

Oneida Narrows

Oneida Narrows contains a narrow band of boxelder along the Bear River with adjacent northwesterly and southeasterly facing slopes of mountain mahogany, bigtooth maple, Rocky Mountain juniper, and bluebunch wheatgrass communities. Small stands of aspen dot the slopes. Near vertical limestone cliffs containing grottos and caves provide a haven for a variety of birds and uniquely adapted plants. The area is quite undisturbed and diverse.

Pine Gap

This very uniform area of calcareous soil near Pine Gap is covered with a community of black sagebrush and bluebunch wheatgrass. It shows signs of past grazing, yet is in very good condition. Its uniformity is an outstanding feature. It also contains a rare plant, Astragalus spatulatus (spoonleaf milkvetch).

Although the PRA has other proposed Research Natural Areas that contain some stands of the black sagebrush/bluebunch wheatgrass habitat type, the Pine Gap site is by far the best.

Robbers Roost Creek

Robbers Roost Creek was selected for RNA consideration because the vegetation is in good condition and provides an unrepresented sample of shrub communities so common in this part of Idaho. If accepted as a RNA, it would provide a very good undisturbed reference and study area for those shrub communities.

Travertine Park

The area considered is a small area of relatively undisturbed mixed-shrub vegetation, protected by the river on the north, by cliffs and rough talus on the south, and by rock talus slopes from river to cliffs at either end. This mixed-shrub community is isolated and exhibits features not found elsewhere in Idaho.

Travertine Park proposed RNA is a small portion of land located in a much larger proposed Area Of Critical Environmental Concern..

CULTURAL RESOURCE MANAGEMENT

Cultural resource inventories have been completed on 14,400 acres, or 4.5 percent, of the PRA's public land. A random sample inventory (Class II) was completed on 4,480 acres. Project inventories have intensively surveyed 9,920 acres. Field inventories were supplemented by site

location file checks: historical, archaeological, and ethnographic literature reviews; and consultation with individuals familiar with local cultural resources.

There are 252 documented cultural resource sites in the PRA. Thirty-five prehistoric and historic sites are located on public land. Significant cultural resource sites range from high to low and are distributed throughout the PRA. Sites are also located on National Forest, State of Idaho, private, Indian Reservation, and Federal withdrawal lands. Prehistoric site types include open, surface lithic scatters, rock shelters, rock alignments, and rock art. Historic sites include emigrant trail segments, structures, cabin foundations, and an abandoned railroad grade.

Area sites may represent 15,000 years of human habitation and use. Blackfoot Reservoir survey information indicates ancient hunters visited the Blackfoot Reservoir about 12,000 years ago. Generally, prehistoric sites reflect northern Great Basin cultural characteristics. Open surface sites are remnants of seasonal habitation, toolmaking, and food processing localities. Petroglyphs, or rock carvings, are the area's typical rock art type. Pictographs, or rock paintings, are not common south of the Snake River. Human, animal, and geometric figures decorate boulders and rock faces in the PRA's major stream drainages. Rock art meanings can only be suggested. They may relate ancient magical rites, religious ceremonies, customs, individual deeds, or natural resource locations.

Area historic sites are related to late Indian encampments, and Euro-American exploration, emigration, settlement, and natural resource extraction. Oregon Trail, Hudspeth's Cutoff, Lander Road trail remnants, and related historic sites recall a nationally significant event and period. The Utah & Northern Railroad's abandoned grade segment documents a transportation development which stimulated southern Idaho's settlement and economic development. Other sites document the area's farming, ranching, mining, and logging economy.

Area prehistoric sites are unevaluated, and none are listed on the National Register of Historic Places. Some open, surface sites and rock shelters could qualify individually. Other similar site types could qualify for group or District nomination and listing. BLM rock art sites could be included in a District nomination with other National Forest, State, and private petroglyph sites. Prehistoric sites may provide important scientific information. These sites may also have important socio-cultural values for Shoshone-Bannock tribal members. Some sites are located within the original 1868 Ft. Hall Indian Reservation's treaty boundaries. The values, memories, and traditions attached to these treaty land sites and localities may be as important as any material remains or scientific data.

One National Register site is located adjacent to public land. The Chesterfield Historic District is a rural village located about 25 miles west of Soda Springs, Idaho. The District includes thirty-one residences, one church, three stores, a tithing house, outbuildings and a cemetery. Log, wood, frame, and brick construction were used for building constructions. Construction methods and architectural features represent a period from 1884 to 1925. This historic District preserves an outstanding example of the establishment, growth, and decline of a late nineteenth century Mormon farming community. Public lands are leased to the Chesterfield Foundation, Inc.

The emigrant trail segments are one to two mile stretches of undisturbed wagon ruts. One segment each represents the Oregon Trail, Hudspeth's Cutoff, and Lander Road. These segments were not part of the primary Oregon Trail route and were not included as initial Oregon National Trail components. They have been evaluated and would qualify for National Register listing.

The Utah & Northern Railroad was the first in Idaho. Construction began in 1873 at Ogden and the rails reached Franklin in 1874. Financial problems delayed the railway's completion until 1878. The railroad was a narrow gauge type, 3 feet between rails. It connected Salt Lake City to Utah's fertile farms and Montana's gold mines. The line changed to standard gauge in 1887. It is now part of the Union Pacific system. The abandoned grade is about 3 miles long and includes public and private land. It is located near Downey, Idaho.

PALEONTOLOGICAL RESOURCES

In 1985 a Level I inventory of paleontological resources was conducted for the PRA. This inventory consisted of a literature and records search to identify areas of fossil occurrence and incorporates information provided by Idaho State University paleontologists.

As shown in the Table 3.8, vertebrate fossil remains representing a variety of animal species occur in the PRA.

Pleistocene deposits of alluvial and lacustrine clay, silt, sand, and gravel occur in valleys and intermontane basins throughout the PRA. Of particular paleontological interest are the lake beds in southern portions of the area where many specimens of large and small ice-age animals have been discovered.

The silicic volcanic flows and tuffaceous, calcareous sediments of the Tertiary Salt Lake, and Starlight Formations are exposed on mountain flanks and foothill slopes throughout most of the area. The fossilized remains of camel, horse, and mastodons and of a variety of small animals have been recovered from this formation.

TABLE 3.8
VERTEBRATE FOSSILS

Geologic Age of Fossil Resource		Depositional Environments and Geologic Formations	Vertebrate Fauna Represented
Period	Epoch		
Quaternary	Pleistocene	Lake Beds, Alluvial Fans, Stream Alluvium	Mammals including mammoth, mastodon, bison, musk ox, horse, camel, bear, dire wolf, mountain goat, saber-tooth tiger, and ground sloth. Also various fish, reptiles, birds, and amphibians.
Tertiary	Pliocene and Miocene	Salt Lake and Starlight Formations	Horse, camel, mustodon, fish, reptiles, birds, amphibians, and small mammals.
Cretaceous	Early	Wayan Formation	Ornithischian dinosaurs (including Tenontosaurus and Ankylosaurus) and reptiles.
Cretaceous-Jurassic	Early K to Late J	Gannett Group	Dinosaurs and reptiles.
Triassic	Early	Thaynes Formation	Ichthyosaurs and Ichthyosaurs (including fish)
Permian	--	Phosphoria Formation	Spiral-tooth Shark, fish

Localities within the Blackfoot and Caribou Mountain Ranges have yielded dinosaur and reptile fossils in both the Wayan Formation and the Gannett Group of formations. The fluviatile siltstones and claystones and interbedded sandstones of the Cretaceous Wayan Formation contain Tenontosaurus and Ankylosaurus fossils. Although very little fossil vertebrate material has been recovered from the Cretaceous to Jurassic aged sedimentary strata of the Gannett Group, reports of dinosaur and reptile fossil discoveries indicate that this group of formations is a potentially significant source of vertebrate fossil material.

Outcrops of the Triassic Thaynes and Permian Phosphoria Formations occur in mountain ranges of southeastern Idaho from the Blackfoot Mountains to the Bear Lake Plateau. The Thaynes consists of siliceous limestone with

interbedded, calcareous sandstone, siltstone, and shale. The Phosphoria is interbedded phosphorite, limestone, mudstone, and chert. Limestone beds of the Thaynes contain Ichthyosaur fossils and fossils of fish and possibly other Ichthyopsid animals. These are the only vertebrate fossils known to occur in Idaho from the Triassic Period. In the Phosphoria, beds of phosphorite and phosphatic mudstone contain fossils of fish and spiral-tooth shark. Shark's teeth occur in nodules imbedded in these sediments.

Within the PRA invertebrate fossils occur in both calcareous and siliceous sediments but are most commonly found in limestone deposits. The fauna represented are arthropods, brachiopods, coelenterates, bryozoans, mollusks, echinoderms, fusulinids, and conodonts.

Fossil plants in the area include Tempskya sp. (giant tree fern) and other tree species. Tempskya sp. fossils may occur throughout the area in various Paleozoic and Mesozoic sediments deposited in swampy environmental conditions. Reported occurrences involve Mississippian strata and the interbedded mudstones and sandstones of the Early Cretaceous Wayan Formation. Fossil trees associated with Tempskya sp., and found in the Wayan, include conifers, dicotyledons and cycads. Also, conifer, angiosperm, and other tree fossils may occur in ash flows of the Tertiary Salt Lake Formation along with various other fossil flora. Stromatolites (fossil algae) are found in some Cambrian sediments.

FOREST MANAGEMENT

The public land of the PRA include about 18,341 acres of commercial forest land, with Douglas-fir and lodgepole pine being the major commercial species. Subalpine fir and Engelmann spruce exist in the PRA. However, its limited occurrence makes it a minor commercial species. The commercial forest land contains a gross volume of 125 million board feet (MMBF) based on intensive forest inventories conducted from 1975 to 1985. The PRA also contains 33,736 acres of woodland, primarily quaking aspen, mountain maple, mountain mahogany, and juniper.

The commercial forest lands are located on 182 stands ranging from 8 to over 300 acres. The history of timber harvesting activities for the PRA is sparse. Approximately 1 MMBF is recorded as being harvested with 400 thousand board feet (MBF) being sold to J.R. Simplot around Simplot's Conda Mine. Inventory notes indicate other harvest has occurred over the last 40 to 50 years, but no quantifiable data is available.

A Timber Production Capability Classification Inventory was completed in 1984 in portions of the Bear Lake and Caribou Planning Units. Approximately 9,534 acres of commercial forest land was inventoried and over 80 percent was identified as suitable for the production of forest products. Approximately 1,042 acres of forest land were listed as

unsuitable for forest production due to regeneration moisture problems and unstable slopes. An additional 480 acres were considered noncommercial due to productivity reasons (not capable of producing 20 Ft/Acres/Year). The Petticoat Peak and Worm Creek WSAs has deferred 2,559 acres of suitable commercial forest land from intensive management guidelines. This acreage will remain in the allowable cut base, but will not be subjected to timber management activities at the present time. Several of the habitat types found in the PRA are indicative of problem reforestation sites. This results from competition from other plants, such as grasses, shrubs, and trees. Although pinegrass creates problems along these lines, the most serious competition in the PRA is from aspen.

Access is provided to most stands by dirt roads or jeep trails. Very few stands have legal access. A few stands can be reached only by foot or horseback across private ground. A temporary non-exclusive easement has recently been secured by the BLM to access timberlands in Moonlight Mine area. The 5-year Timber Sale Plan will require easements in the Lanes Creek, Garden Creek, and Chesterfield Reservoir area. Due to the highly scattered nature of the BLM forested land in the PRA, access will continue to be a management problem.

A majority of the conifer timber is near the 100-year age class and is approaching rotation age. Lodgepole pine stands in the PRA are for the most part past rotation age and are in poor condition. Most stands in the PRA are at, or near, a full stocking level. The general age class and the site index of these stands indicate that favorable, additional growth could be expected from these stands provided the stocking is reduced to desirable levels. Reforestation projects will become a priority in the PRA on understocked forest lands and on timber sale areas.

RIPARIAN AND WATER QUALITY

Approximately 777 acres of streamside riparian habitat in the PRA are in good to fair condition. A total of 97.44 miles, or 75 percent, of the riparian habitat was inventoried in this planning effort. There are 219.3 acres of marsh in the area covered by this RMP. The marsh acres are isolated tracts over which BLM has no control of water levels.

Of the streamside riparian habitat inventoried, 1.15 miles, or 1 percent, are in excellent condition, 55.30 miles, or 57 percent, are in good condition, 34.74 miles, or 36 percent, are in fair condition and 6.25 miles, or 6 percent, is in poor condition. A total of 34.15 miles of riparian habitat inventoried, or 35 percent, has the potential to be improved through BLM management actions. Other riparian habitat is either in good condition with no change in management required or is affected by land practices upstream over which the BLM has no control.

The factors analyzed in determining riparian habitat condition were riparian vegetation, water quality, and streambank and channel stability.

Water quality parameters measured were pH, alkalinity, carbon dioxide, acidity, conductivity, and temperature. Water quality on those streams inventoried was generally good (61 percent) to fair (35 percent). Streambank and channel stability was also good (71 percent) to fair (24 percent). This was calculated using the stream reach inventory and channel stability evaluation (R-1 USFS). Riparian vegetation was rated good (57 percent) to fair (36 percent). (See Appendix C for further information.)

The major impact on riparian habitat is overutilization by livestock. The removal of vegetative cover from streambanks increases water temperature, the susceptibility of streambanks to erosion, and trampling. Over time the widening of streambeds and increased sedimentation is generally detrimental to the fisheries habitat.

SOILS AND WATERSHED MANAGEMENT

The soils in the PRA may be separated into three main groups based on source of parent material and geology. The most extensive group is the soils formed in slope colluvium and alluvium. Many of these soils are influenced by loess (wind laid material) in the upper section of the profile. These soils occur throughout the PRA from the highest mountain to the valley floors.

The second largest group would be the shallow residual soils and side slope colluvium associated with steeper upland slopes.

The third group would be the deep loess (wind laid) soils located on the gentle valley slopes and leeward side of hills and mountains. These soils are subject to extreme erosion and generally have been eroded off the steeper slopes.

Wind erosion is not significant in the PRA. Some soils are in a moderate or a highly erodibility group, but these areas are small in size and are not subject to prolonged high wind velocities.

The average erosion rate for rangeland is 1.2 tons/acre/year (Soil Conservation Service, Idaho's Soil and Water: Condition and Trends, 1984). However, on slopes greater than 30 percent, natural erosion may be greater than 5 tons/acre/year on some soils when ground cover is reduced.

Most of the current erosion problems are on soils that developed from loess material and volcanic ash. Past damage has been caused by excessive livestock concentrations in certain areas and agricultural

development. Fire and fire suppression activities, vehicle use on unpaved roads and on two track trails, and ORV activity add to the erosion problem. Rill and gully erosion due to ORV use is a serious problem on the Pocatello Front area.

Some soils in the PRA with a high or very high erosion hazard have been overgrazed or have poor ecological vegetative condition. Areas that have fair or poor ecological vegetative condition have proven less effective in protecting the soil resource.

Trampling by livestock has been a direct cause of soil compaction. When infiltration rates are decreased, the result is an increase in runoff and subsequent soil loss (Rauzi and Hansen, 1966). Another form of erosion similar to water erosion in effect is trampling displacement. Like water erosion, trampling displacement is more evident as slope increases. The PRA is very prone to this form of erosion due to the many steep sideslopes utilized by livestock. Eventually this detached soil material enters streams, rivers, and other bodies of water degrading these systems.

Areas suitable for prime farmland make up less than a fraction of a percent on public land.

FIRE MANAGEMENT

Since 1974 there have been 328 wildfires suppressed in the PRA (see Table 3.9). These fires have burned a total of 26,087 acres. The average fire occurrence in the PRA is 23 fires per year with an average size of 94.2 acres. Project fires, which are fires that take several days to control, occur each year. The average number of project fires each year since 1981 is five.

The majority of the fires in the PRA are man-caused and represent 69 percent of the fires. The remaining 31 percent are caused by lightning.

The majority of the PRA is identified for full fire suppression, except for the 11,298 acre area around Petticoat Peak. This area has been identified as a Wilderness Study Area and fire suppression activities will be managed in accordance with BLM Interim Management Policy. The use of aerial retardant near live streams is restricted by the BLM and these restrictions will be followed.

The PRA has had little prescribed fire activity. A small test area (5 acres) was burned in the Stump Creek area in 1981, but no other burning has been proposed or accomplished.

TABLE 3.9
FIRE OCCURRENCES IN THE POCATELLO RESOURCE AREA
1974-1985

Year	No. Non- Project Sized Fires	Acres Burned	No. Pro- ject Fires	Acres Burned	Causes	
	Man		Lightning			
1974	27	66	3	365	24	6
1975	14	81	0	0	11	3
1976	10	131	1	438	7	4
1977	30	2,174	0	0	30	0
1978	23	398	0	0	12	11
1979	14	329	0	0	14	0
1980	11	329	0	0	8	3
1981	45	3,656	7	6,718	31	21
1982	15	495	3	340	8	10
1983	10	72	7	1,835	10	6
1984	13	93	3	287	10	6
1985	34	2,110	7	6,170	28	13
Totals:	246	9,934	31	16,153	193	83

ECONOMIC CONDITIONS

The PRA covers all or portions of seven counties located in southeastern Idaho. This discussion on economic conditions covers all seven counties and is reported only on a countywide basis. The counties covered: Bannock, Bear Lake, Bingham, Bonneville, Caribou, Franklin, and Power.

Earnings

Total earnings in the seven-county area in 1983 were \$1.35 billion (Bureau of Economic Analysis 1985). This consisted of \$1.24 billion in nonfarm earnings and \$0.11 billion in farm earnings. After adjusting for the effects of inflation (using the implicit GNP price deflator), these earnings represent a 5 percent decrease in nonfarm earnings and a 3 percent increase in farm earnings since 1979.

The number one industry in terms of earnings is services (this includes a variety of businesses such as hotels, motels, movie houses, colleges and universities, lawyers, doctors, and hospitals). Table 3.10 shows the 1983 earnings by industry in rank order. Data on earnings by county can be found in the Appendix E.

TABLE 3.10
1983 EARNINGS BY INDUSTRY

<u>Industry</u>	<u>Earnings</u>	<u>Rank</u>
Services	\$ 284,904	1
Manufacturing	225,636	2
State and Local Government	161,615	3
Retail Trade	131,738	4
Trans. and Public Utilities	130,234	5
Agriculture	110,703	6
Construction	74,702	7
Finance, Insurance, Real Estate	56,240	8
Federal, Civilian	38,862	9
Military	6,286	10
Other (mining, ag. serv., wholesale)	129,452	--
Total	\$1,350,372	--

Source: U.S. Dept. of Commerce, Bureau of Economic Analysis, 1985.

Employment

The data presented here are for wage and salary employment only. Data on proprietors (both farm and nonfarm) are not available.

Total wage and salary employment in the seven-county area in 1983 was 72,604 (Bureau of Economic Analysis 1985). This consisted of 4,767 farm jobs and 67,837 nonfarm jobs. These employment levels represent a 9 percent increase in farm employment and a 6 percent decrease in nonfarm employment since 1979.

Within the seven-county area services are the largest employer followed by retail trade and State and local government. Table 3.11 shows the 1983 employment in the PRA in rank order. Data on wage and salary employment by county can be found in Appendix E.

TABLE 3.11
1983 WAGE AND SALARY EMPLOYMENT

<u>Rank</u>	<u>Industry</u>	<u>Employment</u>
1	Services	14,084
2	Retail Trade	12,090
3	State and Local Government	11,843
4	Manufacturing	9,888
5	Wholesale Trade	5,377
6	Agriculture	4,767
7	Transportation and Public Utilities	4,320
8	Finance, Insurance, and Real Estate	3,109
9	Construction	2,601
10	Mining, Ag. Services	1,932
11	Federal, Civilian	1,560
12	Military	1,033
	Total:	72,604

Source: U.S. Dept. of Commerce, Bureau of Economic Analysis, 1985.

The rate of unemployment in the PRA has steadily declined over the three-year period (1982 to 1984). In 1982, the unemployment rate was 7.4 percent in the PRA (a weighted average of the seven county's unemployment rates). This declined to 6.7 percent in 1983 and 5.8 percent in 1984. At the same time, the rate of unemployment in the State as a whole was declining from 8.7 percent in 1982 to 7.5 percent in 1983 and 6.3 percent in 1984 (Idaho Department of Employment 1983, 1984, 1985). No data is available on unemployment rates by industry. Figure 3.F1 shows the Idaho and PRA unemployment rates for the years 1982 to 1984. Appendix E shows county specific unemployment rates.

Multipliers

When changes occur in one sector of a local economy, changes also occur in other sectors. This is due to the interrelated nature of the economy. These changes are measured through the use of multipliers. The multiplier is a single number that summarizes the total direct and indirect spending effects of a given change in the local economy. The U.S. Water Resources Council published gross output multipliers for the Bureau of Economic Analysis economic areas in January of 1977. The economic area that includes the PRA is 152. This includes most of southeastern Idaho and parts of western Wyoming. These multipliers (shown in Table 3.12) indicate that the industry in the local economy that would lead to the greatest change in other sectors would be the meat animals industry.

In addition to multipliers, output must be converted to earnings in order to estimate economic impact. This is done through the use of earnings to gross output ratios. These ratios have been calculated based on U.S. Water Resources Council procedures and are shown in Table 3.12.

TABLE 3.12
GROSS OUTPUT MULTIPLIERS AND EARNINGS/GROSS OUTPUT RATIOS
BUREAU OF ECONOMIC ANALYSIS ECONOMIC AREA 152 1/

<u>Industry</u>	<u>WRC Sector 2/</u>	<u>Multiplier</u>	<u>Earnings/ Gross Output Ratio</u>
Agriculture	(03) Livestock	2.547	0.2447
	(08) Crops	2.496	0.3850
Manufacturing	(38) Lumber and Wood	2.215	0.2729
Retail Trade	(54) Retail Trade	2.208	0.3969
Mining	(17) Chemical/Fertilizer	1.878	0.2855

1/ The area that includes the PRA.

2/ WRC sectors may include several standard industrial classifications.

Figure 3.F1

UNEMPLOYMENT

IDAHO AND RMP AREA

