entire allotment</i>
868	Melba Seeding	<i>Entire allotment</i>
873	Reverse	Pastures 1, 2, 3, 4, 5 and 6
875	Chattin Hill	<i>Entire allotment</i>
886	Squaw Creek	Farm to Market, Crater II Seeding, East Rockhouse, RockHouse West, Small Arms II
887	Simco	<i>Entire allotment</i>
896	Airbase	<i>Entire allotment</i>
899	Medbury Hill	Pastures south of Highway 30 (2)

Cover is another important component influencing production levels. Ground cover (litter) is important to protect soil against evaporation and improve infiltration of precipitation into the soil. Litter also provides a thermal cover, which allows the forage plants to optimize early season growth. Plant overstory (shrubs, tall perennial grass) and aspect of range site are also key components that affect forage production because wind is a significant factor influencing soil moisture evaporation. In summary; vegetative production may not always fluctuate in a direct correlation to precipitation. Production potential in the NCA also depends upon location and site characteristics.

A 1997 Environmental Assessment (USDI 1997a) identified livestock grazing as a tool which could be used to reduce hazardous fuels. About 1,500 acres of fuel breaks were identified that could potentially benefit from livestock grazing of excess fuel. To date, only 200 acres have been grazed for this purpose. The program has been limited by the lack of operators who are either interested or able to adequately manage their livestock in the manner required to achieve the desired results (Grazing Map 3).

Some grazing permittees change the locations of water troughs in an attempt to rotate livestock use areas during different years to provide rest for the forage. However, frequent forage shortages preclude resting most areas in a given year, which limits our ability to improve perennial vegetation. Without specific habitat restoration or rehabilitation projects, resting cheatgrass-dominated communities from grazing does not improve the sites for perennial species.

The December 2003 slickspot peppergrass CCA incorporates changes in grazing management to reduce impacts to this SSP (Governor’s Office of Species Conservation *et al.* 2003). The CCA describes five management areas (Special Status Plant Map 1) that fall wholly or partially within the NCA. Livestock grazing in these areas is more strictly managed through a number of methods, including herding, restricting placement of supplements and water; eliminating spring grazing, limiting livestock trailing; fencing; and constructing livestock exclosures. Conservation measures contained in the CCA are included in all affected grazing permits (Grazing Map 2).



Virtually all the livestock grazing in the NCA is upland grazing. Following completion of a Biological Assessment to determine the potential effects of livestock grazing on Idaho Springsnail and the bald eagle, BLM has restricted livestock access to the Snake River and its tributaries. There are no sheep grazing permits in riparian areas. For additional information on the Idaho Springsnail, see Special Status Animals Section 2.2.6.1 above.

The 340-acre Priest Ranch, located on the south side of the Snake River, was purchased in the early 1980s for wildlife habitat. As such, it was never added to any grazing allotment, and remains closed to livestock grazing (Grazing Map 4). Pasture 8B of the Battle Creek Allotment is unallocated. The TWMA and Gold Isle are also closed to grazing.

Standard and Guides assessments and determinations have been completed on many of the grazing allotments in the NCA. The remaining allotments will have S&G assessments and determinations completed by 2009 (See Appendix 10 – Grazing Table 1). The purpose for S&G assessments is to determine whether allotments or portions of allotments are meeting the eight standards for proper rangeland health. If the assessments determine that one or more standards are not being met, grazing decisions are issued which include measures designed to mitigate the impact and to bring the allotments into conformance with the standards. These changes could include such measures as timing, seasons, duration, etc.

2.2.15 Mineral Resources

The act establishing the NCA withdrew the entire area from all forms of mineral entry.

- Only “grandfathered” mining claims and existing mineral material sites were allowed to continue,
- No new mineral material sites can be established,

- No new mining claims can be located, and
- No mineral leases can be authorized within the NCA.

Geologic Overview

The NCA is located in the western Snake River Plain physiographic province. The western Snake River Plain is a northwest trending, fault bounded structural depression about 35 miles wide that extends from the Twin Falls area on the southeast to Hells Canyon on the northwest. The surface consists primarily of Quaternary basalt flows underlain by Tertiary fluvial and lacustrine sediments over 1,000 ft. thick. In the NCA, the Snake River has cut a deep canyon in the lake deposits. The basalts have repeatedly filled the canyon over the past 100,000 years and subsequently been eroded by the Snake River forming a new canyon. The Snake River Canyon is a predominate surface feature in the NCA and provides an important nesting habitat for the raptor populations that inhabit the area.

2.2.15.1 Leasable Minerals

Leasable minerals include oil and gas, geothermal steam, coal, and certain non-energy minerals, such as phosphate, sodium, and potassium. There are no mineral leases in the NCA and the area is closed to leasable mineral entry and disposal.

2.2.15.2 Mineral Materials

Salable minerals include sand and gravel, building stone, clay, cinders, decorative rock, limestone, and petrified wood. The NCA contains approximately 45 mineral material sites that are either currently authorized or have been authorized in the recent past and have remaining reserves of mineral materials (Minerals Map 1, Appendix 11). Of the 16 currently active sites, five are community pits that contain sand and gravel, clay and cinders which are available to the public through the sale of permits. The other 11 sites are free use permits used by the State and County highway districts and the IDARNG for road construction and maintenance.



2.2.15.3 Locatable Minerals

Locatable minerals include metallic minerals such as gold, silver, lead, zinc and mercury and non-metallic minerals such as bentonite, diatomite and zeolite. Also included in this category are gemstones and semiprecious minerals such as jasper, opal and agate. Under the NCA enabling legislation the area is closed to locatable mineral entry and disposal.



The NCA provides a variety of dispersed and developed recreational opportunities and is considered a globally important birding area.

BLM may dispose of mineral materials from unpatented mining claims if disposal does not endanger or materially interfere with prospecting, mining, or processing operations, or uses reasonably incident to the activity.

2.2.16 Recreation

The NCA-enabling legislation states that “...the secretary may provide for visitor use of the public lands in the conservation area to such extent and in such manner as the Secretary considers consistent with the protection of raptors and raptor habitat, public safety, and the purposes for which the conservation area is established.”

Distinct differences exist in the location, amount and type of recreation use in the NCA. These differences result from a combination of

road access, the proximity to population centers, and the two major topographic features (the Snake River Plain and the Snake River Canyon). Presently, the western third of the NCA (Management Area 1) and the C.J. Strike Reservoir area (Management Area 2) receive most of the recreational use. Because the NCA can be accessed by over 50 roads or trails, it is extremely difficult to get reliable estimates of visitor use throughout the area. However, our best estimates to-date set average annual recreational visitor use for the NCA at around 175,000 visits, most of which occurs in the western portion of the NCA and along the Snake River Canyon and C.J. Strike Reservoir. The NCA has participated in two visitor use surveys (2003 and 2006) to comply with the Government Performance and Results Act (GPRA). These surveys were developed to measure the degree to which the BLM is providing a quality recreation experience and providing for fair value in recreation.

Recreational uses on the Snake River Plain are predominately dispersed activities and include off-highway vehicle use, recreational shooting, wildlife viewing, geocaching, and horseback riding. The Snake River Canyon provides opportunities for activities such as fishing, camping, float and power boating, hiking, mountain biking, horseback riding, waterfowl hunting, and parasailing.

Recreation use occurs year-round with visitor use being highest in the spring and early summer months and lowest during winter months. Over the past 10 years, as the population of the Treasure Valley has increased, use during the summer and fall has also increased.

Special Recreation Management Areas

The 1996 NCA Management Plan designated the entire NCA as a SRMA. However, when the NCA was first designated, it covered portions of four field offices that already had existing SRMAs. This resulted in overlapping SRMA designations (Recreation Map 1).



Snake River Birds of Prey National Conservation Area SRMA

This SRMA encompasses the entire NCA (483,700 acres), and was designated in 1996 for the following primary values: (1) wildlife, (2) education, (3) recreation, and (4) scientific study. Overall management objectives are to preserve the high-quality scenic, recreational, wildlife, and cultural values and to enhance opportunities for high-quality outdoor recreation experiences, environmental education, and scientific studies while maintaining the integrity of the area's natural environment and cultural resources. The SRMA is managed for semi-primitive non-motorized, semi-primitive motorized, and roaded natural recreation opportunities and experiences.

Improved recreation sites within the SRMA include Cove Recreation Site, Dedication Point, and Rabbit Creek Trailhead (Recreation Map 3). In addition to these improved sites, the following areas receive a significant amount of recreational use:

- Kuna Butte
- Kuna Cave
- Initial Point
- Crater Rings
- Halverson Bar
- Halverson Lake
- Trueblood Wildlife Management Area.

Snake River Birds of Prey SRMA

The SRMA includes 50,100 acres located west of Castle Creek and north of State Highway 78. The SRMA was designated in December 1999 in the Owyhee RMP (USDI 1999b) for wildlife and recreation values; however, due to recent administrative boundary changes, the SRMA is now located wholly within the NCA and Four Rivers Field Office. Overall management objectives are to preserve the outstandingly remarkable and high-quality wildlife and scenic values and to enhance opportunities for high-quality environmental education and scientific studies while maintaining the integrity of the area's natural environment and cultural resources. The SRMA is managed

for semi-primitive motorized and roaded natural recreation opportunities and experiences.

Rabbit Creek Trailhead (Recreation Map 3) is the only improved recreation site in the SRMA.

Oregon Trail SRMA

This 3,300-acre SRMA is located north and west of Castle Creek, and was designated in 1999 as part of the Owyhee RMP primarily for its historic and cultural values (USDI 1999b). As with the above Snake River Birds of Prey SRMA, the Oregon Trail SRMA was originally located in the Owyhee Field Office, but due to recent administrative boundary changes, the SRMA is now located wholly within the NCA and Four Rivers Field Office. Overall management objectives are to preserve the outstandingly remarkable and high-quality historic, cultural and scenic values and to enhance opportunities for environmental education and scientific studies while maintaining the integrity of the area's natural environment and cultural resources. The SRMA is managed for semi-primitive non-motorized recreation opportunities and experiences. There are no developed recreation sites in the Oregon Trail SRMA.

Owyhee Front SRMA

A small portion (6,300 acres) of the Owyhee Front SRMA is located within the NCA boundary, west of Highway 78 near Murphy and near Sinker Creek. The SRMA was designated in 1999 in the Owyhee RMP primarily for recreation values (USDI 1999). Overall management objectives are to preserve the high-quality recreational values and to enhance opportunities for high-quality outdoor recreation experiences. The SRMA is managed for semi-primitive motorized and roaded natural recreation opportunities and experiences. The only developed recreation site in the Owyhee Front SRMA is the Rabbit Creek Trailhead.

C.J. Strike Reservoir SRMA

This 5,500-acre SRMA is located around the perimeter of C.J. Strike Reservoir. The SRMA



was designated in the 1983 Bruneau MFP for its recreation and wildlife values. Overall management objectives are to preserve the high-quality scenic, recreational, and wildlife values and to enhance opportunities for high-quality outdoor recreation experiences while maintaining the integrity of the area's natural systems and cultural resources. The SRMA is managed for semi-primitive motorized and roaded natural recreation opportunities and experiences.

The only BLM-developed recreation site in the C.J. Strike Reservoir SRMA is Cove Recreation Site, a popular camping spot. Commercial recreational developments constructed on public land, but privately operated under BLM permit include Black Sands Resort and the Air Force Base Recreation Site. Other recreation facilities located along the reservoir near Cove Recreation Site include North Park Recreation Area, managed by Idaho Power Company, and Cottonwood Campground, managed by the IDF&G. The high use season for the reservoir is May through October.

Extensive Recreation Management Areas

Because the entire NCA is designated as an SRMA, the Extensive Recreation Management Areas (ERMA) designation would not apply.

Recreation Sites

Developed Recreation Sites

Dedication Point and Cove Recreation Sites, located along the Snake River Canyon, and Rabbit Creek Trailhead, located along Highway 78, are the only three developed recreation sites (Recreation Map 3).

- Dedication Point is a 200-acre interpretive site with a one-quarter mile, interpretive loop trail leading to an overlook of the Snake River Canyon, two disability-accessible restrooms, and a covered shelter for presentations. Use at Dedication Point is highest in the spring during peak raptor watching and lowest in late summer and winter.
- Cove Recreation Site is a developed campground located on the south shore of

C.J. Strike Reservoir. The campground has 23 camp units with shade structures available for day or overnight use, fishing docks, pit toilets, and potable water. A shallow water boat launch is located on the west end of the site.

- Rabbit Creek Trailhead is an off-loading and parking area located along the west side of Highway 78, near Murphy, which provides an access point for ATV and motorcycle riders in the Owyhee Front area. Although the trailhead is located within the NCA, it provides access for off-road vehicles that primarily use lands outside of the NCA.

Undeveloped Recreation Areas

There are numerous undeveloped recreation sites that sustain a concentrated amount of recreation use, but have few or no facilities associated with the site. Examples of undeveloped recreation sites include Halverson Lake, Kuna Butte, Initial Point, the Snake River Canyon below Swan Falls Dam, and Wees Bar (Recreation Map 3).

Special Recreation Permits (SRPs)

Commercial, competitive, or large group events require a special recreation use permit. Three to five special recreation permits (SRP) are issued annually. The NCA limits the number of commercial SRPs to ten (five land permits and five river permits). Although BLM does not manage the Snake River, if an outfitter launches from or returns to public land, or if they use public lands during their trip (e.g., lunch stops or to hike), they must obtain a BLM permit. Outfitters must possess a commercial outfitter's permit from the Idaho Outfitters and Guides Licensing Board (IOGLB).



Presently only one commercial river outfitter is permitted by the BLM.



The IOGLB limits the number of licensed outfitters on the Snake River through the NCA to five float boat outfitters and five powerboat outfitters. The IOGLB currently permits five powerboat outfitters on the Snake River through the NCA and has received requests for more commercial permits for this section of the Snake River.

Non-commercial activities requiring SRPs have not been limited in number due to low demand.

Recreational Shooting

Public safety concerns about stray and ricocheted bullets emerged during the 1990s. This safety issue was particularly significant in the western portion of the NCA, closest to the growing communities of Boise, Kuna and Melba. To address the safety concerns, the BLM implemented the following shooting restrictions following publication of the 1996 NCA Management Plan for the Snake River Canyon and the Snake River Plateau.



The NCA has long been popular with recreational shooters as a place to target shoot and sight-in rifles. Much of this shooting is directed at ground squirrels and other non-game animals during the spring.

Snake River Canyon

Public lands are closed year-round to the discharge of rifles and pistols year-round within the Snake River Canyon from Gold Isle (near Grand View) downstream to Guffey Bridge (Recreation Map 4). The width of the closure is 1/2 mile from either side of the Snake River or 100 yards back from the canyon rim, whichever is greater. The same area is closed to the discharge of all firearms from February 15 to August 31. The one

exception to this restriction is for the rifle deer hunting season in Hunting Unit 40 on the south side of the Snake River. This closure provides for continued hunting of upland game and waterfowl in the canyon area with shotguns between September 1 and February 15 in accordance with Idaho Fish & Game regulations. The use of firearms within the above area for law enforcement purposes is exempt from the shooting closure.

Snake River Plateau

Public lands are closed year-round to the discharge of rifles and pistols in the portion of the NCA located north of the PacifiCorp powerline (Recreation Map 4, Plateau shooting restriction area). The area located south of the PacifiCorp powerline and west of Swan Falls Road is also closed. The use of firearms within the above area for animal damage control and law enforcement purposes is exempt from the shooting restriction.

In addition to the Canyon and Plateau shooting restrictions, public access and shooting is not allowed within the Impact Area of the IDARNG OTA. The closure does not affect military training activities (Recreation Map 4).

Areas Open to Shooting

Currently, recreational shooting may take place anywhere within the OTA except for the Impact Area. Anecdotal information, including observations by BLM and IDARNG staff, suggests that recreation use, including shooting, has increased in the northern portion of the OTA. This increased use corresponds with the population increase in the Treasure Valley. The increased population and area use is also the likely cause of recreational uses expanding from the Plateau area into the adjacent OTA. This increased recreation use in an area that also supports military training raises public safety concerns for land managers. To help mitigate this concern, individuals or groups may be contacted by IDARNG, BLM or local law enforcement personnel in the area where training exercises occur to inform them of potential activities and what they may do to reduce potential conflicts and safety hazards.



Evolving public land use conflicts, including shooting, may be addressed through Standard Operating Procedures, as required in the BLM/IDARNG MOU.

Recreation Opportunity Spectrum (ROS)

Public lands are managed to provide a broad spectrum of recreational opportunities. The ROS provides the BLM with a framework for determining existing outdoor recreation opportunities and management potential based on a combination of activity, setting, and experience (See Appendix 15 for ROS classifications).

Use of the ROS provides for:

- establishment of outdoor recreation management goals and objectives for specific areas,
- analysis of the impact of proposed resource management actions on available recreation opportunities,
- monitoring in terms of established standards for recreation experience and opportunity settings, and
- specific management objectives and standards for project plans.

The ROS system divides the continuum into six management classes, with “primitive” describing the most isolated, natural, and challenging setting, and “urban” describing the most user-intensive, developed, and modified setting. The six management classes are:

- primitive,
- semi-primitive non-motorized,
- semi-primitive motorized,
- roaded natural,
- rural,
- modern urban.

The ROS classifications are based upon what the user may see, hear, and experience while recreating. The majority of the NCA is classified as roaded natural with minor amounts of land classified as semi-primitive motorized and semi-primitive non-motorized (Recreation Table 2.1).

Roaded natural settings are defined as landscapes partially modified by roads, utility lines, etc., but not in a way that overpowers the natural landscape features. The landscape may contain improved yet modest, rustic facilities such as campsites, restrooms, trails, and interpretive signs.

Semi-primitive motorized settings are defined as naturally-appearing landscapes except for obvious primitive roads. Facilities may include maintained and marked trails, simple trailhead developments, improved signs, and very basic toilets.

Semi-primitive non-motorized settings are defined as naturally-appearing landscapes having modifications that are not readily noticeable. Facilities may include some primitive trails with improvements made of native materials, such as log bridges and carved wooden signs.

The ROS system describes physical settings, experiences, and activities for each class and identifies where these combinations occur. Area classification allows for flexibility where the overlapping of class characteristics commonly occurs. The use of this system helps recognize and meet the growing demand for a variety of recreation activities and settings within the NCA.

Recreation Table 2.1. Recreation Opportunity Spectrum (ROS) Acres.

Recreation Opportunity Spectrum Acres Summary					
Primitive	Semi-primitive non-motorized	Semi-primitive motorized	Roaded Natural	Rural	Urban
0 acres	1,600 acres	14,200 acres	467,900 acres	0 acres	0 acres



Caves

A total of 23 named caves are located within the NCA boundary. None of the caves have been studied to determine if they possess significant cave resources under the Federal Cave Resources Protection Act of 1988. Cave significance/non-significance will be determined as information and data is compiled. One cave (Higby Cave) has been officially closed for safety reasons.

Environmental Education and Interpretation

The NCA legislation recognized that the NCA constitutes a valuable national educational resource. One effective way to protect raptors is to educate the public about the important role of raptors and how various activities can affect their habitat. This is achieved using a number of educational and interpretive methods, including:

- **Oral Presentations** – BLM staff share information about the natural and cultural resources of southwest Idaho with schools and universities, churches, nursing homes, summer camps, career fairs, community events, and other groups and organizations. Staff provides presentations for those in the Boise area and within a two-hour drive. Presentations cover topics about birds of prey, vegetation, geology, archaeology, recreation, grazing, wildland fire, wildlife, and fisheries.
- **Education Raptors** – The NCA has several raptors that are used during presentations under F&WS and IDF&G permits. Although the birds were injured and are non-releasable, they captivate groups with their beauty and strength and serve as ambassadors for all wild birds.
- **The Raptor Box** – This tool is a self-contained teacher traveling trunk developed to educate the public about the NCA and its wildlife. The NCA-staff has assembled five trunks that are shipped to educators throughout Idaho, usually for three-week periods. The trunk includes an instruction notebook and hands-on-

resources, including books, guides, videos, CD-ROMs, and raptor silhouettes.

- **Spring Hikes** – On weekends from April through June each year, the NCA staff leads free hikes in various locations in the NCA to provide the public an opportunity to learn about and experience the natural and cultural values of the NCA. The hikes explore the NCA's plants, animals, geology, cultural history, and recreation resources.
- **Environmental Education Days** – Each spring the BLM hosts Environmental Education Days (EE Days) at the Dedication Point Interpretive Site for grades 4 through 6. This popular event, which extends over three weeks, is designed as a half-day, outdoor laboratory for each class, to give teachers and students an opportunity to learn about and experience firsthand the desert ecosystem.



The NCA is a valuable national educational resource.

- **Interpretive Waysides** – Signs are placed in strategic locations along major access roads to inform and educate the public about the NCA, its unique resources, and ways to help protect and enjoy these resources.



- NCA Website – The NCA website was developed in 1997 to provide a more efficient method to answer questions from across the U.S. and the world. The website serves as a technological extension of the NCA staff in answering visitor inquiries.

Wild and Scenic Rivers (W&SR)

Section 5(d)(1) of the 1968 W&SR Act (P.L. 90-542) directs federal agencies to consider the potential of W&SRs in the land use planning process. This process requires determinations to be made regarding a river's eligibility, classification and suitability. Eligibility and classification represent an inventory of existing conditions. Eligibility is an evaluation of whether a candidate river is free-flowing and possesses one or more outstandingly remarkable values. If found eligible, a candidate river is analyzed as to its current level of development (water resources projects, shoreline development, and accessibility) and a recommendation is made that it be placed into one or more of three classes – wild, scenic or recreational.

The final procedural step, suitability, provides the basis for determining whether or not to recommend a river as part of the National System.

Eighty-one miles of the Snake River flow through the NCA. Within this area, the Swan Falls Dam and C.J. Strike Dam break the river into free-flowing segments totaling 49 miles (Recreation Map 13). Descriptions of these segments are as follows:



Eighty-one miles of the Snake River flow through the NCA.

- Segment 1 – East boundary of the NCA downstream to the backwaters of C.J. Strike Dam – approximately 9 miles,
- Segment 2 – C.J. Strike Dam to the backwaters of Swan Falls Reservoir – approximately 27 miles,
- Segment 3 – Below Swan Falls Dam to the west boundary of the NCA – approximately 13 miles (See Appendix 14).

C.J. Strike Dam impounds about 24 miles of the Snake River and Swan Falls Dam impounds about 9 miles of river. Prior to initiation of this planning effort, the free-flowing segments of the Snake River had not been evaluated for potential eligibility or suitability for inclusion in the National W&SR System.

Those segments found eligible and suitable for designation may be recommended to Congress for designation as a part of the Wild and Scenic Rivers system. Segments determined to be suitable, whether subsequently recommended for designation or not, will be managed under the withdrawal language contained in the NCA-enabling legislation to protect the outstandingly remarkable values, i.e., scenic, recreational, geologic, fish and wildlife, historic, and cultural, etc. that were identified in the eligibility determination (Appendix 14).

Compatibility of Recreational Activities with the Purposes of the NCA

In 2003, under a BLM contract, the Environmental Assessment Division of Argonne National Laboratory evaluated the effects of activities occurring in the OTA (Argonne National Laboratory 2004). This report stated in part, that cross-country (off-road) vehicle travel in native shrub communities is incompatible with the purposes for which the NCA was established. The report further states that:

“Recreational shooting may result in lead poisoning of raptors feeding on prey injured by shooting and containing lead shot. Because recreational shooting of ground squirrels coincides with the nesting period for the prairie falcon, lead-shot contaminated prey fed to young may also affect nesting



survival or fledgling success. However, currently the level of lead shot in injured or killed prey, the degree to which raptors may be feeding on injured prey, and the level of lead exposure that raptors (adult and young) may be receiving are unknown.”

The report also stated that:

“fires started by recreational visitors (by smoking, careless use of campfires, or contact of dry vegetation with hot engine parts) may have ecologically significant adverse effects on native vegetation on the site. Recreational visitors have relatively open access to much of the quality sagebrush habitat on the OTA. Sagebrush is especially vulnerable to the effects of fires and may be irreversibly impacted as a result of fire.”

2.2.17 Renewable Energy

See Lands and Realty Section 2.2.13 above.

2.2.18 Transportation

Also see Recreation Section 2.2.16 above.

Off Highway Vehicle Use

When the NCA was designated, portions of the area were covered under five different land use plans, with varying management direction for vehicle access. The 1996 NCA Management Plan declared the NCA a Designated Vehicle Management Area, designating about 1,300 acres as “closed” to motorized vehicle use. This non-motorized area is located along the north side of the Snake River Canyon, and extends from the Ada/Canyon County line upstream to near the USGS gaging station.

The area encompasses all of Halverson Bar and contains more than 15 miles of trails for non-motorized uses, such as horseback riding, hiking, and mountain biking (Transportation Map 2). Since the designation of this non-motorized area, equestrian use in the Celebration Park and Halverson Bar area has steadily increased. There are currently no designated

parking or trailhead facilities to accommodate equestrian use. The TWMA and Gold Isle are also closed to motor vehicles.



Since 1996, all vehicles have been required to remain on designated roads and trails with no cross-country use allowed.

Although the NCA Management Plan does not provide for off-road, cross-country vehicle travel, an unauthorized OHV play area has existed for decades along the Canyon Creek drainage, located north of the Grandview Highway and east of Simco Road. The area is popular with local residents because of its unique topography, as well as its proximity to Mountain Home Air Force Base and the City of Mountain Home. The soils and vegetation have been highly disturbed and the area is also the target of a significant amount of illegal trash dumping and indiscriminant target shooting. Both the use and the size of the area have increased dramatically over the past decade, resulting in further degradation of the area. The area is affected by periodic, but infrequent flooding, which prevents natural or artificial reestablishment of vegetation. Recently, the ongoing OHV activity has unearthed military-related objects, including clothing, dishes, ammunition, papers, etc, that were deposited when the area was used as a landfill. BLM completed a site evaluation and determined that there was a low potential for hazardous materials to exist on-site. Further analysis will determine whether the materials possess historic significance. Appropriate follow-up actions will be taken based on this site evaluation. Actions could include full closure of the area, restriction to designated routes through the area, or management as an open OHV area in cooperation with local entities. Unauthorized OHV use will not be allowed to continue.



In 2003, under a BLM contract, the Environmental Assessment Division of Argonne National Laboratory evaluated the effects of activities occurring in the OTA (Argonne National Laboratory 2004). This report stated in part, that cross-country (off-road) vehicle travel in native shrub communities is incompatible with the purposes for which the NCA was established.

Because of the potential safety hazards associated with live firing activity and unexploded ordnance, the 53,000 acre Impact Area of the IDARNG OTA is closed year-round to public access.

Road Density

In 2003, BLM inventoried all roads within the NCA to identify and classify the routes and their condition. This data was analyzed to determine road densities in the following method. An ArcGIS 9 software program was used to analyze the NCA's inventoried routes in a grid system of cells measuring 100 ft x 100 ft. From the center of each cell, the software program calculated the number of miles of road within a one square mile surrounding each cell. Based on the number of miles within each square mile measured from the center of each cell, each cell was given a route density value in miles of road per square mile. The entire data set was then evaluated to identify "natural breaks" in the range of density values. These "natural breaks" were used to divide the data into four road density categories:

- Low – <1 mile of road/square mile
- Medium – 1 to 2.5 miles of road/square mile
- High – 2.5 to 4.5 miles of road/square mile
- Very High – >4.5 miles of road/square mile.

Groups of cells with similar density values were grouped into polygons, which are shown on Transportation Map 1. The percentage of the entire NCA in each road density category was determined by calculating the cumulative area covered by polygons in each category. The percent of the NCA in each road density category is as follows:

- Low – 23 percent
- Medium – 37 percent
- High – 31 percent
- Very High – 9 percent.

The above road density categories differ significantly from the road densities presented in the Draft RMP because the Draft RMP reflected densities that were averaged across the entire NCA. The road density categories shown herein are a more discrete representation of how road density varies across the landscape.

2.2.19 Utility and Communication Corridors (Land Use Authorizations)

Description and Summary

Section 503 of FLPMA provides for the designation of ROW corridors and encourages utilization of common utility corridors to minimize environmental impacts and the proliferation of separate ROWs. BLM policy is to encourage prospective applicants to locate their proposals within corridors.

Lands in the NCA are used by utility companies' for a variety of uses such as pipelines, power lines, telephone lines, and road systems. These are authorized by ROW documents that require certain conditions for use. Not all such facilities are within the current corridor but BLM would provide the opportunity for such use if requested. A current major use within the corridor is the 500 kilovolt power line that comes from the Midpoint Sub-station to the Boise Bench Switching Yard.

Condition and Trend

With increasing populations, and projections for an even greater growth, power needs of Boise and the surrounding areas are falling behind in reliable service to meet customer demand. A new power line corridor will be a growing power need in the Treasure Valley. Although one location would be chosen, two alternative sites are being considered. One would generally run north of the Snake River and the other would be on the south side. Both would bring power from the Midpoint Sub-station to the major customer demand center in



the western portions of Treasure Valley. No future natural gas pipeline or petroleum pipeline is planned within the next 10 years and smaller distribution lines and customer service lines will be addressed as they occur. These lines may or may not be within any designated corridor and will be addressed on a site specific basis. It is expected that additional requests for utility and communication ROWs will be forthcoming as the population increases and greater demands for energy related services are realized.

Also see Lands and Realty Section 2.2.13.



Currently there is only one corridor designated within the NCA which traverses the northeastern portion directly east of Mountain Home Reservoir (Lands Map 2).

2.2.20 Wildland Fire Ecology and Management

Wildfire, fire suppression, development, and other human activities have combined to alter the vegetative environment. Historically, about 2/3 of the wildfires in the NCA have been human-caused, and have occurred along major roads and highways, such as Interstate 84, or in areas that sustain high levels of human use, including the Mountain Home Air Force Base and the area immediately south of Kuna. Fire events occasionally threaten private property and public safety in the Wildland Urban Interfaces (WUI) including the communities of Kuna, Murphy, Mountain Home, Melba, Grandview, Bruneau, and Hammett, as well as other isolated private tracts of land and homes. Although greater in number, human-caused fires do not generally burn as much acreage as natural fires, due to their location near access corridors, which facilitates suppression activities (Vegetation Map 5).

Organized fire suppression began in the 1920s. Currently, all wildfires are aggressively suppressed with the goal of minimizing risk to public and firefighter safety and further loss of remnant shrub communities.

The slickspot peppergrass CA incorporates changes in fire management to reduce impacts to this SSP. Fire suppression within slickspot peppergrass management areas is more strictly managed than in other areas. In addition, fire break opportunities adjacent to slickspot peppergrass habitat will be evaluated, created, and maintained. These changes in fire management also benefit other sagebrush steppe obligate species, such as sage sparrows.

Fire suppression activities cannot use surface disturbing equipment in sensitive areas such as the GB-BB ACEC and portions of the Oregon Trail SRMA. Use of surface disturbing equipment for fire suppression in the remainder of the NCA occurs with the consultation of a resource advisor. Exceptions to this policy have been made where firefighter and/or public safety are threatened.

Suppression efforts have not been effective in preventing large fires from occurring during periods of heavy fire activity and multiple fire starts. Since lightning fires often start in areas away from easy access routes, a few large “disaster-type fires” can burn a very large area while still remaining within the maximum acceptable acres per decade. In addition extended drought reduces the production of annual grasses that contribute to large fire spread, and is probably the largest factor, besides fire occurrence, suppression workforce capabilities, and other variables, that has limited the size of recent wildfires.

Fuels management projects occur on approximately 500 acres annually and include:

- prescribed burning for hazard reduction;
- chemical treatments to reduce production of annual exotic species;
- spring grazing to reduce fuel loads near wildland urban interface areas; and



- seeding of native and desirable non-native vegetation.

In addition, ESR efforts are aimed at reducing flammable vegetation and replacing it with native or adapted non-native species or species which are more typical of the historical fire regime. These rehabilitation efforts have been met with limited success (see Upland Vegetation Section 2.2.8).

The Upland Vegetation Section describes both historic and current vegetation communities and fire regimes, and discusses how the native plant communities have been impacted by the invasion of exotic annual species. As a result of this vegetation change, fires occur much more frequently and can sometimes spread over large areas, due to a continuous layer of highly-flammable vegetation.

One of the goals of the National Fire Plan Cohesive Strategy is “reducing fuels and restoring fire’s ecological role in fire-adapted ecosystems”. This Strategy characterizes fire regimes into Fire Regime Condition Classes (FRCC). A fire regime is defined as a generalized description of the role fire plays in an ecosystem. It is characterized by fire frequency, seasonality, intensity, duration and scale (patch size), as well as regularity or variability.

For the purpose of this strategy, vegetation/fuel conditions are assigned three FRCC descriptors. A FRCC is defined in terms of the landscape’s departure from the historic fire regime, as determined by the current fire return interval, and the current structure and composition of the system resulting from alterations to the disturbance regime. A FRCC of Class 1 indicates a minimum departure from the historic fire regime, whereas FRCC Class 3 indicates the greatest amount of departure from the historic fire regime. Currently, the entire NCA is categorized as FRCC 3. This reflects the fact that native shrub habitats have been replaced by annual grass communities, depicted as “uncharacteristic” in the FRCC process, over much of the NCA. Those remnant areas where shrub communities still exist

are dominated by an annual grass understory which is also considered “uncharacteristic”. The fire frequency and size has increased as a result of the change in vegetation communities.

2.2.21 Special Designations

See Cultural and Tribal Section 2.2.2 and Recreation Section 2.2.16.

2.2.22 Social and Economic Conditions

2.2.22.1 Economic Conditions

The NCA sits within a four county region consisting of Ada, Canyon, Elmore, and Owyhee Counties (Planning Map 3; Socio-economic Table 2.1). Boise is the largest and most

The term “gateway community” reflects the fact that most visitors travel through one of these towns to enter the NCA. As such, gateway communities are in a position to benefit from the location of the adjacent NCA.

influential city in the region from a social and economic perspective. Kuna and Mountain Home, considered to be gateway communities to the NCA, provide the nearest source for infrastructure needs. Because activities within the NCA have the potential to affect all of these counties, the socioeconomic study area has been defined as these four counties.

Socio-Economic Table 2.1. Public Land in the NCA in Four Idaho Counties.

County	BLM Acres in NCA	Percentage of NCA
Ada	222,600	46
Canyon	600	Trace
Elmore	155,300	32
Owyhee	105,200	22
Total	483,700	100

In the past decade, population growth for the U.S. has centered on the West and South The State of Idaho ranked 5th in percentage increase between 1990 and 2000 and continues to increase at a fast pace. In fact, Idaho has seen its population expand by an additional 5.6% between 2000 and 2003. Within Idaho the southwestern region is the fastest growing region in the State. While the population



growth rate for Owyhee County has kept pace with the overall State of Idaho population growth rate, it is considerably slower than the growth rates of Ada, Canyon, and Elmore Counties (Socio-economic Table 2.2).

Although many traditional cultural patterns (i.e., ranching, farming, and a rural lifestyle) persist in the communities of Owyhee County, external forces related to population growth and shifts in regional economic bases have brought new and rapid changes to the county

in the past decade. Some previous research has found that while well-being and quality of life may be affected significantly from rapid social change, small rural western communities, like those found in Owyhee County, often do not experience lasting social disruption (Smith *et al.* 2001; Hunter *et al.* 2002). For many local people in Owyhee County, things such as neighbors, land-use policy, and sources of environmental impact are not the same as in recent memory.

Socio-Economic Table 2.2. Population Data for Idaho Counties and Cities In and Around the NCA in 1990 and 2000.

County	City	Census		# Change	% Change
		1990	2000	90-00	90-00
Ada	Boise City	126,685	185,787	59,102	46.7%
	Eagle	3,327	11,085	7,758	233.2%
	Garden City	6,369	10,624	4,255	66.8%
	Kuna	1,955	5,382	3,427	175.3%
	Meridian	9,596	34,919	25,323	263.9%
	Star	648	1,795	1,147	177.0%
	City Total	147,932	247,797	99,865	67.5%
	Rest of County	57,843	53,107	-4,736	-8.2%
	County Total	205,775	300,904	95,129	46.2%
Canyon	Caldwell	18,586	25,967	7,381	39.7%
	Greenleaf	648	862	214	33.0%
	Melba	252	439	187	74.2%
	Middleton	1,851	2,978	1,127	60.9%
	Nampa	28,365	51,867	23,502	82.9%
	Notus	380	458	78	20.5%
	Parma	1,597	1,771	174	10.9%
	Wilder	1,232	1,462	230	18.7%
	City Total	52,911	85,804	32,893	62.2%
	Rest of County	37,165	45,637	8,472	22.8%
		County Total	90,076	131,441	41,365
Elmore	Glenns Ferry	1,304	1,611	307	23.5%
	Mountain Home AFB	5,936	8,894	2,958	49.8%
	Mountain Home	7,913	11,143	3,230	40.8%
	City Total	15,153	21,648	6,495	42.9%
	Rest of County	6,052	7,482	1,430	23.6%
	County Total	21,205	29,130	7,925	37.4%
Owyhee	Grand View	330	470	140	42.4%
	Homedale	1,963	2,528	565	28.8%
	Marsing	798	890	92	11.5%
	City Total	3,091	3,888	797	25.8%
	Rest of County	5,301	6,756	1,455	27.4%
	County Total	8,392	10,644	2,252	26.8%
Idaho	State Total	1,006,734	1,293,953	287,219	28.5%

Source: US Bureau of the Census 2001



Demographics

The racial makeup of Idaho and its counties is predominately white (Socio-economic Table 2.3). However, other racial groups are growing at a faster rate than the overall population. In

Ada and Canyon Counties, there has been a concerted effort by private companies and public agencies to diversify their workforces with recruitment efforts throughout the nation.

Socio-Economic Table 2.3. Population by Race or Racial Group in Four Idaho Counties.

Counties	White	African American	American Indian/ Alaska Native	Asian	Native Hawaiian/ Other Pacific Islander	Hispanic	Total Population
Ada	285,704	2,896	4,103	7,166	927	7,304	300,904
Canyon	112,384	698	2,216	1,705	375	17,712	131,441
Elmore	25,713	1,099	520	761	135	1,914	29,130
Owyhee	8455	27	480	64	19	1,893	10,644
State	1,201,113	8,127	27,237	17,390	2,847	64,389	1,293,953

Employment

Unemployment in Idaho has fluctuated since a recession began early 2001. However, Idaho has generally fared better than the Nation as a

whole, with the unemployment rate remaining lower than the national average (Socio-economic Table 2.4).

Socio-Economic Table 2.4. Employment Status for Four Idaho Counties.

County	Total labor force	Civilian labor force	Military labor force	Employed	Unemployed	% civilian labor force unemployed
Ada	163,955	163,045	910	156,634	6,411	3.9
Canyon	63,525	63,343	182	59,634	3,709	5.9
Elmore	13,313	10,158	3,155	9,492	666	6.6
Owyhee	4,716	4,710	6	4,389	321	6.8
State	641,088	636,237	4,851	599,453	36,784	5.8

Source: US Bureau of the Census 2002

Income

Income generation is predominately through the non-agricultural sectors (construction, manufacturing, services, etc) in Ada and Canyon Counties. Elmore and Owyhee Counties have a more extensive agricultural sector that generates 10% and 20% of personal income, respectively (Socio-economic Figures 2.1 and 2.2). This is consistent with the more rural character of these counties.

Per capita income is generally consistent with the urban versus rural character of the respective counties, except for Elmore County,

which has a large government sector with Mountain Home Air Force Base as a dominant employer.

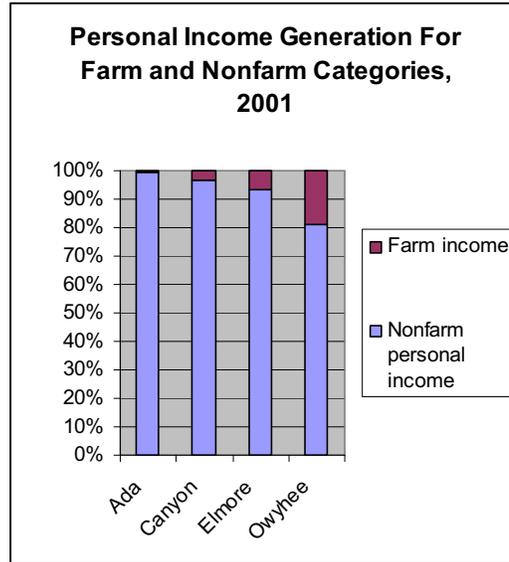
Visitation currently generates more direct economic activity in the four-county southwest Idaho region than other BLM-NCA activities (see Appendix 13 Table B.) The government sector accounts for over \$1 billion in earnings in the four-county region. OTA related earnings account for about 0.002 percent of this total. The OTA is one part of the overall picture of IDARNG operations. It is the primary training area for a much larger military operation. The IDARNG is a major employer in



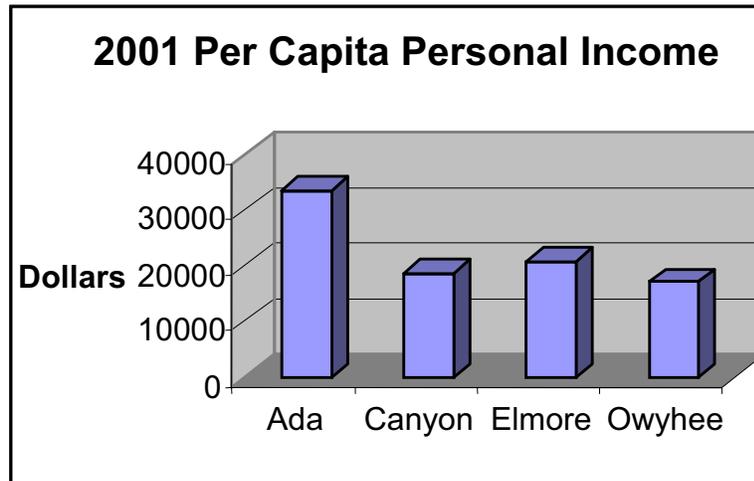
Southwest Idaho with total authorized military and civilian employment of 4,599. It is the 12th largest employer in the State of Idaho.

Annual spending of the IDARNG in 2004 was \$198 million. Construction spending in 2004 was \$11 million.

Socio-Economic Figure 2.1. Percentage of Farm and Non-farm Income in Four Idaho Counties in 2001.



Socio-Economic Figure 2.2. Per Capita Personal Income in Four Idaho Counties in 2001.



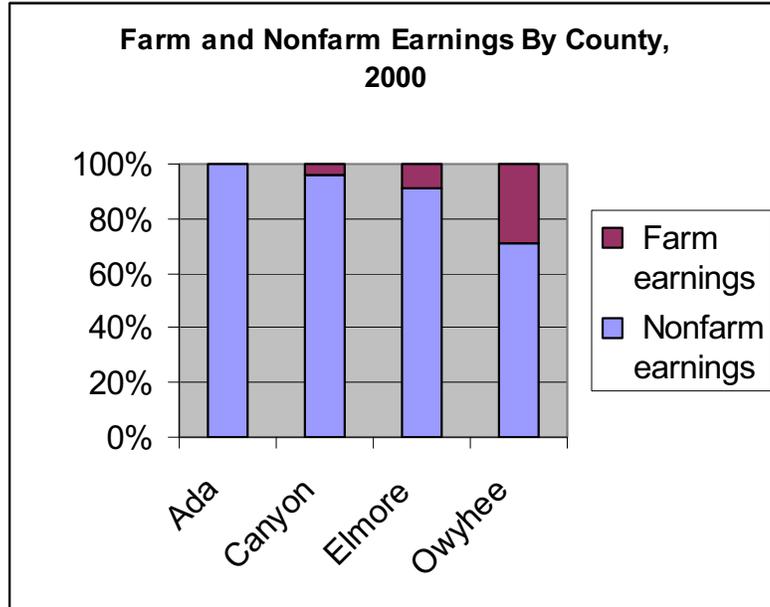
Economy

Non-farm sectoral earnings predominate throughout the counties; however, farm earnings are a significant contributor (20%) to the

economy of Owyhee County as shown on Socio-economic Figure 2.3 below.



Socio-Economic Figure 2.3. Farm and Non-farm Earnings by County.



Livestock Grazing

Southwestern Idaho is considered a diverse agricultural community of crop, dairy and livestock production. Crop production (row crops including sugar beets); seed production and dairy production in Canyon, Ada and Elmore Counties dominate the agricultural sector. However, in Owyhee County, livestock production plays a major role in generating agricultural income.

Within the NCA, a third of the livestock operators reside in Owyhee County while the remaining two-thirds reside within the remaining three county regions or elsewhere in Idaho. Operations can be classified as small (less than 100 head) to large (greater than 500 head) with the greater number of operations classified as medium size.

Recreation

Predominant outdoor recreational activities in southwestern Idaho range from hunting and fishing to OHV, hiking and bird watching (also see Recreation Section 2.2.16). It is difficult to measure contributions by recreation to the regional economy because, for some activities, markets to capture transactions do not

exist. For other recreational activities, expenditures are distributed unevenly among multiple economic sectors. The NCA generally provides recreation activities that fall within this non-market portion though equipment, food and lodging expenditures are captured in the economy.

Idaho requires off-highway motorcycles/all terrain vehicles (ATVs), snowmobiles, and other recreation vehicles (motor homes, campers, travel trailers) to be registered. Boats, motorbikes, ATVs, and snowmobiles are registered through the Idaho Department of Parks and Recreation (IDPR). Campers, motor homes, and trailers are registered through the Idaho Transportation Department. Socio-economic Table 2.5 shows the changes in motorbike and ATV registration numbers for calendar years 2001 through 2005 for Ada, Canyon, Elmore, and Owyhee Counties, Idaho.

These registration numbers are not absolutely definitive. The old IDPR Registration System counted any change of registration as a new registration, creating some duplication. There are also varying compliance rates among the various registration types. The 2002 IDPR



Mid-Winter Recreation Survey found that the State-wide average compliance rate for snowmobiles was 94%. IDPR estimates that Motorbike/ATV registration compliance may be

only 50%. The purpose of this analysis is to show trends in these recreation registrations (IDPR 2002).

Socio-Economic Table 2.5. Motorbike and ATV Registration Numbers for Calendar Years 2001 through 2005 for Ada, Canyon, Elmore, and Owyhee Counties, Idaho.

County	Registrations					2001-2005 % Change
	2001	2002	2003	2004	2005	
Ada	11,889	13,755	15,385	16,636	19,239	61.8%
Canyon	5,499	6,734	7,875	8,756	10,169	84.9%
Elmore	1,024	1,249	1,385	1,552	1,689	64.5%
Owyhee	393	531	628	677	735	87.0%
Total	18,805	22,269	25,273	27,621	31,832	74.5%

Socio-economic Tables 2.5, 2.6, and 2.7 show that off-highway motorbikes and ATV registrations have had the largest increase compared to snowmobiles (-25.9%) and RV's (9.0%). Owyhee County led the growth in registrations in percentage terms (87%), but Ada County led the growth in numbers (7,350). Ada County's growth outstripped the 2005 total registrations of Elmore and Owyhee

Counties combined. Ada County accounted for 60% of the registrations in 2005 while Canyon County accounted for 32%. Combined, these counties make up 92% of the registrations within the analysis area. The analysis area accounts for 33% of the registrations State-wide, while the population accounts for 36% of the 2000 State-wide population.

Socio-Economic Table 2.6. Recreational Vehicle (i.e., Motor Homes, Camping Trailers, Van Conversions, and Truck-mounted Campers) Registration Numbers for Calendar Years 1998 through 2002 for Ada, Canyon, Elmore, and Owyhee Counties, Idaho.

County	Registrations					1998-2002 % Change
	2000	2001	2002	2003	2004	
Ada	14,440	14,683	15,150	15,503	15,509	7.4%
Canyon	7,716	7,899	8,244	8,551	8,858	14.8%
Elmore	1,522	1,394	1,367	1,397	1,435	-5.7%
Owyhee	711	696	769	733	779	9.5%
Total	24,389	24,672	25,530	26,184	26,581	9.0%



Socio-Economic Table 2.7. Snowmobile Registration Numbers for Calendar Years 2002 through 2005 for Ada, Canyon, Elmore, and Owyhee Counties, Idaho.

County	Registrations				2002-2005 % Change
	2002	2003	2004	2005	
Ada	886	760	408	102	-88.5%
Canyon	16	26	34	54	237.5%
Elmore	999	1,112	1,197	1,122	12.3%
Owyhee	96	157	210	198	106.3%
Total	1,996	2,055	1,849	1,476	-25.9%

Socio-economic Table 2.6 shows that Ada County has the largest number of RV registrations followed by Canyon County. The four county area had a 7.3% increase in RV registrations from 1998 to 2002. Owyhee County had the biggest percentage gains (13.6%), but Ada County had the biggest gain in numbers (1,494). Ada County's gains were almost double that of Owyhee County's total RV registration numbers. Ada County accounted for 60% of the RV Registrations in 2002, while Canyon County accounted for 32% of the registrations. The four county area accounts for 29.6% of the State-wide RV registrations.

Recreation Activity

Ada and Canyon Counties have the largest population within or adjacent to the NCA (92% of the population). These counties also account for 92% of the motorbike/ATV, RV, and snowmobile registrations. Recreation Vehicles account for the highest number of registrations followed by motorbikes/ATV's. Motorbike/ATV registrations are increasing at a 17.5% annual rate.

The analysis area has a slightly lower percentage of recreation vehicle types (motorbikes/ATV, RV and snowmobile) on a per capita basis than other parts of Idaho. However, the large population of motorbikes/ATVs and RVs within the NCA presents a large demand for those opportunities close to home. The 2002 IDPR Recreational Vehicle Survey found that 66% of motorbike/ATV enthusiasts travel no more than two hours to get to their

riding location, which would include all of the NCA (IDPR 2002).

Southwestern Idaho saw dramatic change during the 20th century. The once sleepy towns outside of Boise are now changing. The rapid urbanization of the greater Boise metropolitan area has reached out to include communities such as Kuna and Marsing. Mountain Home, though to a lesser extent due to the long term establishment of the Air Force Base, has also seen rapid growth. Factors that established the social norms of years past get disrupted by new entrants and a new set of social norms becomes established. In addition, there has been a concerted effort to diversify the population in the past 10-15 years. Many larger firms located in the greater Boise area have made it a policy to bring in new employees from different parts of the U.S. as well as the world. As time goes by, cultural diversity will enhance a more cosmopolitan look and feel to the region. This may influence how the larger population views public land and its many uses.

One key theme emerged from the qualitative data collection efforts of this assessment. One theme of note is access to public lands and resources and the core of this issue is described briefly below.

Access to Public Lands

Access to the public lands is a continuing issue in the west. The land ownership pattern surrounding the NCA is a mixed bag of State,



private and military holdings which would require access agreements (or easements) for legal access. The issue of access is more critical in Ada and Elmore Counties to the north and Owyhee County to the south. Since the NCA contains a limited number of acres in Canyon County it is not expected to be an issue in this region.

Public access will continue to be a growing problem as opportunities and population growth in southwestern Idaho continues to rise. Also see Lands and Realty Section 2.2.13, Recreation Section 2.2.16 and Transportation Section 2.2.18.

2.2.22.2 Environmental Justice

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority and Low-Income Populations, focuses federal attention on the environment and human health condition in minority and low income communities, promotes non-discrimination in federal programs, and provides access to public information and an opportunity to participate in matters that may affect these populations. Local residents in communities surrounding the NCA include low-income and minority populations. However, near the NCA no distinct areas of low-income minority populations were identified, nor were any identified that depend upon the NCA for such purposes as subsistence hunting or fishing. However, the lands within the NCA are used by the Shoshone-Bannock and Shoshone-Paiute Tribes and will be managed consistent with the Shoshone Bannock treaty rights and the Shoshone-Paiute aboriginal rights. Actions proposed under the alternatives would not cause disproportionate adverse human health or environmental impacts to minority and/or low-income populations. Restoration programs associated with all the alternatives would occur within the NCA and would not affect populations in nearby communities. NCA operations and permitted uses, including reserved tribal treaty rights, would continue similar to current conditions, including recreation, grazing, and hunting in permitted areas. All areas, except the OTA Impact Area, would

remain available and open to all ethnic groups and income levels, and no action would displace users to low-income or ethnically sensitive areas. For these reasons, environmental justice was dismissed as an impact topic in this document. Any adjustments in the boundary of the NCA and/or a reduction in public lands available for tribal use would not result in a reduction in natural resource values available for tribal use. Also see Social and Economic Conditions Section 2.2.22.

2.2.22.3 Hazardous Materials

Hazardous materials management involves the prevention of illegal hazardous materials actions on public lands; the proper authorization, permitting, and regulation of the uses of hazardous materials; and the timely, efficient, and safe responses to hazardous materials incidences. Educating the public, law enforcement involvement, and oversight of permitted operations are steps taken to ensure hazardous materials are safely managed. Although BLM issues no authorizations that could result in the direct storage or release of hazardous materials, the unexpected release or spilling of hazardous materials is proactively addressed through SOPs and standard terms and conditions that are attached to authorizing documents. There are no hazardous materials used, or disposed of, in the NCA except in the OTA and this issue is being addressed through the proposed withdrawal of the OTA Impact Area to the DoD.

Description and Summary

The main goal of the hazardous materials program is addressing immediate and urgent threats to human health and safety and any environmental concerns from the release, illegal disposal, or use of hazardous materials. Educating the public about the dangers of this issue and increased law enforcement presence and cooperation are key to resolving this issue. The illegal dumping issue also includes solid waste, which makes up the bulk of activity on these lands. The amount of solid waste illegally dumped on public lands is projected to increase due to increases in construction and population in the area. Roughly 10 to 15 new



solid waste dumping sites are discovered every year in the area with the majority of the sites within 5 miles of urban areas.

Another source of hazardous materials activity is from lands actions that involve ROW, leases, and permits. Examples of these types of actions are pipelines (oil and gas), telecommunication sites, military sites, and transportation facilities. All lands and minerals actions are reviewed both internally and externally (if appropriate) for compliance with federal and State regulations during the application process. Special stipulations are also developed as part of the permit or lease to safeguard human health, environmental damage, and BLM liability.



Many of the **hazardous material** incidences are due to illegal dumping (e.g., drug lab waste, household hazardous waste) which averages approximately 6 sites every year. This type of action will most likely continue in the future.

Hazardous materials may legitimately be brought onto BLM administered public land during weed control or project activities. The types of hazardous materials used for weed and insect control include herbicides and pesticides. The general types of hazardous materials that may be present during project activities include, but are not limited to, petroleum products (fuels and lubricants), solvents, paints, explosives, and cleaning chemicals.

The IDARNG training range is listed on the federal Facilities Hazardous Waste Compli-

ance Docket (ID0572890002) due to use of the area for military operations that included ordnance firing, storage, and disposal. In 1993, an EPA Preliminary Assessment (PA) was conducted for the area. Due to the remoteness of the site, the lack of target populations, and the nature of the hazard and potential pathways, the site was listed for no further action under criteria contained in the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and Superfund Amendments and Reauthorization Act (SARA). There is currently an Artillery Impact Area and other live firing ranges in operation at this facility. This site is currently operated under the authority of an MOU with the BLM. However, the Impact Area will be proposed for withdrawal to the DoD consistent with BLM policy.

An active hazardous waste disposal facility, operated by US Ecology of Idaho, Inc., is located on private land adjacent to the NCA. The facility has operated since 1973 under various names and is primarily a storage and treatment operation. Associated with this facility is the transportation of hazardous waste by road and rail through the NCA. A railroad transfer station is located off Simco Road, where hazardous waste is off-loaded from rail cars to trucks for transportation to the US Ecology of Idaho, Inc. facility in Owyhee County. A portion of this transport is on Simco Road through the NCA. Current BLM policy states that no public lands will be leased or permitted for the storage, treatment, or disposal of hazardous waste, nor will public lands be leased for purposes of sanitary landfills.

All hazardous materials incidences on public lands are responded to as outlined in the Boise District Hazardous Materials Contingency Plan. All actions are consistent with current federal and State regulations and laws.



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