PRELIMINARY ENVIRONMENTAL REPORT

Warm Springs Ranch Resort
Ketchum, Idaho

Prepared for
DDRM Greatplace, LLC
Park City, Utah

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1.0 INTRODUCTION

Helios, LLC is proposing to develop the Warm Springs Ranch Resort on the former Warm Springs Ranch Golf Course and Restaurant property west of Ketchum, Idaho. This environmental report provides the historic and natural resource assessment for the Warm Springs Ranch property. Field studies, review of existing data, compilation of information, and reports used for this document have been produced by a team of consultants with local knowledge of the resource area.

1.1 Goals and Objectives

The goals and objectives of this environmental report are to:

- Identify key environmental resources on the property including unique or fragile areas, native habitats, and areas of value to fish, wildlife, and species of special concern.
- Determine vegetation types and the presence of special status plants.
- Determine the presence of historically significant structures and sites.
- Describe the composition of wetlands and waterways.
- Discuss the environmental resources and constraints for the property used in project design and planning.
- Complete an impact analysis for the proposed development to identify impacts on vegetation, habitat, fish and wildlife, waterways and wetlands, cultural resources, water and air.
- Outline mitigation measures to minimize impacts occurring on the property.
- Identify the BMP's, performance standards, and monitoring necessary for project construction and mitigation in accordance with federal, state, and local environmental policy.
- Identify resource improvement opportunities.

1.2 Consulting Team Responsibilities

A number of consultants and biologists have conducted field survey work on the property from 2004 to 2007. Responsibilities have included:

- **Project Design and Planning** – Allen + Philp
- **Civil Engineering and Survey** - Benchmark Associates
- **Cultural Resources** - Madeline Buckendorf
- **Fish and Wildlife** - Kaz Thea, Larry Barnes, Kris Thoreson, and Rob Hazlewood
- **Wetlands and Riparian** - Trent Stumph, Sawtooth Environmental

- **Botany** - Carol Blackburn, Botanist
- **Landscape Design** – Neill-Vecchia Associates
- **Water Rights** – Dr. Chuck Brockway, P.E. Brockway Engineers, PLLC
- **Floodplain Analysis** - Mike Homza, P.E., GeoEngineers
- **Geotechnical** – Dave O'Day, P.E., GeoEngineers

1.3 Property Description

1.3.1 Location of Area and Legal Description

The Warm Springs Ranch is located in T4N, R17E, Sections 11, 12, and 13, Blaine County, Idaho. The property is approximately one mile west of Ketchum, Idaho in the Warm Springs Creek valley. The majority of the property is located between Warm Springs Creek and the southern valley margin formed by Bald Mountain, which is part of the Smoky Mountains. The property is bordered by Forest Service and Bureau of Land Management public lands and numerous residential subdivisions.

[See FIGURE EV.1: Vicinity Map for Warm Springs Ranch, in Warm Springs Ranch Resort Formal Application Submittal, Part 2: Exhibits Submittal, Section EV, Figure EV.1]

[See FIGURE EV.2: Existing Conditions Map for Warm Springs Ranch, in Warm Springs Ranch Resort Formal Application Submittal, Part 2: Exhibits Submittal, Section EV, Figure EV.2]

[See FIGURE EV.3: Site – 2003 Aerial Photo of Warm Springs Ranch, in Warm Springs Ranch Resort Formal Application Submittal, Part 2: Exhibits Submittal, Section EV, Figure EV.3]

1.3.2 Overview of Landscape

At present, the Warm Springs Ranch Resort consists of the former Warm Springs Ranch Restaurant, nine-hole golf course, tennis courts, several artificially created ponds, and various equipment/storage sheds and service outbuildings. Warm Springs Ranch primarily exists in an urban setting and a significant portion of the 77 acre ranch is comprised of artificial golf turf. Major habitat types found on the property consist of a Douglas fir forest, which exists on the north facing slopes of Bald Mountain and forms the southern border of the property and some healthy cottonwood riparian habitat, which is predominantly located on the south end of the property adjacent to Warm Springs Creek. Small habitat inclusions/patches of habitat occur on the property and contain a mixture of willows, spruce, aspen, weed patches, uplands and cottonwood trees along portions of the creek upstream from the Warm Springs Ranch Restaurant. Patches of vegetation composed of a variety of mature trees are found throughout the golf course turf. These small areas of vegetation provide limited habitat for wildlife.

Warm Springs Creek flows through the property and confluences with the Big Wood River approximately ½ mile downstream from the southern property boundary. The one mile length of stream on the property has incurred a series of physical alterations that has straightened and confined the natural stream channel and removed much of its riparian vegetation. The proposed redevelopment of the property will include the enhancement of Warm Springs Creek to restore the stream and riparian habitat to a more natural self-sustaining condition. The goals of the stream work will be to improve fish habitat and passage, lower flood hazards and create riparian wildlife habitat.

1.3.3 Historic Land Use and Ownership

Two employees of the historic Philadelphia Smelter that was located outside of Ketchum first filed public land claims on portions of the property during the 1880s and established two separate cattle ranches that operated until the 1940s. In 1925, the State of Idaho established the Warm Springs Game Preserve in the area between Bald Mountain and the two ranches. The preserve helped protect the local elk and deer population and reduced damage to livestock feed caused by the wintering herds. The preserve remained there through the mid-1940s. Idaho Fish and Game officials continued to feed deer and elk near Warm Springs Creek until the 1950s.

Owen Simpson, owner of Ketchum's Sawtooth Club, was one of the investors who purchased the two ranches in 1947. The combined property was named Warm Springs Ranch. In a few years, Simpson bought out the other investors and became the sole owner. He built the Warm Springs Inn restaurant in 1951-52 and constructed a small rodeo arena that operated for only a few years. Simpson also developed fish ponds, a golf course, and tennis courts on the site. After Owen retired in the 1960s, his son Jack and wife Mary managed the restaurant and golf course. The restaurant became a favorite hangout for Earnest Hemingway, the Kennedy family and several movie stars who vacationed at Sun Valley. The Simpson family sold the Warm Springs Ranch property in 2003.

2.0 VEGETATIVE AND HABITAT ASSESSMENT

2.1 Objectives and Methods

Field surveys and habitat assessments were conducted on Warm Springs Ranch from 2004 to 2007. Objectives were to determine vegetative communities based on dominant plant species, determine the relative value of each vegetative community to wildlife, and determine the presence of special status plants and animal species. Methods used to determine the plant communities include:

- Detailed plant transects completed by botanist Carol Blackburn, 2004.
- Habitat survey conducted by botanist Carol Blackburn and biologists Kris Thoreson and Kaz Thea during the summer of 2007.

- Review of historic aerial photographs.
- Review of Idaho Fish and Game-Conservation Data Center reports dated July 13, 2007 to determine if special status plant species may occur in the area.
- Review of U.S. Fish and Wildlife Service lists of endangered, threatened, proposed or candidate species dated July 19, 2007.
- Mapping of existing habitat types on aerial photographs to illustrate the location and relationship that exists between varying habitat types.

[See FIGURE EV.4: Existing Land Cover and Vegetation for Warm Springs Ranch, in Warm Springs Ranch Resort Formal Application Submittal, Part 2: Exhibits Submittal, Section EV, Figure EV.4]

2.2 Existing Vegetation

With the exception of a few major habitat types, the native plant communities have been extirpated and little remains of the original vegetation. Regardless of vegetative stand or patch size, or wildlife value, all existing vegetation and land cover was documented on or immediately adjacent to the property and is described below. Following are descriptions of the existing vegetation found on the property which includes a list of dominate plant species, structure and composition, and general condition, function and value.

2.2.1 Douglas Fir Forest

Dominant Species

Douglas Fir *(Pseudotsuga menziesii)*, Snowberry *(Symphoricarpos oreophilus)*, Ninebark *(Physocarpus malvaceus)*, Woods Rose *(Rosa woodsii)*, Rocky Mountain Maple *(Acer glabrum)*, Chokecherry *(Prunus virginiana)*, Serviceberry *(Amelanchier alnifolia)*, Currant *(Ribes spp.)*, Oregon Grape *(Mahonia repens)*, Pine Bluegrass *(Poa scabrella)*, Bedstraw *(Galium boreale)*, Western Yarrow *(Achillea millefolium)*, Ferry Bells *(Disporum trachycarpum)*

Structure and Composition

The Douglas fir forest consists of a dense canopy of mature Douglas fir trees with an understory of shrubs, grasses, and forbs in good condition. Douglas fir forest is found on the north and east facing slopes of Bald Mountain and is the most dominant natural habitat found on Warm Springs Ranch.

Condition, Function and Values

This habitat type is the largest natural habitat type on the site. However, the relationship of this habitat to human activities limits wildlife use. The dense canopy in the conifer forest provides some hiding, resting, and escape cover for large and small mammals. The Douglas fir forest offers

some protection for daily movement of these animals during spring, summer and fall. The multi layered canopy of the Douglas fir forest and associated shrubs provides nesting and feeding habitat for resident and migratory birds.

2.2.2 Cottonwood Riparian Forest - Wetlands

Dominant Species

Black Cottonwood *(Populus tricocarpa)*, Quaking Aspen *(Populus tremuloides)*, Woods Rose *(Rosa woodsii)*, Orchard Grass *(Dactylis glomerata)*, Smooth Brome Grass *(Bromus inermis)*, Goldenrod *(Solidago spp.)*

Structure and Composition

The Cottonwood riparian forest is dominated by black cottonwood and contains a woody understory of woods rose along with a variety of grasses and forbs. The cottonwood riparian forest and wetland complex is found primarily in the south portion of the property between Warm Springs Creek and the toe of the east slope of Bald Mountain. Elsewhere on the site, the cottonwood forest is located in remnant patches and thin bands along Warm Springs Creek upstream from the former Restaurant. The condition of the cottonwood forest on the southern end of the property is good.

Condition, Function and Values

Cottonwood forests provide habitat diversity, especially where there is a multi-layered understory. The existing cottonwood forest, due to its location in the floodplain of Warm Springs Creek, also serves to slow flood waters and stabilize stream banks. The remnant patches or small vegetative inclusions on the property provide limited quality habitat for birds.

2.2.3 Cottonwood – Aspen - Willow

Dominant Species

Black Cottonwood *(Populus tricocarpa)*, Quaking Aspen *(Populus tremuloides)*, Smooth Brome Grass *(Bromus inermis)*, Bluegrass *(Poa spp.)*, Willow *(Salix spp.)*, Spotted Knapweed *(Centaurea biebersteinii)*,

Structure and Composition

These vegetation patches contain a combination of black cottonwood, aspen, willow and spruce. Some appear to have been planted and include non-native plants. The understory of the cottonwood-aspen islands consists primarily of golf turf. These patches are found on the western half of Warm Springs Ranch in the manicured golf turf, in thin bands along

Warm Springs Creek, primarily between the creek banks and golf turf, and around the former Warm Springs Restaurant.

Condition, Functions, and Values
Like the spruce-fir, the cottonwood-aspen-willow patches break up the abundant golf turf and slightly add to the habitat diversity on the property. The cottonwood-aspen-willow patches contain an understory of bluegrass and weeds which is of little value to wildlife. Due to lack of a dense understory this vegetation offers limited habitat for wildlife.

2.2.4 Disturbed Areas

Dominant Species
Great Basin Wild-rye Grass *(Leymus lanceolatus)*, Smooth Brome Grass *(Bromus inermis)*, Spotted Knapweed *(Centaurea biebersteinii)*

Composition and Structure
The disturbed areas consist of bare ground, some Great Basin wildrye grass and noxious weeds such as spotted knapweed. This area exists between the base of Bald Mountain and southwest bank of Warm Springs Creek across from the site of the former tennis courts.

Condition, Function and Values
This plant community is highly disturbed and in its present form provides little value to wildlife.

2.2.5 Grassland

Dominant Species
Smooth Brome Grass *(Bromus inermis)*, *Bluegrass (Poa spp.)*, Great Basin Wildrye Grass *(Leymus lanceolatus)*, Goldenrod *(Solidago Canadensis)*, Western Yarrow *(Achillea millefolium)*

Composition and Structure
This habitat inclusion, which is small in total area, is comprised of a variety of grasses and forbs and is located on the west end of the property.

Condition, Function and Values
The grassland provides habitat for small rodents and ground nesting and foraging birds but is limited because of the small size. Grasses and forbs may also provide forage for elk and deer.

2.2.6 Sage-Steppe

Dominant Species
Big Sagebrush *(Artemisia tridentate)*, Rubber Rabbit Brush *(Chrysothamnus nauseosus)*, Greene Rabbit Brush *(Chrysothamnus greenei)*, Wheatgrass

(Agropyron spp.), Spotted Knapweed *(Centaurea biebersteinii)*, Aster *(Aster spp)*, Scarlet Gilia *(Lpomopsis aggregate)*

Structure and Composition
The sage-steppe area consists of big sagebrush with a combination of forbs and grasses existing in the understory. Approximately 3.5 acres of the property remain in sage-steppe habitat. Sage-steppe is found on the west end of Warm Springs Ranch near Warm Springs Creek. Study of aerial photos taken in 1943 and comparison to similar undisturbed surrounding areas suggest that the sage-steppe habitat is a small fragment of what was once a much larger area.

Condition, Function and Values
This area is highly disturbed and exists as an isolated fragment. In its present condition the sage-steppe habitat is of little value to wildlife.

2.2.7 Manicured Golf Turf – Spruce -Fir

Dominant Species
Douglas Fir *(Pseudotsuga menziesii)*, Spruce *(Picea spp.)*, Rubber Rabbit Brush *(Chrysothamnus nauseosus)*, Greene Rabbit Brush *(Chrysothamnus greenei)*, Woods Rose *(Rosa woodsii)*, Smooth Brome Grass *(Bromus inermis)*, Golf turf consisting primarily of Kentucky blue grass *(Poa spp.)*.

Structure and composition
Approximately 20 acres of Warm Springs Ranch is comprised of manicured golf turf. The manicured golf turf is found where the golf course existed as well as on the grounds surrounding Warm Springs Restaurant. The spruce-fir is found in long thin bands within the manicured golf turf. The understory of the western-most island is dense, consisting of shrubs and grasses.

Condition, Function and Values
The Kentucky bluegrass golf turf is of little overall value to wildlife. The Spruce fir vegetation offers little wildlife habitat value and currently serves only to break up the monoculture created by the artificial golf turf.

2.3 Important Habitat

The habitats described below are the important habitat types found on the property that should be protected, restored and enhanced to the greatest extent possible. These habitats are generally in good condition and provide multi-layered structure and habitat for wildlife, although there are areas within these habitat types that are disturbed.

[See FIGURE EV.8: Important Habitat Map for Warm Springs Ranch – Douglas Fir Forest and Cottonwood Riparian and Wetland Complex, in Warm Springs Ranch Resort Formal Application Submittal, Part 2: Exhibits Submittal, Section EV, Figure EV.8]

2.3.1 Douglas Fir Forest

The largest area of natural habitat found on the property is the Douglas fir forest. The Douglas fir forest located on the north and east facing slope of Bald Mountain provides security and hiding cover for deer and elk during the spring, summer and fall. This forest stand provides habitat for deer and elk to move on Bald Mountain and provides habitat for resident and migratory birds and small mammals. The Douglas fir forest does not provide winter habitat for elk or deer due to its north facing aspect.

2.3.2 Cottonwood Riparian Forest - Wetlands

This habitat type is adjacent to or near Warm Springs Creek. Historical photographs of the property indicate that this forest habitat type was more abundant in the past than it is today. In areas where just mature canopy exists there is limited nesting habitat for birds. In a healthy condition, these habitats play a role in stabilizing soil and slowing flood waters in addition to providing shade for the creek, which can lower water temperatures for aquatic species. Where understory exists, cottonwood forests provide habitat for birds and small mammals. Cottonwood riparian forest is dominated by black cottonwood and contains a woody understory of willow, woods rose along with a variety of grasses and forbs. Cottonwood forest is found primarily in the south portion of Warm Springs Ranch between Warm Springs Creek and the toe of the east slope of Bald Mountain. The condition of the forest on the southern end of the property is good, although there are areas within this habitat that are disturbed. Elsewhere on the site, the cottonwood trees occur in remnant patches or in thin bands along Warm Springs Creek upstream from the former Warm Springs Restaurant.

2.4 Noxious Weeds

A variety of non-native invasive species such as knapweed (*Centaurea spp.*), occur on the property. Knapweed exists on the east end of the property in the disturbed plant community and elsewhere in areas of high disturbance. Invasive plant species reduce the value of the habitat for wildlife and degrade the aesthetic value of the property.

2.5 Special-Status Plants

Correspondence with state and federal agencies and field work conducted by botanist Carol Blackburn in 2004 and 2007 indicates that no special status plant species or critical habitat exist on the property or in the area. Special status species would include federally endangered, threatened, proposed or candidate

species as listed in U.S. Fish and Wildlife Service correspondence dated July 19, 2007 and entitled "Warm Springs Ranch Restoration and Enhancement Project – Blaine County, Idaho – Species Update List, file #970.0700 2007-SL-0652." Idaho designated "species of greatest concern" are listed in Idaho CDC correspondence dated July 13, 2007.

The Special Status Plants List for Blaine County Idaho as provided by the Idaho Conservation Data Center on July 3, 2007 includes the following plants: Meadow Pussytoes *(Antennaria arcuata)*, Mourning Milkvetch *(Astragalus atratus var. inseptus)*, Picabo Milkvetch *(Astragalus oniciformis)*, Buxbaum's Sedge *(Carex buxbaumii)*, Mt. Shasta Sedge *(Carex straminiformis)*, Beautiful Indian Paintbrush *(Castilleja pulchella)*, Small Yellow Lady's-slipper *(Cypripedium parviflorum var. pubescens)*, Yellowstone Draba *(Draba incerta)*, Bugleg Goldenweed *(Haplopappus insecticruris)*, Obscure Phacelia *(Phacelia inconspicua)*, Marsh's Bluegrass *(Poa abbreviata ssp. marshii)*, Arctic Buttercup *(Ranunculus gelidus)*, Wedge-leaf Saxifrage *(Saxifraga adscendens var. oregonensis)*, Nodding Saxifrage *(Saxifraga cernua)*, Petalless Campion *(Silene uralensis ssp. Montana)*

[See ATTACHMENT 1 – U.S. Fish and Wildlife Service Species List for Warm Springs Ranch, dated July 19, 2007]

[See ATTACHMENT 2 – The Idaho Conservation Data Center Database Screen for Warm Springs Ranch, dated July 13, 2007]

3.0 WILDLIFE SURVEY

3.1 Objectives and Methods

Wildlife surveys were conducted on the property in 2004/05 and 2007 to identify the presence of animals, their locations, and general use of the area. A variety of methods were used to determine fish and wildlife habitats and their use on Warm Springs Ranch. Studies were also conducted to determine the possible presence of endangered, threatened or candidate species under the endangered species act. These methods included:

- Field studies of fish and wildlife conducted in 2004/05 and 2007.
- Review of Idaho Department of Fish and Game maps for elk winter range, mule deer winter range, and mule deer migration corridors.
- Review of U.S. Fish and Wildlife Service species lists for endangered, threatened, proposed or candidate species dated July 19, 2007.
- Review of Idaho Department of Fish and Game Conservation Data Center lists for "species of special concern" dated July 13, 2007.
- Review of StreamNet data to determine the presence of aquatic "species of special concern" dated July 13, 2007.

- Stream and field surveys to determine the presence of "species of special concern" as defined by the Idaho Fish and Game CDC.

Wildlife surveys were conducted by biologists with local and regional expertise during different seasons and at different times of the day. Information gathered was recorded. Additional information was obtained from area residents, local wildlife enthusiasts with specific knowledge of wildlife species, and the Idaho Department of Fish and Game.

3.2 Fish and Wildlife Observed on the Property

Wildlife observed using the property includes those species commonly associated with native Douglas fir forest and open space that dominates the site.

3.2.1 Mammals Observed

- Ungulates: Elk *(Cervus elaphus)*, Mule Deer *(Odocoileus hemionus)*, Moose *(Alces alces)*
- Carnivores: Red Fox *(Vulpes vulpes)*, Mink *(Mustela vison)* , Black Bear *(Ursus americanus)*
- Rodents, Squirrels, and Gophers: Least Chipmunk *(Tamias minimus)*, Columbian Ground Squirrel (*Citellus columbianus)*, Red Squirrel *(Tamiasciurus hudsonicus)*, Northern Pocket Gopher *(Thomomys talpoides)*
- Beaver: American Beaver *(Castor canadensis)*, Muskrat *(Ondatra zibethica)*

3.2.2 Birds Observed

- Swans, Geese, Ducks: Canada Goose *(Branta canadensis*), Mallard *(Anas platyrhynchos)*
- Vultures, Hawks and Eagles: Red-tailed Hawk *(Buteo jamaicensis)*, Turkey Vulture *(Cathartes aura)*, American Kestrel *(Falco sparvarius)*
- Pigeons, Doves and Cuckoos: Mourning Dove *(Zenaida macroura)*
- Kingfishers and Woodpeckers: Belted Kingfisher *(Ceryle alcyon)*, Northern Flicker *(Colaptes auratus)*, Downy Woodpecker *(Picoides pubescens)*, Red-naped Sapsucker *(Sphyrapicus nuchalis)*, Hairy Woodpecker *(Picoides villosus)*, Pileated Woodpecker *(Dryocopus pileatus)*
- Flycatchers: Western Wood-pewee *(Contopus sordidulus)*, Willow Flycatcher *(Empidonax traillii)*, Dusky Flycatcher*(Empidonax oberholseri)*
- Swallows: Violet-green Swallow *(Tachycineta thalassina)*, Tree Swallow *(Tachycineta bicolor)*, Barn Swallow *(Hirundo rudtica)*, Cliff Swallow *(Petrochelidon pyrrhonota)*, Northern Roughed-winged Swallow *(Stelgidopteryx serripennis)*

- Jays, Crows, Magpies: Black-billed Magpie *(Pica hudsonia)*, American Crow *(Corvus brachyrhynchos)*, Clark's Nutcracker *(Nucifraga columbiana)*
- Chickadees, Titmice and Nuthatches: Black-capped Chickadee *(Poecile atricapillus)*, Mountain Chickadee *(Poecile gambeli)*, Brown Creeper *(Certhia americana)*, Red-breasted Nuthatch *(Sitta canadensis)*
- Wrens and Dippers: House Wren *(Troglodytes aedon)*, American Dipper *(Cinclus mexicanus)*
- Thrushes and Thrashers: Ruby-crowned Kinglet *(Regulus calendula)*, American Robin *(Turdus migratorius)*, Gray Catbird *(Dunetella carolinensis)*, Golden-crowned Kinglet *(Regulus satrapa)*, Hermit Thrush *(Catharus guttatus)*
- Waxwings and Starlings: Cedar Waxwing *(Bombycilla cedrorum)*, European Starling *(Sturnus vulgaris)*
- Vireos and Warblers: Cassin's Vireo *(Vireo cassinii)*, Warbling Vireo *(Vireo gilvus)*, Yellow Warbler *(Dendroica petechia)*, MacGillivray's Warbler *(Oporornis tolmiei)*, Yellow-rumped Warbler *(Dendroica coronata)*, Orange-crowned Warbler *(Vermivora celata)*
- Towhees and Sparrows: Oregon junco *(Junco hyemalis)*, Chipping Sparrow *(Spizella passerina)*, Fox Sparrow *(Passerella iliaca)* , Song Sparrow *(Melospiza melodia)*
- Grosbeaks, Buntings and Tanagers: Lazuli Bunting *(Passerina amoena)*, Black-headed Grosbeak *(Pheucticus melanocephalus)*
- Meadowlark's, Blackbirds and Orioles: Red- winged Blackbird (Agelaius pheoniceus), Brewer's Blackbird *(Euphagus cyancophalus)*, Brown-headed Cowbird *(Molothrus ater)*, Northern Oriole *(Icterus galbula)*, Western Tanager *(Piranga ludoviciana)*, Bullocks Oriole *(Icterus bullocki)*
- Finches and Crossbills: American Goldfinch *(Carduelis tristis)*, Pine Siskin *(Carduelis pinus)*, Red Crossbill *(Loxia curvirostra)*, Cassin's Finch *(Carpodacus cassinii)*, House Finch *(Carpdacus mexicanus)*

3.2.3 Reptiles Observed

- Snakes: None

3.2.4 Amphibians Observed

- Toads and Frogs: None

3.2.5 Aquatic Species Observed

- Fish: Rainbow trout (Oncorhynchus mykiss)

3.3 Wildlife Discussion

Due to the residential nature of the property and the lack of suitable habitat, resident wildlife populations are mostly confined to small mammals and birds. Large mammals such as deer and elk use the site as a small part of their larger home range. Bird counts conducted on the site in 2004 and in 2007 resulted in 59 bird species observed. Most of the birds were observed in the isolated fragments of natural habitat that remain on the property. Birds that are indicators of good quality riparian habitat, such as the veery and grey catbird, were not present on the site. The former golf course, which comprises a significant portion of the total area within the property, is able to support little more than American crows and American robins.

3.3.1Big Game

3.3.1.1 Mule Deer

Mule deer have been observed on property during the spring, summer, and fall. Mule deer occupy portions of the site on a limited basis since it comprises a small part of their total range. Mule deer may migrate up and down the valley as seasons dictate and often follow creek and river corridors during this movement. Some mule deer likely pass through the site during their migration, even though it is not a designated mule deer migration corridor. Mule deer winter far to the south of the Wood River Valley and as a result would not use the property and its associated north facing slope as winter habitat. Most of the mule deer observed on the site are likely moving to and from more suitable habitat found on Bald Mountain. No portion of the property has been identified as mule deer winter range or as a mule deer migration corridor.

3.3.1.2 Elk

In the past, elk were fed artificially on the property as part of a privately operated winter sleigh ride and dining experience. Elk populations during the winter were often at or above 100 animals, a population that is far greater than would have occurred naturally due to the unsuitability of north facing slopes for wintering elk. Artificial feeding operations are, in the long term, hazardous to elk populations. By concentrating elk in unusually large numbers, the opportunity for spread of disease is much greater. Additionally, elk that feed on naturally available vegetation tend to carry more weight through the winter and produce healthier offspring than elk that have been artificially fed.

During the winter of 2005/06 the Idaho Department of Fish and Game, in co-operation with the former owners of Warm Springs Ranch, implemented a trapping program to remove artificially fed elk from the site. Adult females were transported to suitable winter habitat south of the Wood River Valley while young elk and bulls were transported farther up the drainage to the Bullwhacker feeding site. During this trapping operation approximately 120 elk were

relocated from the property. During the mild winter of 2006/07, few if any elk were observed on the property.

In late August and early September, 2007, the Castle Rock Fire burned a large portion of the habitat occupied by elk in the Warm Springs drainage. The fire will probably have a short term adverse impact on elk winter ranges in the area, which may alter elk use patterns. Further monitoring may need to be conducted to determine the effects of the fire on winter elk distributions, and its potential impact on the property, if any.

Elk have been observed in limited numbers on the property during the spring, summer and fall. Winter range for elk is found off the property on south facing slopes of the Warm Springs drainage. The land that comprises Warm Springs Ranch represents only a small portion of the total range occupied by elk. Elk found on the property are most likely using it as they move to and from more suitable habitats or cross the property during fall and spring migrations. Elk may also spend a limited amount of time feeding and resting in suitable portions of the property. No portion of the property has been officially designated as an elk migration corridor or elk winter range by the Idaho Department of Fish and Game.

3.3.1.3 Moose

Moose are often closely associated with water where they feed on shrubs, twigs, saplings and aquatic vegetation. Limited browse and security cover exists on property for moose. However, their use has been confirmed by the presence of scat during 2004 surveys.

3.3.2 Small Mammals

Small mammals found on the property include red squirrels that occupy the Douglas fir forest and least chipmunks that make their home in the shrubby understory of the Douglas fir forest. Columbian ground squirrels, which prefer to burrow in meadows at the edges of the Douglas fir forest, have also been observed on the manicured golf turf. Northern pocket gophers have also been observed on the manicured golf turf.

3.3.3 Predators

Black bears commonly occur on the west side of Ketchum during the spring, summer, and fall and have been observed on the south end of the property on a regular basis. Black bears feed on natural food sources that grow near Warm Springs Creek and are attracted to human food sources in the area. Another large predator that has been observed on the property feeding on an elk kill in 2004 is the mountain lion. Gray wolves have become common inhabitants of the Wood River Valley but have not been observed on the property. An established den site has been documented approximately ten miles to the north. Wolf

activity has also been observed west of the property in the upper Warm Springs drainage. Small predators observed on the site include the red fox and mink. Red fox may be found in any location on the site while mink are associated with water and areas adjacent to Warm Springs Creek.

3.3.4 Birds

3.3.4.1 Upland Game Birds

Warm Springs Ranch lacks suitable habitat for upland game birds. It is likely that at certain times of the year blue grouse, which is a common inhabitant of Douglas fir forests, could be found in these areas.

3.3.4.2 Waterfowl

Waterfowl species observed on the property include the mallard and Canada goose. Both of these species are locally common and highly adaptable to human disturbance. Canada geese have been observed resting and feeding on the manicured golf turf while mallards are found using Warm Springs Creek.

3.3.4.3 Raptors

Two raptor species, fledgling red-tailed hawks and American kestrels, have been observed on the property. No raptor nests have been observed.

3.3.4.4 Other Birds

A number of migratory bird species have been observed on the site.

3.3.5 Reptiles

No reptiles have been observed on Warm Springs Ranch. It is likely that the western terrestrial garter snake, a common inhabitant of the Wood River Valley, exists on the site near Warm Springs Creek and adjacent habitats.

4.0 AQUATIC SURVEY

During 2004 an aquatic habitat assessment was completed. This assessment revealed the presence of rainbow trout in Warm Springs Creek. An additional survey of Warm Springs Creek within the property was conducted in August 2007 to determine the presence of special status invertebrates as identified in Idaho Conservation Data Center correspondence dated July 13, 2007. Wood River sculpin, a species of special concern, was not observed in either of the above surveys.

4.1 Fish

Rainbow trout have been observed in Warm Springs Creek on the property. The abundance of trout is greater in the lower 1/3 of the creek than the upper 2/3 of the Creek. Trout likely do not spawn in most of the project area due to a lack of spawning habitat.

According to the "Burned Area Emergency Response Plan for Castle Rock Fire" produced by the Ketchum Ranger District of the Sawtooth National Forest, native rainbow trout species in Warm Springs Creek consisted of the interior redband subspecies *(Oncorhynchus mykiss gairdneri).* This native trout has been hybridized by decades of stocking with the coastal subspecies of rainbow trout *(Oncorhynchus mykiss irideus).* Today, only Red Warrior Creek in the Warm Springs Creek drainage appears to support native redband trout.

Wood River sculpin, a resident endemic fish and "species of special concern" occurs in Warm Springs Creek. Onsite surveys conducted in 2004 and 2007 have not confirmed the presence of this fish within the property. According to the "Burned Area Emergency Response Plan for Castle Rock Fire" produced by the Ketchum Ranger District of the Sawtooth National Forest, a September 10, 2007 survey of four sites on Warm Springs Creek upstream from the property revealed that multi-year classes of Wood River sculpin existed.

Other fish that may exist within the property include brook trout *(Salvelinus fontinalis)* and mountain whitefish *(Prosopium williamsoni).*

4.2 Aquatic Invertebrates

According to Idaho CDC correspondence dated July 13, 2007, two aquatic "species of special concern," *(Bolshecapnia milami)* and *(Malenka tina)* may exist "within or within the vicinity" of Warm Springs Creek. Benthic invertebrate surveys conducted in August of 2007 revealed that neither of these species of stonefly occurs in the portion of Warm Springs Creek on the property.

5.0 SPECIES OF SPECIAL CONCERN

None of the above field observations, plant and wildlife surveys, and bird or aquatic habitat assessments (2004-07) revealed the presence of any special status plant or animal species on the property. Special status species would include federally endangered, threatened, proposed or candidate species as described by U.S Fish and Wildlife Service correspondence from July 19, 2007 entitled "Warm Springs Ranch Restoration and Enhancement Project – Blaine County, Idaho – Species Update List - File #970.0700 2007-SL-0652." Other special status species would include Idaho designated "species of special concern" as described by Idaho CDC correspondence from July 13, 2007. Special status aquatic species would be identified by the "StreamNet Data Request" from July 13, 2007.

[See ATTACHMENT 3 – The Idaho Department of Fish and Wildlife StreamNet Report for Warm Springs Ranch, dated July 13, 2007]

Species which "may occur in the area of the proposed project" according to U.S. Fish and Wildlife correspondence from July 19, 2007 include the gray wolf *(Canis lupus)* which is an endangered "experimental/non-essential population" and the Yellow-billed cuckoo *(Coccyzus americanus)* which is a candidate species. Neither of these two species was observed on the proposed project site or is expected to occur because of poor quality habitat for these species.

As previously mentioned, a database review of the property by the Idaho CDC for plant and animal species revealed that two rare stonefly species, *Bolshcapnia milami* and *Malenka tina* have been observed "within or within the vicinity" of the proposed project site. Benthic Invertebrate studies conducted in 2007 indicate that the above mentioned stoneflies do not exist on the property.

The StreamNet Data search by Idaho Department of Fish and Game indicates the documented presence of the Wood River sculpin (Cottus leiopomus) in the Big Wood River. Idaho Department of Fish and Game and others have surveyed for the species in Warm Springs Creek and they do occur in varying densities in the Creek. Aquatic field surveys on the property did not identify the presence of the Wood River sculpin.

The Species of Special Concern List for Blaine County Idaho as provided by the Idaho Conservation Data Center on July 3, 2007 is shown below. The list is a subset of the state "Species of Greatest Conservation Need" list and includes:

> Animals: American White Pelican (*Pelecanus erythrorhynchos*), Bald Eagle (*Haliaeetus leucocephalus*), Black Tern (*Chlidonias niger*), Black-crowned Night-heron (*Nycticorax nycticorax*), Boreal Owl (*Aegolius funereus*), Brewer's Sparrow (*Spizella breweri*), California Gull (*Larus californicus*), Caspian Tern (*Sterna caspia*), Clark's Grebe (*Aechmophorus clarkia*), Desert Valvata, Ferruginous Hawk (*Buteo regalis*), Flammulated Owl (*Otus flammeolus*), Forster's Tern (*Sterna forsteri*), Gray Wolf (*Canis lupus*), Long-billed Curlew (*Numenius americanus*), Canada Lynx (*Lynx Canadensis*), Merlin (*Faico columbarius*), North American Wolverine (*Gulo gulo luscus*), Peregrine Falcon (*Falco peregrinus*), Piute (Great Basin) Ground Squirrel, Pygmy Rabbit (*Brachylagus idahoensis*), Sandhill Crane (*Grus Canadensis*), Snowy Egret (*Egretta thula*), Three-toed Woodpecker (*Picoides dorsalis*), Townsend's Big-eared Bat (*Corynorhinus townsendii*), Trumpeter Swan (*Cygnus buccinator*), Western Grebe (*Aechmophorus occidentalis*), White-faced Ibis (*Plegadis chihi*), Yellow-billed Cuckoo (*Coccyzus americanus*)
>
> Fish: Bull Trout (*Salvelinus confluentus*), Chinook Salmon (*Oncorhynchus tshawytscha*), Inland Columbia Basin Redband Trout (*Oncorhynchus mykiss gairdneri*), Leatherside Chub (*Gila copei*), Steelhead (*Oncorhynchus mykiss*), Westslope Cutthroat Trout (*Oncorhynchus clarki lewisi*), Wood River

Sculpin (*Cottus leiopomus*), Yellowstone Cutthroat Trout (*Oncorhynchus clarki bouvieri*)

5.1 Gray Wolf

The gray wolf inhabits the Smoky Mountain complex of the Sawtooth Mountains adjacent to the property. In 2007 an active wolf den was documented approximately ten miles north of the property. An additional wolf pack has been observed west of the property in the Barr Gulch drainage. This pack was observed on the first day of the Castle Rock Fire. The wolf is an endangered "experimental/non-essential population" that is protected under special regulations of the Endangered Species Act and is managed by the Idaho Department of Fish and Game. The property is located within the Gray Wolf USFWS Idaho Experimental Nonessential Population Zone. Although wolves could appear on the property, no observations of gray wolves have been made during field surveys. Due to the close proximity to human habitation they may not occur on site

5.2 Canada Lynx

Most recent sightings of Canada lynx occurred in 1997 near the Fishhook Creek and Alturas Lake Creek drainages. These observations are located well outside the general vicinity of the property. No observations of Canada lynx on the property have been made during field surveys.

5.3 Wolverine

Numerous recorded observations of wolverine have been made within fifty miles of the property. According to the Idaho Conservation Data Center, the most recent wolverine sightings in the area occurred in 1990 at Lake Creek and 1993 near the North Fork of the Big Wood River. The species is unlikely to occur on the property. No observations of wolverines on the property have been made.

5.4 Yellow-billed Cuckoo

Bird counts/surveys completed in 2004 and 2007 indicate that yellow-billed cuckoos do not exist on the property. Yellow-billed cuckoos require large expanses of willow habitat to survive, a habitat component that does not exist on the property.

5.5 Stonefly *(B. milami, M. tina)*

Benthic invertebrate surveys conducted in August of 2007 revealed that neither of these species occurs in the portion of Warm Springs Creek on the property.

5.6 Wood River Sculpin

The StreamNet data request during the summer of 2007 indicates that the Wood River sculpin, an Idaho Fish and Game "species of special concern" exists in

Warm Springs Creek. Stream surveys have not revealed the presence of this fish in the Warm Springs Ranch portion of Warm Springs Creek.

6.0 WATER RESOURCES

6.1 Waterways

Warm Springs Creek flows through the property and is a tributary to the Big Wood River. The Creek drains the Smoky Mountain range in the Northern Rocky Mountain physiographic province and is stabilized in its present channel with rock riprap, fill, and by residential development. The property also has a headgate diversion from Warm Springs Creek to an artificial ditch with fish ponds that flows through the restaurant area, a headgate diversion to an irrigation pond on the former golf course, a small drainage ditch at the base of Bald Mountain, and wetlands on the south end of the property.

6.2 Jurisdictional Waters and Wetlands

The property contains waters and wetlands that are jurisdictional to the U.S. Army Corps of Engineers and the Idaho Department of Water Resources. A jurisdictional determination was conducted by Sawtooth Environmental in 2004 and the delineations were mapped and provided to the U.S. Army Corps of Engineers. The process of identifying, delineating, and mapping jurisdictional wetlands on the property involved an on-the-ground survey over the complete parcel. The report "Jurisdictional Wetland Delineation – Warm Springs Ranch Development" has been submitted to the U.S. Army Corps of Engineers in Boise, Idaho and an approved jurisdictional determination has been received from the US Army Corps of Engineers.

[See FIGURE EV.5: Jurisdictional Waters of the United States, including wetlands Map for Warm Springs Ranch, in Warm Springs Ranch Resort Formal Application Submittal, Part 2: Exhibits Submittal, Section EV, Figure EV.5]

The U.S Army Corps of Engineers approved the Report and its delineation map for the Warm Springs Ranch property and provided a Jurisdictional Determination letter for the property on December 13, 2004 and a subsequent clarification letter dated September 30, 2005. Jurisdictional waters on the property include all areas below the ordinary high water mark associated with Warm Springs Creek totaling 5.95 acres, the artificial ditch/pond system adjacent to the restaurant and the irrigation pond on the golf course totaling 0.76 acres, and the shrub/forested wetlands in the south portion of the property totaling 2.19 acres.

[See ATTACHMENT 4 – U.S. Army Corps of Engineers, Jurisdictional Determination Letter, dated December 13, 2004]

[See ATTACHMENT 5 – U.S. Army Corps of Engineers, Clarification Letter to the Jurisdictional Determination, dated September 30, 2005]

Recent changes in U.S. Army Corps of Engineers guidance has eliminated jurisdiction of ditches in uplands that do not contain relatively permanent water. The artificial ditch and pond system on the property meet such upland criteria and should no longer be considered as jurisdictional "waters of the United States."

Jurisdictional waters areas on the property include the following habitat cover types.

- Riverine Upper Perennial Unconsolidated Bottom Permanently Flooded (R3UBH). This habitat cover type occupies the identified stream channel associated with Warm Springs Creek.
- Riverine Upper Perennial Unconsolidated Shoreline Seasonally Flooded (R3USC). This habitat cover type occupies the identified stream channel and floodway associated with Warm Springs Creek.
- Palustrine Forested Temporarily Flooded (PFOA). This habitat cover type occupies small pockets of undisturbed ground within the lower segment of the property where hydrologic inputs are sufficient enough to support forested wetland characteristics.
- Palustrine Scrub-Shrub Seasonally Flooded (PSSC). This habitat cover type occupies a portion of the southern end of the lower segment in areas where hydrologic inputs are sufficient enough to support shrub wetland characteristics.

The 2.2 acre wetland complex on the southern end of the property is high to moderate quality and performs important functional values which include improving water quality by filtering pollutants, sediment trapping, nutrient retention, groundwater recharge, and providing wildlife habitat.

6.3 Surface and Subsurface Characterizations

6.3.1 Warm Springs Creek

The length of Warm Springs Creek on the project site is described as two different stream reaches to facilitate this general discussion of the creek. These two reaches are defined as the Upstream Reach and Downstream Reach. The prominent rock outcrop across from the former tennis courts constitutes the approximate breakpoint between these two reaches. The existing Warm Springs Golf Course is situated along the Upstream Reach of the creek.

An aerial image taken in 1943 indicates that Warm Springs Creek meandered more than it does today. There were also some secondary stream channels associated with the main channel which is now absent. The image also shows a well established mature cottonwood forest lining the active floodplain that in places expanded more than 200 feet across the valley floor. The presence of this mature cottonwood forest is confirmed by the remnant cottonwood trees still standing on the former golf course today.

During the 1940s and 1950, the Upstream Reach was straightened. Additionally, topsoil from the valley bottom along the Downstream Reach was excavated and placed on the floodplain along the Upstream Reach to create the existing golf course. This straightening and narrowing of the Upstream Reach resulted in increasing the stream gradient and velocities, washing away the smaller gravel and leaving behind an armored bed of cobbles, and causing the streambed to erode vertically. While a rubble push-up dam in the mid-section of the project thwarted continued degradation of the channel, portions of the channel are incised and unable to access the historic floodplains. Riprap, composed of rock and broken concrete, has periodically been added to the streambanks along the Upstream Reach to contain the creek within its now unnaturally high, steep banks. Sequential pools, runs, glides and riffles have been replaced with a wide armored bed with riprap banks largely devoid of diverse and suitable aquatic habitat.

The topography along the Upstream Reach is dominated by a series of gravel terraces believed to be formed by the down-cutting of Warm Springs Creek through the glacially deposited valley fill gravels. The lowest terrace appears to coincide with the pre-1940s floodplain of Warm Springs Creek. Each subsequent terrace is typically 15 to 25 feet higher in elevation. The terrace surfaces are slightly undulating and gradually slope downward to the east, roughly parallel to the creek. Flood waters are generally contained within the deep, high banks along the Upstream Reach. The topography along the Downstream Reach is generally flatter across the valley floor. The stream along this reach is only moderately confined by the adjacent valley floor and contained within its bed by low earthen berms and riprap banks. During flood flows the low earthen berms overtop and inundate the valley floor immediately to the west. A historic stream meander east of the downstream end of the project site was cut off from the stream by the installation of a riprap levee.

A stream assessment of Warm Springs Creek was completed to provide information on channel geomorphology and in-stream habitat features. The assessment indicates that the sediment and river forms that support fish habitat are present to a limited degree at the upstream and downstream ends of the property, but are essentially absent throughout the middle portion of the site mostly due to stream channelization. The middle portion of the stream lacks

gravel bars and pool/riffle habitat which translates into poor aquatic habitat lacking the complexity fish species require.

Warm Springs Creek is degraded because:

- The Upstream Reach was straightened and steepened.
- The historic floodplains along the Upper Reach were elevated and the stream banks were lined with riprap to confine the stream within a narrow channel that is isolated from its active floodplain and riparian habitat.
- Stream discharges are generally contained to the eastern valley wall along the Downstream Reach.
- Sediment is generally being flushed through this length of the creek resulting in a wide armored bed devoid of complex in-stream habitat that would otherwise include pools, runs, glides, riffles and gravel bars.
- There is little left of the original riparian community that was comprised of cottonwoods and willows.

6.3.2 Subsurface Conditions

The subsurface conditions on the property were explored by excavating 42 test pits to depths of 6 to 13½ feet with a rubber-tired backhoe and drilling 13 borings to depths ranging from about 20½ feet to 51½ feet with a truck mounted drill-rig. Approximately ½ foot of topsoil (containing sod and roots) at the ground surface was found in all of the test pits. Some test pits had granular fills to the surface which is very similar to the native gravel soils in both content and consistency and was difficult to distinguish from the native soils. The granular fill generally consisted of brown to dark brown, fine to coarse gravel with fine to coarse sand, cobbles up to 10 inches in diameter, and varying amounts of silt. The fill ranged in consistency from loose to dense. Estimates are that fill in some areas extends to a depth of about 8½ feet in some locations. Beneath the fill, sandy silt, silty sand, and topsoil, and gravel with sand were encountered. The gravel contains up to about 20 percent silt in a few isolated areas, but typically contains less than 10 percent. The gravel also typically contains cobbles up to 8 to 10 inches in diameter. The consistency of the gravel encountered ranged from loose to very dense, but was medium dense to dense in the majority of the explorations. The gravel extended to the bottom of the explorations in all of the test pits and borings. Groundwater levels were found from 9 1/2 to 23 1/2 feet and are expected to fluctuate as a function of season, precipitation, irrigation, and other factors. Overall, it appears the property can be developed as planned, based on the geotechnical conditions encountered.

6.4 Water Rights

An analysis of the water rights for the property has been conducted by Brockway Engineering to determine the extent and ownership of all water rights. Based on this review, the current water rights indicate adequate flow and volume for irrigation to the former golf course and adequate flow-through of water for the diversions and fish ponds.

6.5 Floodplain

6.5.1 FEMA FIRM Floodplain

There currently exist two Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs) for Warm Springs Creek in the vicinity of Warm Springs Ranch. These are FIRM Panels 434 and 442 of 1950 for Unincorporated Areas of Blaine County, Idaho, Community Number 165167 dated March 17, 1997. The areas of flood concern along Warm Springs Creek in both Blaine County and the City of Ketchum are shown on these maps; even though the maps indicate the areas are "unincorporated areas." These maps show the maximum water elevation of the 100-year flood and the horizontal limits of the 100-year floodplain and floodway.

As indicated on the maps, the flood analysis of the Warm Springs Ranch site was based upon 11 creek and valley cross-sections. The accuracy of the underlying topographic survey is unknown. A casual review of these two FIRMs indicates obvious inaccuracies in these maps. The most obvious inaccuracy is that the mountainside across the creek from the former tennis courts is located within the 100-year floodplain; an unquestionable impossibility.

[See FIGURE EV.6: FEMA-FIRM 100 Year Floodplain Map for Warm Springs Ranch, in see Warm Springs Ranch Resort Formal Application Submittal, Part 2: Exhibits Submittal, Section EV, Figure EV.6]

6.5.2 Site-Specific Floodplain

GeoEngineers has developed a more accurate representation of the creek's existing floodplain using the Army Corps of Engineers HEC-RAS model. This model is based upon topographic data which was combined from two sources; the September 12, 2003 aerial-photo topography and detailed stream cross-sections surveyed in the field during the summer of 2002. A total of 35 stream cross-sections were surveyed, combined with the aerial topography and input into GeoEngineers' hydraulic model of the existing condition.

[See FIGURE EV.7: Site Specific 100 Year Floodplain Map for Warm Springs Ranch, in Warm Springs Ranch Resort Formal Application Submittal, Part 2: Exhibits Submittal, Section EV, Figure EV.7]

6.5.3 Post-fire Floodplain Conditions

The Castle Rock fire burned approximately one half of the 97-square mile Warm Springs Creek watershed in August and September, 2008. The Warm Springs Ranch Resort project is in the process of analyzing the potential flood affects this fire may have on the creek. Preliminary results from this study were presented to the City of Ketchum at an Emergency Management/Preparedness Meeting on April 15, 2008. This study is being refined in response to input gathered during this meeting and final results will be provided to the City and interested parties when they become available.

Our preliminary analyses suggest this fire will likely result in increased flood discharges over the next 5 to 10 years. Fortunately, the Warm Springs Ranch Resort project is in its initial design phase and can be designed to accommodate the anticipated flood discharges while enhancing the stream and floodplain habitat. The increased discharges also are likely to have an impact on the creek throughout the city and in the Board Ranch area west of the city. This is a community wide issue, and while the study of this event benefits the property, it is also a significant benefit to the whole community and should be recognized by the city in consideration of the PUD application.

[SEE FIGURE EV.9: Historic and Existing Floodplain Limits, in Update to Warm Springs Ranch Resort Formal Application Submittal, April 29, 2008, Section 7.3, Figure EV.9]

6.6 Cultural Resources

A cultural resources survey of the Warm Springs Ranch property was completed during the summer of 2004 and updated in 2007. The objectives of the survey were to document any prehistoric and historic cultural material on the site through the review of archival sources and on-site surface examination in accordance with 36 CFR 800. Nine cultural resources on Warm Springs Ranch were recorded during the survey. Though most of the buildings and structures on the property are less than 50 years old, they were still recorded as individual properties for the purposes of the survey. Of the nine cultural resources recorded during the survey, none are eligible for the National Register of Historic Places as they do not meet the criteria for eligibility.

[See ATTACHMENT 6 – Idaho State Historical Society – Section 106 Evaluation, Warm Springs Ranch, dated April 24, 2005]

7.0 IMPACT ANALYSIS

7.1 Summary of Impacts

Due to the existing habitat conditions, general lack of suitable native habitats, and the current urban nature of the surrounding area, impacts from the proposed development to vegetation, fish and wildlife habitats and populations, waterways and wetlands will be limited.

Direct impacts would result if development or trails occur in the Cottonwood Forest/wetland complex on the south portion of the property, within the riparian corridor along Warm Springs Creek, and in the Douglas fir forest. These potential impacts could be negated if the development or trails are designed, constructed and managed in consideration of the natural resource value and sensitivity of these areas.

No agricultural activities currently occur on the proposed project site. Dust, erosion, and surface and groundwater impacts and issues have been adequately addressed through the mitigation measures identified for the project.

Considering the overall project, it is our determination based on the information available, that if appropriate mitigation measures are employed, the development as proposed will not have significant direct or indirect impacts to habitat, wildlife and fisheries, waterways or wetlands, or cultural resources. Proposed actions, to restore and enhance the Warm Springs Creek corridor and the Cottonwood forest on the south portion of the property, would significantly improve habitat conditions benefiting fish and wildlife as well as adding important aesthetic values. Other proposed mitigation measures for weed and erosion control, and native plant revegetation, will provide positive resource benefits.

[See ATTACHMENT 7 – Idaho Department of Fish and Game Letter, Warm Springs Ranch Annexation and PUD Application, dated April 28, 2008, in Update to Warm Springs Ranch Resort Formal Application Submittal, April 29, 2008, Section 7.10.

7.2 Direct and Indirect Impacts

Direct impacts assessed represent the physical alteration (habitat degradation or loss) of biological resources that occur on site as a result of project implementation. Direct impacts are generally quantifiable losses. Direct impacts to specific plant or wildlife resources are evaluated and discussed when impacts to these resources could be considered significant or conflict with local, state or federal statutes, and regulations. The significance of direct impacts on individuals or populations of plant and animal species takes into account the number of individual plants or animals potentially affected, how common or rare the species is both on the project site and from a regional perspective, and the species sensitivity status. Indirect impacts are those reasonably foreseeable effects caused by project implementation on the remaining or adjacent biological resources.

7.3 Impact Analysis of the Proposed Project

The following analysis focuses on the potential effects of the proposed Warm Spring Ranch Resort development on vegetation, fish and wildlife, surface and ground water, dust, and erosion. Mitigation measures being applied will eliminate or reduce effects of the development.

7.4 Proposed Project Actions

7.4.1 Hotel, restaurant, town homes, and workforce housing on the north side of Warm Springs Creek

Ground disturbance and development is proposed to occur in the area of the former restaurant, tennis, golf facilities, fish ponds and artificial ditch. The native plant communities in this area have been extirpated and little remains of the original vegetation. Proposed development will include removal of the golden willows (*Salix alba vitellina)* along the artificial waterway; however this species is not native to Idaho. The artificial waterway and fish ponds proposed to be filled are not natural habitat. The existing building structures proposed to be demolished are not NHR-eligible. The proposed development abuts the stream and riparian corridor. This area will be protected with appropriate mitigation measures and structures will be setback 25 feet off the stream. The existing large cottonwood riparian vegetation along Warm Springs Creek will be preserved to the greatest extent possible. Many of the large conifer trees being removed will be salvaged and replanted on the property to help preserve the large tree component on the site.

7.4.2 Residential homes on the south side of Warm Springs Creek along the upper terraces/benches

Ground disturbance and development for residential homes is proposed to occur in areas of existing golf course turf along the upper terraces and benches. The native plant communities in this area have been extirpated and there will be no affect from development to habitat value. The Douglas fir inclusions on the terraced slopes will be preserved to the greatest extent possible. Re-seeding and re-vegetation along with protection of the Douglas fir inclusions on the terraced slopes will provide connectivity to the nearby forest stand and provide erosion control.

7.4.3 Estate lot on the west end of the property

Ground disturbance and development will occur in areas of existing golf course turf. The building envelope will be located in a previously disturbed area that provides little habitat value. The area surrounding the lot will be planted with native vegetation.

7.4.4 Estate lot on south end of the property

Ground disturbance and development for the estate lot will occur in an area were vegetation has been previously disturbed by past owners. The proposed building envelope does contain cottonwood vegetation, is adjacent to the broader

cottonwood riparian forest and wetland/complex, and is located in the floodplain. The building envelope will require a new driveway to the south portion of the property that will cross the cottonwood riparian forest. The building envelope will be setback 75 feet from the edge of wetlands and 50 feet from Warm Springs Creek to protect native vegetation, fish and wildlife habitat and water quality. The cottonwood riparian forest will be protected and enhanced to restore its function and values and only native landscaping will be allowed within the building envelope. The south portion of the property currently has low human use and no permanent human presence and is used by big game for cover and by songbirds for nesting and feeding. An increase in human presence as well as the indirect affects of lighting, pets, and urban wildlife will affect how wildlife uses the area. The area surrounding the estate lot will be re-planted with native vegetation to enhance the cottonwood riparian forest and reduce the overall effect of the estate lot.

7.4.5 Golf Course

The area proposed for golf course development generally overlays the footprint of the former golf course and the horse pasture located on the south portion of the property. These areas have limited native vegetation and the proposed project actions will not adversely affect fish and wildlife. Kentucky bluegrass golf turf on the former course provides some value to wildlife such as squirrels, mice, voles, and fox and serves as open space for wildlife. The golf course on the south portion of the property is located in the floodplain and will require floodplain mitigation. Construction on the south portion will impact some cottonwood riparian forest and human activity may affect natural patterns of use by wildlife through this area.

Areas of conifer forest, cottonwoods and native vegetation will be removed to construct new golf holes and cart paths. The landscape design for the course will maximize the use of native vegetation outside the turf lines. New tees, greens and fairways will be setback 75 feet from wetlands and 50 feet from Warm Springs Creek, and will be oriented to drain away from the creek for water quality protection. Golf course irrigation will be designed and managed for water conservation. The golf cart path system will be mostly located in areas that are previously disturbed but some cart paths will be located in the conifer forest and within the stream setback. Paths in these sensitive areas will be designed, constructed, and managed to minimize disturbance. No significant direct impacts will occur from golf course construction although temporary impacts from ground disturbance, noise, and removal of vegetation will occur. All areas disturbed by construction will be revegetated in appropriate vegetation according to the landscape and open space plans. Two open water ponds will provide storage for irrigation water to the golf course and residential areas. The ponds will be a natural design element with a 25 foot vegetated buffer/setback for water quality protection and habitat.

[See Figure S.15 - Conceptual Golf Routing Plan in Update to Warm Springs Ranch Resort Formal Application Submittal, April 29, Section 7.4, Figure S.15]

[See Figure S.17 – Conceptual Tree Conservation Plan in Update to Warm Springs Ranch Resort Formal Application Submittal, April 29, Section 7.4, Figure S.17]

7.4.6 Trail system along Warm Springs Creek

A foot-trail for passive recreation will be constructed of pavers and boardwalk along the south side of Warm Springs Creek. The trail will meander in and out of the riparian setback and may be directly adjacent to the Creek. No specific plan for the trail has yet been developed. Location of the trail within the riparian setback may have a direct impact on riparian vegetation and habitat functions and values. All areas disturbed by construction will be revegetated in

appropriate vegetation according to the landscape plan and direct impacts will be minimal. An increase in human use along the trail may affect how animals use the area, but animals will generally be more active at dawn and dusk, and the evening when human use is low. The trail should be located to avoid existing native trees and shrubs to the greatest extent possible.

[See Figure S.14 - Conceptual Trails Plan in Update to Warm Springs Ranch Resort Formal Application Submittal, April 29, Section 7.4, Figure S.14)

7.4.7 Trail system along the Mountain Side

An unimproved trail will be constructed in the Douglas fir conifer forest to provide access to the ridgeline for observation and access to federal lands. The trail will eventually connect to the Bald Mountain Trail connector between River Run and Warm Springs Creek. The design for the trail will follow natural contours and limit the removal of native vegetation to minimize erosion. If the trails are not properly designed, constructed and managed, the trail system could reduce the wildlife functions and values this habitat provides.

[See Figure S.14 - Conceptual Trails Plan in Update to Warm Springs Ranch Resort Formal Application Submittal, April 29, Section 7.4, Figure S.14)

7.4.8 Bridge Crossings of Warm Springs Creek

Two new bridge crossings, one vehicular and one pedestrian, will be constructed across Warm Springs Creek. The bridge abutments will be outside the ordinary high water mark, and designed to convey the 100 year flood with no net rise. Bridge construction will require a Section 404 permit from the Army Corps of Engineers, Stream Alteration Permit from Idaho Department of Water Resources, Section 401 Water Quality Certification from the Idaho Department of Environmental Quality, and City of Ketchum Waterways Design Review. Construction activities will be scheduled to avoid fish spawning, rearing and migration periods as regulated by Idaho Department of Fish and Game. All areas disturbed during construction will be revegetated according to permit requirements and the permit mitigation plan.

[See Figure E.2: - Roads and Grading in Update to Warm Springs Ranch Resort Formal Application Submittal, April 29, 2008, Section 7.2, Figure E.2]

7.4.9 Roads

Roadways with 20 feet of paved surface within a 46 foot right of way will be constructed for access to the residential home sites and estate lots. The roadways will mostly follow the natural contour of the land and will not require significant cut and fill action. Runoff from the roadways will be collected in barrow ditches or underground dry wells throughout the project, mitigating any impact to surface water.

[See Figure E.2: - Roads and Grading in Update to Warm Springs Ranch Resort Formal Application Submittal, April 29, 2008, Section 7.2, Figure E.2]

[See Figure E.6 - Drainage Plan in Update to Warm Springs Ranch Resort Formal Application Submittal, April 29, 2008, Section 7.2, Figure E.6]

7.4.10 Utilities

Most all utilities will be located within roadways easements. Two sewer crossings are proposed to be trenched under Warm Springs Creek that will require a Section 404 permit from the Army Corps of Engineers, Stream Alteration Permit from Idaho Department of Water Resources, Section 401 Water Quality Certification from the Idaho Department of Environmental Quality, and City of Ketchum Waterways Design Review. Construction activities will be scheduled to avoid fish spawning, rearing and migration periods as regulated by Idaho Department of Fish and Game. All areas disturbed during construction will be revegetated according to permit requirements and the permit mitigation plan.

[See Figure E.3 - Utility Plans in Update to Warm Springs Ranch Resort Formal Application Submittal, April 29, 2008, Section 7.2, Figure E.3]

7.4.11 Stream and Riparian Enhancement Work

Restoration and enhancement options for Warm Springs Creek and the riparian corridor are being proposed. These actions will result in temporary impacts from ground disturbance for bed and bank work, short term dewatering of stream reaches, and the planting of native vegetation within the restoration and enhancement area. A mitigation plan to address these activities will be prepared and reviewed by appropriate state and Federal agencies and local authorities. Restoration and enhancement will result in positive benefits to vegetation, water quality, and fish and wildlife.

[See Figure EV.11: Proposed Stream Restoration, in Update to Warm Springs Ranch Resort Formal Application Submittal, April 29, 2008, Section 7.3, Figure EV.11]

7.5 Effects on Special-Status Species

Special status species includes species listed as endangered, threatened, and candidate species pursuant to the Endangered Species Act of 1973 or species of greatest conservation need (species of special concern) as listed by the Idaho Conservation Data Center. Although no special status species occur on the property, several may exist "in the vicinity." The proposed project will not have an effect on special-status species and resource improvement efforts may provide improved habitat for these species. Fish passage and connectivity to populations up and down stream may result from stream and wetland improvements, resulting in positive effects.

7.6 Effects on Big Game

The project site does not contain elk or Mule Deer Winter Range and is not within a designated deer and elk migration corridor. The Warm Springs Ranch Resort project will not have an effect on big game.

7.7 Effects on Fisheries

Rainbow trout have been observed in Warm Springs Creek throughout the ranch property. The abundance of trout varies throughout the stream reach. Trout likely do not spawn in most of the project area due to a lack of spawning habitat. Other fish that may exist within the project site include brook trout *(Salvelinus fontinalis)* and mountain whitefish *(Prosopium williamsoni).* Wood River sculpin, a resident endemic fish and "sensitive" species occurs in Warm Springs Creek but was not confirmed on site. The project will not have an adverse effect on fisheries. The restoration of Warms Springs Creek and its floodplain will have positive effects for fisheries and provide future habitat and connectivity to populations up and downstream of the proposed project.

7.8 Effects of Stream and Riparian Enhancement

The Warm Springs Ranch contains waters and wetlands that are jurisdictional to the U.S. Army Corps of Engineers and the Idaho Department of Water Resources. Warm Springs Creek is today degraded because much of the stream channel has been straightened and its banks lined with rip-rap that result in adverse habitat, hydraulic, and sediment transport conditions.

Channel and floodplain reconstruction will be sequenced in a manner that minimizes the extent and duration of potential disturbance to the natural resources. Active stream construction zones will be minimized and isolated. Temporary diversions will bypass active stream construction zones. Channel construction will likely proceed in a step-wise fashion proceeding in an upstream direction. Flow returned to the reconstructed stream lengths will be controlled to enable testing and refinement of the new channel before the enhanced stream length stream is fully activated.

Significant areas within the riparian corridor are altered and proposed to be restored and/or enhanced to increase their function and value. Any proposed habitat improvement would significantly improve habitat conditions for fish and wildlife while also improving surface and groundwater function and values.

All in-stream and riparian work will meet federal, state, and city permitting requirements and will be carried out in accordance with appropriate mitigation measures as proposed. Riparian areas will be planted in native vegetation and hydrology restored to promote natural re-generation. The wetlands on site will be protected. The project will not have an adverse effect on waterways and

wetlands. The Warms Springs Creek restoration would have positive effects for fisheries and provide future habitat and connectivity to populations up and downstream of the proposed project. A detailed stream, riparian corridor, wetlands, and floodplain design and plan will be presented to the City at Waterways Design Review.

[See Figure EV.11: Proposed Stream Restoration, in Update to Warm Springs Ranch Resort Formal Application Submittal, April 29, 2008, Section 7.3, Figure EV.11]

[See Figure S.16 - Conceptual Open Space Plan, in Update to Warm Springs Ranch Resort Formal Application Submittal, April 29, Section 7.4, Figure S.16]

7.9 Effects of Flood Mitigation Work

The conceptual enhancement design proposes to return the stream and floodplains to near-historic conditions in order to enhance aquatic and riparian habitat while safely managing flood discharges. This requires undoing over 60 years of inappropriate channel and floodplain modifications. This will involve in-stream channel work, ground disturbance in the floodplains, wetland disturbance and the loss of some riparian vegetation. These disturbances will be temporary. The potential adverse impacts resulting from these disturbances will be short-term and will be significantly offset by the long-term habitat and flood management benefits.

Existing jurisdictional wetlands are limited to isolated areas near the downstream end of the site. Portions of these wetlands will be excavated in order to regain hydraulic connectivity between the stream and floodplain and to appropriately manage flooding. These impacts will be offset by reestablishing wetlands in these exact locations, increasing hydraulic connectivity to the restored wetlands, enhancing wetland complexity, and by reestablishing the historic cottonwood/willow corridor along the majority of the project reach. Disturbances to the riparian vegetation will be mitigated by increasing the amount, extent and diversity of the existing riparian areas.

All proposed buildings, roads and bridges will be designed above and beyond the regulatory flooding requirements to ensure public safety. The proposed infrastructure and stream and floodplain improvements will not adversely impact flood conditions on any of the neighboring parcels. Where possible, the proposed enhancements will reduce potential flooding on the neighboring parcels.

To achieve the habitat and flood management benefits, portions of the proposed golf course will be designed to accommodate flooding. Flooding depths and velocities over the golf course will be minimal and non-erosive, and flooding will

occur only during infrequent flood events. During frequent rainfall and snowmelt events, runoff from the golf course will be directed to appropriate and hydraulically disconnected retention areas. An environmentally sensitive golf course maintenance plan will appropriately manage the course's irrigation, fertilization and pesticides to prevent adverse impacts to the water quality of Warm Springs Creek.

[See FIGURE EV.10: Existing and Proposed Floodplain Limits, in Update to Warm Springs Ranch Resort Formal Application Submittal, April 29, 2008, Section 7.3, Figure EV.10]

7.10 Indirect Effects

The following discussion identifies expected types of secondary impacts and their relative magnitude. The project's mitigation measures as proposed will eliminate and reduce these indirect impacts.

7.10.1 Increased Lighting and Glare

The proposed WSRR project will increase artificial light and glare over current levels on the property. Artificial night lighting can disturb wildlife and have a significant affect on how animals use areas, including animal displacement and change in patterns of use. Wildlife are generally more active during dusk, dawn and evening hours, which is also when outdoor human use is less active. The conceptual lighting plan for the WSRR may affect wildlife use due to the extent of lighting across many locations on the project site. The lighting will be designed to preserve the dark, nighttime sky in compliance with the City of Ketchum dark sky ordinance. Exterior night lighting will be kept to a minimum except as required for safety, address identification, and accent lighting on architectural elements in high use areas. Mitigation measures will include recessed, shielded and downward facing light fixtures. In addition, lighting in riparian areas, wetlands, wildlife corridors, and remote areas will be eliminated or kept to an absolute minimum. Specific lighting and mitigation measures for wildlife protection in sensitive areas will be specifically addressed at design review.

[See Figure S.18 – Conceptual Lighting Plan, in Update to Warm Springs Ranch Resort Formal Application Submittal, April 29, Section 7.4, Figure S.18]

7.10.2 Landscape Irrigation and Storm Water Runoff

Excessive irrigation of landscape areas, especially when combined with the use of chemicals, can lead to runoff that contains pesticides, herbicides, nitrates, and other contaminants. Any runoff that flows into the waterways and wetlands on the project site that contains high levels of nutrients, particularly fertilizers, can result in eutrophication and adversely affect aquatic resources. In addition, paved surfaces can contribute pollutants to runoff into the streams during storm

events. Superior design features, mitigation measures as proposed, the use of native landscape materials, and stream and wetland buffers will be incorporated into the project design to eliminate or mitigate any effects.

7.10.3 Increase in Non-Native Plants and Wildlife Species

The project site currently contains noxious weeds. After project completion, the number of non-native plant and noxious weed species could increase and displace native species. The Landscape Plan and the Weed Control Plan will control noxious weed species. Wildlife species like house sparrows, starlings, skunks, red fox, raccoons, opossums, mice, etc., are attracted to urban settings and will increase with development. An increase in urban wildlife can have a negative impact on native wildlife populations but the property is not an isolated area with high quality habitat for wildlife, and therefore these impacts are not considered significant.

7.10.4 Increased Human and Domestic Animal Presence

The project will increase the number of people and pets using the project site and surrounding public lands. There already exists a high degree of human and domestic pet use in the area, but the project will create permanent human presence and higher use in an area that is currently open space and lacks housing development. Impacts by human and domestic animal presence on trails can be mitigated by locating trails away from sensitive lands, restricting use, proper trail maintenance and signage.

8.0 PROJECT MITIGATION MEASURES

8.1 Design Elements

8.1.1 Conservation Values

The vision for the project recognizes the environmental and recreational opportunities the development can provide the community and has identified specific conservation values and uses to be protected and improved. Important environmental design elements and considerations for the project include: renewable energy heating and cooling systems, alternative energy vehicles, passive solar design, water conservation measures, and the use of sustainable buildings materials in construction. Important conservation values and uses include:

- Protection and management of the conifer forest on the north slope of Bald Mountain.
- Habitat improvements to Warm Springs Creek and its riparian corridor.
- Protection of sensitive wetlands and the cottonwood forest on the south end of the property.
- Providing public access to Warm Springs Creek along a dedicated fisherman's easement.

- Construction of public trails and access to BLM and Forest Service lands.
- Providing opportunities for wildlife-dependent recreation including wildlife viewing, wildlife education, and wildlife photography.
- Providing interpretive materials that describe the history of the original Warm Springs Ranch.

8.1.2 Open Space

Approximately 86% of the total 77 acre WSRR property will remain as active and passive open space.

8.1.3 Stream Buffers

Building structures on the north side of Warm Springs Creek will be setback a minimum of twenty-five (25) feet from the mean high water mark and residential structures on the south side setback a minimum of fifty (50) feet. The proposed stream and riparian corridor restoration will significantly enhance the riparian and upland native plant communities within the setbacks for the benefit of water quality protection and wildlife and fisheries habitat. Trails for fishing access and passive recreation uses will be located within the setbacks. Waterways on the WSRR that are jurisdictional to the Army Corps of Engineers (ACOE) will be protected and managed in accordance with federal and state regulations and permitting requirements.

8.1.4 Wetland Buffers

Building structures will be setback a minimum seventy-five (75) feet from the edge of jurisdictional wetlands. Existing jurisdictional wetlands are limited to isolated areas near the downstream end of the site. Portions of these wetlands will be excavated in order to regain hydraulic connectivity between the stream and floodplain and to appropriately manage flooding. These impacts will be offset by reestablishing wetlands in these exact locations, increasing hydraulic connectivity to the restored wetlands, enhancing wetland complexity, and by reestablishing the historic cottonwood/willow corridor along the majority of the project reach. Jurisdictional wetlands will be managed in accordance with federal regulations and permitting requirements.

8.1.5 Landscaping

Existing historic landscape features and vegetative patterns will provide the model for landscape improvements. The landscape vision is to provide a sustainable design that preserves and enhances the native landscape and provides a sense of tradition and outdoor stewardship for future generations to enjoy. Proposed landscape areas will include: the Golf Course – Event Zone, Native (riparian, alpine forest, upland and transitional) Zone, and Private Enhanced Zone.

- The Golf Course - Event Zone will be primarily cultivated grasses such as Bent Kentucky, blue fescue, and rye grass combined with native and native compatible plant materials.

- The Native Zones will be primarily native species by sub zone:
    - Riparian: Trees - Black Cottonwood, Aspen Mountain Alder; Shrubs - Red Osier Dogwood, Willow Species, Current, Wild Rose, Choke Cherry Elder Berry and Gooseberry; Herbs - Rush and Sedge.
    - Alpine Forest: Trees - Douglas Fir and Aspen; Shrubs - Snowberry, Golden Rod, Buffalo Berry, Service Berry, Oregon Grape, Rocky Mountain Maple, Ninebark, Choke Cherry, Sagebrush; Forbes-Wild Geranium, Meadow Rue, Columbine, Penstemon, Aster, and Flea Banes; Grasses - Pine Grass, Bottle Brush Squirrel Tail, Sandberg's Bluegrass, Idaho Fescue, Smooth Grass Brome, Bluebunch Wheat Grass, Needles, Thread Grass.
    - Upland (Sage and Grassland): Shrubs - Big Sagebrush, Rubber Rabbit Brush, Green Rabbit Brush, Grasses - Smooth Brome, Great Basin Wildrye, Wheat Grass; Forbes - Goldenrod, Western Yarrow, Spotted Knapweed, Aster, Scarlet Gilia, Penstemon.
    - Transitional Zone: This area includes all plants from the native zones above.

- The Private - Enhanced Zone will include plants from all zones combined with cultivated ornamental plants.

The irrigation systems proposed for all landscape zones will be water efficient, in-ground, rotor and drip irrigation technology. Monitoring technology will be used to regulate irrigation rates to conserve water use.

[See Figure S.13 - Conceptual Landscape Plan, in Update to Warm Springs Ranch Resort Formal Application Submittal April 29, Section 7.4, Figure S.13]

[See Figure S.16 - Conceptual Open Space Plan, in Update to Warm Springs Ranch Resort Formal Application Submittal, April 29, Section 7.4, Figure S.16]

8.1.6 Lighting

The lighting at WSRR will be designed to preserve the dark, nighttime sky in compliance with the City of Ketchum dark sky ordinance. Exterior night lighting will be kept to a minimum except as required for safety, address identification, and accent lighting on architectural elements in high use areas. Mitigation measures will include recessed, shielded and downward facing light fixtures. In addition, lighting in riparian areas, wetlands, wildlife corridors, and remote

areas will be eliminated or kept to an absolute minimum. Specific lighting and mitigation measures for wildlife protection in sensitive areas will be specifically addressed at design review.

8.2 Natural Resource Improvement Projects

8.2.1 Improvements to Warm Springs Creek

The length of Warm Springs Creek associated with the Warm Springs Ranch Resort has undergone a series of physical alterations over a long history of land use. These alterations have straightened, deepened, dammed, confined and reinforced the natural stream channel to the point where the stream functions more like a flume than a natural stream. In addition to having significantly degraded in-stream and riparian habitat, this unnatural condition is self–destructive in that its increased velocities require frequent channel maintenance in the form of riprap bank protection.

The WSRR team is working to identify the stream and riparian enhancement options available to restore and enhance the stream and riparian corridor to a more natural condition. Depending upon the severity of the existing stream condition, these enhancements will likely range from small-scale revegetation efforts to larger-scale in-stream and floodplain improvements. Some of the options being discussed include:

- Widening and lowering the stream's floodplains to provide safer flood conveyance, increased riparian habitat and greater habitat connectivity between the stream and floodplains.
- Lowering and decreasing the slope of the stream banks to provide greater habitat connectivity between the stream and floodplains.
- Sculpting pools, riffles, runs and glides and incorporating in-stream wood and boulder structures to direct flows and sediment more naturally.
- Maintaining the native riparian vegetation to the greatest extent possible.
- Utilizing native vegetation for long-term stream bank stability and habitat diversification.

Such improvements would enhance the function and values of the aquatic and riparian habitat along the stream corridor itself and the larger upland habitats. These improvements will also enhance and expand the aesthetic, recreational and educational value of the stream corridor for the greater Wood River community. Some of the public benefits from the stream and riparian corridor enhancement work include:

- Enhancing and increasing in-stream fish habitat to accommodate the full range of fish life-cycles and requirements, including spawning, rearing, holding, feeding, refuge and passage.

- Enhancing and expanding habitat for a wide range of indigenous flora and fauna.
- Replacing steep, unstable, unsafe and unsightly riprap banks with lower, gently-sloping, vegetated banks and riparian areas.
- Replacing the vegetative mono-culture of the golf course with a diverse mosaic of natural vegetation and habitats.
- Improving fishing in the enhanced stream reaches as well as in the adjacent reaches of Warm Springs Creek and Big Wood River.
- Enhancing educational and recreational opportunities with more wildlife available for viewing.

[See Figure EV.11: Proposed Stream Restoration, in Update to Warm Springs Ranch Resort Formal Application Submittal, April 29, 2008, Section 7.3, Figure EV.11]

[See Figure S.16 - Conceptual Open Space Plan, in Update to Warm Springs Ranch Resort Formal Application Submittal, April 29, Section 7.4, Figure S.16]

8.2.2 Cottonwood Forest

Most of the cottonwood forest habitat on the property has been significantly degraded except for the stand that occurs on the southern portion of property. Mature cottonwoods exist in other areas of the property but provide little overall value and function except where they occur with a multi-layered understory. Natural cottonwood regeneration is limited throughout the property. Multi-layered stands of cottonwood forests are important for fish and wildlife habitat, erosion and flood control, bank stabilization, water quality and aesthetic values.

Restoration efforts will be directed towards protecting and enhancing the existing functioning stand in the southern part of the property, creating new stands and creating an environment for natural regeneration throughout the property. These efforts will be accomplished by restoring the hydrology, planting riparian vegetation, and limiting human use and development to enhance functions and values while creating substrates for natural regeneration.

[See Figure S.16 - Conceptual Open Space Plan, in Update to Warm Springs Ranch Resort Formal Application Submittal, April 29, Section 7.4, Figure S.16]

8.2.3 Conifer Forest

The health and management of the conifer forest on the property and adjacent BLM and Forest lands is important to reduce the risk of wildfire and as wildlife habitat. In 2007, Warm Springs Ranch Resort cooperated with the Ketchum Ranger District to complete the Warm Springs Fuels Reduction Project as a community wildfire protection measure. Douglas-fir timber harvested during

the fuels reduction program will be used as a design element in the project. The Warm Springs Ranch Resort will continue to manage the health of the conifer forest on its property to reduce the risk of wildfire and disease.

8.2.4 Weed Management

Noxious weeds are present across the property. The presence of weeds reduces the quality of habitat for wildlife and diminishes the aesthetic value of the property. As part of the overall project, a noxious weed control program will be implemented during both the pre and post development phases. The goal of the program is to eradicate noxious plants on the property and work in cooperation with adjacent landowners to curtail the spread of these plants.

8.2.5 Cultural Heritage

All existing structures on the property will be removed as part of the development project. Even though the historic sites and structures are technically not NRHP-eligible, the property played an important role in the area's history. The historic development of the Warm Springs Ranch reflects three important phases of land use in the area: mining, ranching, and recreation. Providing public interpretation of this history is important to help mitigate changes to the site, introduce newcomers to the area's cultural heritage, and to document the strong heritage of the Simpson family ownership.

The history and former physical layout of the Warm Springs Ranch has been compiled as part of the Warm Springs Cultural Resource Survey. Archival black-and-white photos were taken, historical information and photos gathered, and a short historical narrative of the ranch history compiled. Copies of this information were provided to the Idaho State Historic Preservation Office in Boise. The information gathered during the survey will also be interpreted by the following:

- Writing a detailed Historic Context Narrative of the Warm Springs Ranch property, including copies of related historic photographs. This detailed Context Narrative will provide the basis for sharing information about the property's unique history. A copy of the Context Narrative will be provided to the Regional History Department of the Ketchum Community Library.
- Creating an interpretive brochure with map and historic photographs of the Warm Springs Ranch will be made available to WSRR guests. The restaurant will also exhibit larger copies of historic photographs of Warm Spring Ranch on its interior walls.

8.3 Fish and Wildlife Management

8.3.1 Fishing

Access along Warm Springs Creek will be provided by a dedicated ten foot fisherman's easement which will be open to the public for fishing in accordance with Idaho Department of Fish and Game regulations. Fishing within irrigation ponds and other artificial waterways on the Warm Springs Ranch Resort will not be open to the public.

8.3.2 Wildlife Human Interactions

The property will be managed to minimize the presence of nuisance wildlife and the probability for dangerous wildlife/human interactions to the greatest extent possible. The Warm Springs Ranch Resort will provide guidelines and educational material for its residents and guests on local wildlife, wildlife attractants, and cause and effect of possible interactions. The information disseminated will be coordinated with the Idaho Department of Fish and Game. Any form of wildlife harassment within the property by residents, guests or the public is prohibited. To help reduce wildlife interactions and attractions, all garbage containers on the property will be bear-proofed.

8.3.3 Wildlife Feeding

Feeding big game animals and predatory wildlife within the property is prohibited and will be enforced.

8.3.4 Depredations and Nuisance Wildlife

Big game and other wildlife depredation on native and non-native vegetation are anticipated on the property. Responsibility for controlling wildlife depredations and nuisance wildlife belongs to the Warm Springs Ranch Resort, and any actions taken shall be those prescribed or approved by the Idaho Department of Fish and Game. It will be the responsibility of the Warm Springs Ranch Resort and its guests to properly protect refuse and other possible food sources from depredation.

8.3.5 Fencing

Fencing on the property will be kept to a minimum. Both temporary and permanent fencing necessary to protect sensitive areas and provide safety will be allowed. Fencing of the building envelopes on the estate lots will be allowed. These fences will be open rail and in character with the area, and will meet Idaho Department of Fish and Game standards as wildlife friendly. No fencing will be allowed around the Villas.

8.3.6 Pets

All pets on the property shall be managed in accordance with the Ketchum City Code Chapter 6.04 and shall be leashed at all times and not allowed to run at large.

9.0 ENVIRONMENTAL PERMITS AND REVIEWS

9.1 Floodplain CLOMR and LOMR – FEMA

Proposed stream enhancements will include re-grading the stream corridors to safely manage and convey naturally occurring floods. The proposed improvements will maintain or lower the 100-year base flood elevations on the neighboring parcels and is not anticipated to result in any adverse flood-related impacts on-site or off. Permits to modify the floodplains will be secured from the Federal Emergency Management Agency (FEMA) and the City of Ketchum using the following three-step process.

First, a Conditional Letter of Map Revision (CLOMR) package will be submitted to the City and then FEMA for approval. This package describes the existing and proposed floodplain conditions and is supported by computer flood models. FEMA's approval occurs with the issuance of a CLOMR that allows the construction of the proposed floodplain improvements. Second, the proposed stream and floodplain enhancements will be constructed as designed. It is important to construct the floodplain improvements as intended to ensure the resulting floodplains and base flood elevations (BFEs) are below and within the proposed limits. Lastly, a Letter of Map Revision (LOMR) package will be submitted to the City and FEMA for approval. This package describes the proposed and as-built floodplain conditions and is supported by the respective computer flood models. After approval, FEMA generates new Flood Insurance Rate Maps (FIRMs) and modifies the Flood Insurance Study (FIS) reflecting the changes from the approved LOMR.

9.2 404 Permit – US Army Corps of Engineers

9.2.1 Stream and Riparian Enhancements

Improvements to Warm Springs Creek and its riparian corridor are planned and will require work in areas jurisdictional to federal, state, and the City of Ketchum. These project actions will require a Section 404 permit from the Army Corps of Engineers, Stream Alteration Permit from Idaho Department of Water Resources, Section 401 Water Quality Certification from the Idaho Department of Environmental Quality, and City of Ketchum Waterways Design Review.

9.2.2 Road and Bridge Crossings

The project as planned will require new bridge crossings on Warm Springs Creek. Bridge construction will require a Section 404 permit from the Army Corps of Engineers, Stream Alteration Permit from Idaho Department of Water Resources, Section 401 Water Quality Certification from the Idaho Department of Environmental Quality, and City of Ketchum Waterways Design Review. Construction activities will be scheduled to avoid fish spawning, rearing and migration periods as regulated by Idaho Department of Fish and Game. All areas disturbed during construction will be revegetated according to permit requirements and the permit mitigation plan.

9.2.3 Utility Crossings

The project will install sewer, water, cable, electric, and phone utilities. All utility lines proposed will be constructed underground and some will require the crossing of jurisdictional waters. Two sewer and water line crossings of Warm Springs Creek are anticipated for the project and will be trenched under the stream bed of the creek. New water diversion structures to deliver irrigation and aesthetic water rights may also occur. These project actions may require a Section 404 permit from the Army Corps of Engineers, Stream Alteration Permit from Idaho Department of Water Resources, Section 401 Water Quality Certification from the Idaho Department of Environmental Quality, and City of Ketchum Waterways Design Review. Construction activities will be scheduled to avoid fish spawning, rearing and migration periods as regulated by Idaho Department of Fish and Game. All areas disturbed during construction will be revegetated according to permit requirements and the permit mitigation plan.

9.3 SWPPP – U.S. Environmental Protection Agency

Prior to site construction all applicable requirements of the NPDES Program including Best Management Practices (BMPs) that are appropriate and applicable will be installed. The preparation of a Storm Water Management Pollution Prevention Plan (SWPPPP) will also be completed.

9.4 Additional Project Conditions and Monitoring

Additional conditions, protections and monitoring requirements for project development will include the following:

- All necessary permits, agreements, letters of exemption from the Army Corps of Engineers, Environmental Protection Agency, Idaho Department of Environmental Quality, and/or Idaho Department of Fish and Game, for project-related development will be obtained prior to site construction in jurisdictional areas.
- A water quality monitoring plan will be developed in coordination with the Idaho Department of Environmental Quality to monitor pre-construction, construction, and post-construction water quality in Warm Springs Creek. The purpose of the monitoring program is to assess the effectiveness of the stormwater management plan, stream and riparian corridor restoration work, and golf course operations.
- A Noxious Weed Control Plan will be prepared prior to construction to assure weeds are controlled and the potential for spreading is eliminated.
- A qualified biologist will review all re-vegetation plans and restoration efforts.
- A Mitigation Plan will be prepared, as part of the U.S. Army Corps of Engineers Section 404 Permit process, to insure that all project goals and objectives of the permits are met.

- Riparian area re-vegetation efforts will involve analysis of all site conditions and include the details and procedures required to prepare the restoration site for planting (i.e., grading, soils preparation, soils stockpiling soils amendments, site maintenance, weed control, etc.), including the need for a supplemental irrigation system.
- Restoration of riparian habitats will use plant species native to the Warm Springs Creek drainage.
- Re-vegetated sites will be monitored to assure that objectives are met.
- Specific performance goals for restored habitat will be defined by qualitative and quantitative characteristics using similar habitats in a nearby reference reach.
- A contingency plan and appropriate remedial measures will be outlined in the re-vegetation plan.
- To minimize the wildfire hazard a Fire Wise Plan will be prepared.
- All lighting along the perimeter of natural areas shall be downcast luminaries with light patterns directed away from natural areas.
- A plan will be developed to assure that any runoff that flows into the waterways and wetlands on the project site will not result in adverse affects to the aquatic resource.

10.0 FIGURES

FIGURE EV.1: Vicinity Map for Warm Springs Ranch (See Warm Springs Ranch Resort Formal Application Submittal, Part 2: Exhibits Submittal, Section EV, Figure EV.1)

FIGURE EV.2: Existing Conditions Map for Warm Springs Ranch (see Warm Springs Ranch Resort Formal Application Submittal, Part 2: Exhibits Submittal, Section EV, Figure EV.2)

FIGURE EV.3: Site - 2003 Aerial Photo of Warm Springs Ranch (see Warm Springs Ranch Resort Formal Application Submittal, Part 2: Exhibits Submittal, Section EV, Figure EV.3)

FIGURE EV.4: Existing Land Cover and Vegetation for Warm Springs Ranch (see Warm Springs Ranch Resort Formal Application Submittal, Part 2: Exhibits Submittal, Section EV, Figure EV.4)

FIGURE EV.5: Jurisdictional Waters of the United States, including wetlands Map for Warm Springs Ranch (see Warm Springs Ranch Resort Formal Application Submittal, Part 2: Exhibits Submittal, Section EV, Figure EV.5)

FIGURE EV.6: FEMA-Firm 100 Year Floodplain Map for Warm Springs Ranch (see Warm Springs Ranch Resort Formal Application Submittal, Part 2: Exhibits Submittal, Section EV, Figure EV.6)

FIGURE EV.7: Site Specific 100 Year Floodplain Map for Warm Springs Ranch (see Warm Springs Ranch Resort Formal Application Submittal, Part 2: Exhibits Submittal, Section EV, Figure EV.7)

FIGURE EV.8: Important Habitat Map for Warm Springs Ranch – Douglas Fir Forest and Cottonwood Riparian and Wetland Complex (see Warm Springs Ranch Resort Formal Application Submittal, Part 2: Exhibits Submittal, Section EV, Figure EV.8)

FIGURE EV.9: Historic and Existing Floodplain Limits (see Update to Warm Springs Ranch Resort Formal Application Submittal, April 29, 2008, Section 7.3, Figure EV.9)

FIGURE EV.10: Existing and Proposed Floodplain Limits (see Update to Warm Springs Ranch Resort Formal Application Submittal, April 29, 2008, Section 7.3, Figure EV.10)

FIGURE EV.11: Proposed Stream Restoration (see Update to Warm Springs Ranch Resort Formal Application Submittal, April 29, 2008, Section 7.3, Figure EV.11)

11.0 ATTACHMENTS

ATTACHMENT 1 – U.S. Fish and Wildlife Service Species List for Warm Springs Ranch, dated July 19, 2007.

ATTACHMENT 2 – The Idaho Conservation Data Center Database Screen for Warm Springs Ranch, dated July 13, 2007.

ATTACHMENT 3 – The Idaho Department of Fish and Wildlife StreamNet Report for Warm Springs Ranch, dated July, 13, 2007.

ATTACHMENT 4 – U.S. Army Corps of Engineers, Jurisdictional Determination Letter, dated December 13, 2004.

ATTACHMENT 5 – U.S. Army Corps of Engineers, Clarification Letter to Jurisdictional Determination, dated September 30, 2005

ATTACHMENT 6 – Idaho State Historical Society – Section 106 Evaluation, Warm Springs Ranch, dated April 24, 2005

ATTACHMENT 7 – Idaho Department of Fish and Game Letter, Warm Springs Ranch Annexation and PUD Application, dated April 28, 2008, in Update to Warm Springs Ranch Resort Formal Application Submittal, April 29, 2008, Section 7.10.

12.0 PROJECT PLANS

E.1: - Large Block Plat (see Warm Springs Ranch Resort Formal Application Submittal, Part 2: Exhibits Submittal, Section E, Figure E.1)

E.2: - Roads and Grading (see Update to Warm Springs Ranch Resort Formal Application Submittal, April 29, 2008, Section 7.2, Figure E.2)

E.3 - Utility Plans (see Update to Warm Springs Ranch Resort Formal Application Submittal, April 29, 2008, Section 7.2, Figure E.3)

E.6 - Drainage Plan (see Update to Warm Springs Ranch Resort Formal Application Submittal, April 29, 2008, Section 7.2, Figure E.6)

S.2 -Site Plan with Topography (see Warm Springs Ranch Resort Formal Application Submittal, Part 2: Exhibits Submittal, Section S, Figure S.2)

S.5 - Site Constraints (see Warm Springs Ranch Resort Formal Application Submittal, Part 2: Exhibits Submittal, Section S, Figure S.5)

S.8 - Scheme 9 Site Plan (see Update to Warm Springs Ranch Resort Formal Application Submittal, April 29, Section 7.4, Figure S.8)

S.13- Conceptual Landscape Plan (see Update to Warm Springs Ranch Resort Formal Application Submittal April 29, Section 7.4, Figure S.13)

S.14 - Conceptual Trails Plan (see Update to Warm Springs Ranch Resort Formal Application Submittal, April 29, Section 7.4, Figure S.14)

S.15 - Conceptual Golf Routing Plan (see Update to Warm Springs Ranch Resort Formal Application Submittal, April 29, Section 7.4, Figure S.15)

S.16 - Conceptual Open Space Plan (see Update to Warm Springs Ranch Resort Formal Application Submittal, April 29, Section 7.4, Figure S.16)

S.17 – Conceptual Tree Conservation Plan (see Update to Warm Springs Ranch Resort Formal Application Submittal, April 29, Section 7.4, Figure S.17)

S.18 – Conceptual Lighting Plan (see Update to Warm Springs Ranch Resort Formal Application Submittal, April 29, Section 7.4, Figure S.18)

S.19 – Conceptual Circulation Plan (see Update to Warm Springs Ranch Resort Formal Application Submittal, April 29, Section 7.4, Figure S.19)

S.20 – Conceptual Cross Sections (see Update to Warm Springs Ranch Resort Formal Application Submittal, April 29, Section 7.4, Figure S.20)