WARM SPRINGS RANCH RESORT
ENVIRONMENTAL PLAN AND TREE CONSERVATION PLAN

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1 Executive Summary & Introduction

Helios Development, LLC (Owner) is proposing to develop the Warm Springs Ranch Resort (WSRR) on the former Warm Springs Ranch Golf Course and Restaurant property west of Ketchum, Idaho. The Owner is required to prepare and develop as part of Design Review a Warm Springs Ranch Resort Environmental Plan ("**Environmental Plan**") and a Tree Conservation Plan ("**Tree Conservation Plan**") for the PUD Property that incorporates the related concepts of wildlife habitat preservation/conservation, and flora/fauna preservation/conservation. The elements of the Environmental Plan and Tree Conservation Plan shall be incorporated in each phase of the Project. Additionally, this Environmental Plan incorporates by reference the following information sources found in the main submittal documents:

- The Warm Springs Ranch A Historic Context Narrative 1880 to 2000
- and Warm Springs Ranch Warm Springs Creek Enhancement Waterways Design Review and associated narrative, **Riparian Restoration Plan Overview for Waterways Design Review.**

Severe habitat loss has occurred in many ecosystems in the United States and throughout the world (Dobson et al. 1997), which is considered the most consistent threat to endangered species (Wilcove et al. 1998). Riparian habitat in the western U.S. exemplifies this issue, where as much as 90-95% of cottonwood-willow riparian habitats have been lost (Johnson and Carothers 1981, Knopf et al. 1988). Although riparian systems are restricted in area, these areas harbor a wide diversity of birds, as well as other plants and animals (Mosconi and Hutto 1982, Bock and Strong 1990, Saab et al. 1995). Habitat restoration is one of the only alternatives for conserving habitat in vulnerable landscapes (Dobson et al. 1997). Recently, various state and federal agencies have responded by restoring riparian habitat in the western U.S. (e.g., Rood et al. 2003). Changes in habitat from restoration may or may not result in changes in the functional properties of the restored area. In much of the Rocky Mountain West, impacts from development have accelerated in recent years and are raising environmental and economic concerns for their cumulative effects. Commercial and residential developments are causing high levels of landscape disturbance in areas considered important for wildlife habitat and livestock production. In some areas developers are responsible for on-site mitigation of these impacts in the form of reclamation as with the Warm Springs Ranch Redevelopment. Warm Springs Ranch Resort is committed in the long term to restoring and enhancing the functional values of the habitat and ecological diversity of the property. The proposed stream restoration and project enhancements would "create a stream corridor that blends the proposed resort into the surrounding ecosystems, neighborhood and community pragmatically, ecologically and aesthetically to maximize the overall environmental and public benefits."

Location of Area

The Warm Springs Ranch Project 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. The Owner is proposing to develop the Warm Springs Ranch Resort on the former Warm Springs Ranch Golf Course and Restaurant property west of Ketchum, Idaho. During the period between 2004 and 2009, a historic and natural resource assessment for the Warm Springs Ranch property was conducted. Resource field studies, review of existing data, compilation of information, and reports were developed by a team of consultants with local knowledge of the resource area. For complete details, see the *Preliminary Environmental Report, Warm Springs Ranch Resort, Ketchum, Idaho, Updated April 28, 2008; prepared by Will Miller Consulting, LLC* and the *BLM's Pre-decisional Environmental Assessment for Disposal of 1.62 acres of Public Land, January 2009*. These documents also contain the impact analysis and describe the direct, indirect, and cumulative effects of the proposed project.

Existing Conditions

At present, the Warm Springs Ranch Resort consists of the former Warm Springs Ranch Restaurant building, a nine-hole golf course, tennis courts, and various equipment/storage sheds and service outbuildings. Warm Springs Ranch primarily exists in an urban, residential setting with a significant portion of the 78 acre ranch comprised of non-indigenous golf turf. Major existing 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, noxious 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. Over the years, the one mile length of stream along both sides of Warm Springs Creek 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 enhancement of Warm Springs Creek to attempt to restore the stream and riparian habitat to a better functioning condition. An important component of the proposed stream enhancement involves reconnecting the stream to its floodplain so the stream and floodplain can interact and function more naturally; dissipating flood energy, lowering flood elevations, improving fish habitat and passage, and maintaining a healthy riparian corridor.

Conservation and Preservation Values

The Vision for the proposed project recognizes the environmental and recreational opportunities the development can provide the community and identifies specific on-site conservation and preservation values and uses to be protected and improved. Environmental design elements and considerations for the project include: renewable energy heating and cooling systems, alternative energy vehicles, passive solar design, utilizing native/native compatible plants, water conservation measures, and the use of sustainable buildings materials in construction. Conservation values and uses include:

- Protect and manage the conifer forest on the north slope of Bald Mountain.

- Continue to collaborate with the federal, state, local resource agencies, the Sun Valley Company, and the adjacent private property owners to manage the Bark Beetle infestation.

- Continue to cooperate with the Ketchum Ranger District, the City of Ketchum, and Blaine County to complete the Warm Springs Fuels Reduction Project as a community wildfire protection measure to create optimal defensible space and reduce fire hazard.

- Create, connect and diversify vegetation, habitats, and species through habitat improvements to Warm Springs Creek and its riparian corridor.

- Create naturally appearing and naturally functioning stream corridor. Reactivate the Warm Springs Creek stream channel above the confluence with the Big Wood River. Manage flooding in the project reach and in neighboring reaches.

- Protect the water quality of Warm Springs Creek and Big Wood River through implementation of on-site irrigation water percolation and gray water recycling system.

- Preserve and enhance the sensitive wetlands and the cottonwood forest on the south end of the property.

- Protect the existing wildlife corridors present on the property and minimize the effects of wildlife/human interaction.

- Protect the open space by minimizing hardscape surface and limiting building footprints.

- Promote sustainable resource management principles through implementation of and certification by Audubon International.

- Reduce the amount of the existing Kentucky bluegrass golf course turf areas by maximizing use of native and naturalized plants and turf that are biologically appropriate for the area.

- Provide public access to Warm Springs Creek along a dedicated fisherman's easement.

- Provide public trails and access to BLM and Forest Service lands for guests and the general public.

- Provide opportunities for wildlife-dependent recreation including wildlife viewing, wildlife education, and wildlife photography.

- Provide historic interpretive materials that describe the history of the original Warm Springs Ranch.

- Heighten the experience of being on site, create a sense of place, invigorate and stimulate sensory perceptions, embrace the acoustical perfume.

2 Species Condition, Function, Values

2.1 Overview of Vegetation and Habitat Assessment

With the exception of a few major habitat types, the native plant communities have been extirpated and little remains of the original vegetation. The existing vegetation and land cover has been documented on the property or immediately adjacent to the property on federal lands, regardless of vegetative stand or patch size, or wildlife value. Following are descriptions of the existing vegetation found on the property which includes plant species, structure and composition, and general condition, function and value.

2.1.1 Douglas Fir Forest

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.

In May 2009, through the efforts of the Owner, the Idaho Department of Lands, and the Forest Service, the Forest Stewardship Plan was initiated on the property and surrounding federal lands as MCH pheromone pouches were stapled to sections of the Douglas fir forest to help prevent Bark Beetle infestation.

2.1.2 Cottonwood Riparian Forest - Wetlands

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.

2.1.3 Cottonwood – Aspen - Willow

Condition, Functions, and Values

Like the Douglas 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 Disturbed Areas

Condition, Function and Values

This plant community is highly disturbed and in its present form provides little or no value to wildlife. Invasive and noxious weeds are present throughout.

2.3 Grassland

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 but ungulate use is limited because of human presence and disturbance.

2.4 Sage - Steppe

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.

Manicured Golf Turf –Fir

Condition, Function and Values

The Kentucky bluegrass golf turf is of little overall value to wildlife. The fir vegetation offers little wildlife habitat value and currently serves only to break up the monoculture created by the non-indigenous golf turf.

2.5 Important Habitat

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

2.6.1 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. Bark beetles have been discovered in this stand which could compromise the entire stand and may affect future benefits to wildlife. The Owner is collaborating with the federal, state, and local resource management agencies to assist with development of aerial application of the MCH pheromone flakes.

2.6.2 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 head gate diversion from Warm Springs Creek to an irrigation pond located below the former golf course, a small drainage ditch at the base of Bald Mountain, and wetlands on the south end of the property.

2.6.3 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 Jurisdictional waters on the property include all areas below the ordinary high water mark associated with Warm Springs Creek totaling 5.95 acres, the irrigation pond below the golf course totaling 0.76 acres, and the shrub/forested wetlands in the south portion of the property totaling 2.2 acres.

The 2.2 acre wetland complex on the southern end of the property is low 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. These areas would be protected through use of setbacks and buffer zones.

To facilitate the general discussion of the Warm Springs creek, the length along the Creek on the larger parcel is described as two different stream reaches. 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.

Degradation of Warm Springs Creek has occurred as a result of the following:

- During the 1940s and 1950s, the Upstream Reach was straightened and the 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

- 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. 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 building.

2.6 Wildlife Overview

The proposed project borders Warm Springs Creek and encompasses a portion of the floodplain. Historically, the floodplain maintained a broadleaf riparian forest dominated by cottonwoods and willows. Broadleaf riparian forests encompass a small, and dwindling, portion of the landscape in western North American. This plant community covers < 0.2% of Blaine County based on 2002 GAP analysis data. Broadleaf riparian forests are biologically diverse and productive systems. For example, of the 243 bird species that breed in Idaho, 46% (113) use riparian habitats for nesting. In addition, small streams and their associated riparian habitats provide the following:

- important migration corridors for large and small animals
- connectivity between diverse types of habitat
- spawning and rearing habitat for salmonids and other native fish species
- a significant source of a critical nutrients for downstream waters
- runoff and reduce the impacts of downstream flooding.

Cottonwoods are an extremely important component of healthy, productive deciduous riparian systems. They provide nest sites, roost sites, and cover for a variety of native birds and mammals, improve the complexity of fish habitat by contributing woody debris, stabilize stream banks, and help maintain water temperatures in streams by providing shade.

Due to the residential nature of the Warm Springs Creek 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 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 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. Forest fragmentation as it has occurred at Warm Springs Creek has affected and will affect plant and animal populations at several scales.

A collection of forest patches occupied by small populations of a riparian and wetland dwelling species now occurs at Warm Springs. Generally the rate of exchange between habitat patch sizes is correlated with how close patches are in space.

At the scale of the individual forest patch, several factors affect its value as plant and wildlife habitat. In general, larger patches support more species. This is because larger forest patches have more diverse kinds of habitats and support larger populations that are less vulnerable to chance local extinction. Additionally, only larger patches are likely to contain enough habitats to support species like larger mammals that require larger areas.

2.7 Open Space

Approximately 78% of the total 78-acre WSRR property (a total of 61 acres) will remain as active and passive open space. The preliminary Open Space Plan showcases the various zones of native and/or native compatible flora. Historic land cover exhibits have been researched in an effort to understand the natural distribution. In this way, the landscape zones have been designed to restore a large portion of the site to its natural state while providing a rich experience for guests and visitors.

2.8 Landscaping

Existing historic landscape features and vegetative patterns would provide the model for landscape improvements in the core area and the overall site plans. 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. Current and historic aerial information has been utilized as a basis for the landscape plans.

The preliminary Master and Core Area Landscape Plans detail the native and/or native compatible landscape palette that would be utilized throughout the project. Private areas within the main resort will be a combination of native compatible and enhanced plant material. Vegetation will be strategically located to provide maximum screen of the various on-site buildings while maintaining both on-site and off-site views and a natural appearance.

A preliminary Trails Plan showcases the various paths and connections on the project. A walk along the restored Warm Springs Creek, a climb onto the existing Bald Mountain Trails, or cross-country skiing atop a snow covered golf course provides an activity for every season. Trails are being designed to minimize impact on existing vegetation; new trails within disturbed areas will be designed to provide a natural experience.

During the warmer season, an executive, nine-hole, golf course provides a unique and site specific experience. The golf course layout minimizes the use of manicured turf while maximizing the use of native plant material, which it turn, provides an environment for native wildlife.

The preliminary Master and Core Area Circulation Plans show the minimized vehicular roadways while detailing the on-site pedestrian connectivity. Pedestrian pathways paired with the landscape palettes provide an environmental way of experiencing the project.

A Snow Removal Plan highlights the various areas that will either feature a snow melt system and/or snow removal to provide year round site access. Minimizing snow storage near the villas also provides a more natural setting for the projects cross country ski trails.

Attention to water conservation through use of appropriate high desert vegetation and a high tech irrigation system that reduces water consumption is an important element of the landscaping. 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.

Throughout the property, automatic irrigation controllers will be utilized to ensure that planting areas receive only the amount required to maintain and sustain healthy plants. A master control system with an on-site weather sensor station is recommended for the overall project to track daily environmental conditions, allowing the ability to fine-tune water distribution, as appropriate.

3 Overview of Mitigation Strategies

The proposed mitigation strategies would have the following components:

A. Be sustainable in the context of adjacent land uses. Although urban or suburban mitigation sites are often considered unsuitable because of adjacent land uses, such a determination should not be made until after the site is evaluated for vulnerability to pollutants, disturbance, and other impacts from uses associated with adjacent land parcels. Considerations such as appropriate buffers and site restriction mechanisms are incorporated in order to expect reasonable success for projects in these more vulnerable areas.

B. Include good stewardship and long-term protection provisions (e.g., site protection mechanisms, monitoring and contingency provisions).

For the purposes of this Plan the relevant terms are identified as follows:

- On-Site: within the project boundaries and/or areas adjacent or contiguous to the impact area.

- In-Kind: the same physical and functional type of habitat as that of the impact area.

When analyzing environmental impacts it is often suggested that proposals for development use a "sequencing" procedure: avoidance, minimization and finally compensation for unavoidable impacts. When an applicant proposes a project with unavoidable impacts, there is a responsibility to provide compensatory mitigation on-site.

Generally, in-kind compensatory mitigation is effective and preferable. This preference for in-kind compensation is based on the premise that the best way to ensure that lost aquatic functions are replaced is to compensate for their loss with the same type of aquatic resource on-site. In-kind compensatory mitigation is particularly important when the affected aquatic resource is considered locally important such as wetlands and riparian habitat found on-site.

Site selection for wetland conservation and mitigation should be conducted on a watershed scale in order to maintain wetland diversity, connectivity, and appropriate proportions of upland and wetland systems needed to enhance the long-term stability of the wetland and riparian systems.

As an example, essentially all mitigation for the vegetation and wildlife is based on the following measures:

1. Preserve and enhance a variety of different types of habitat, such as forest, wetland, and streamside. Protect existing trees or forest resources/habitats.

2. Plant new trees (this may include more general restoration of woodland/forest ecosystems). Preserve and enhance a variety of vertical layers of plants, such as canopy and understory trees, shrubs, and ground cover.

3. Maintain and enhance existing wildlife corridors to promote foraging and safety. Retain dead standing trees, fallen trees, logs, and vegetative litter, where appropriate.

4. Maximize the size and number of natural or naturalized patches within the area and maximize the use of natural or naturalized corridors to tie the patches together.

Relative to the project area where tree removal occurs, mitigation measures can be implemented as follows:

Table 1 – Mitigation Measures

Mitigation measures and locations	1. Protect existing trees or stands	2. Plant new trees and/or woodland/forest restoration
A. On site	• Protect existing individual trees and/or stands through project design: - relocate structures or infrastructure - utilize specialized construction methods to minimize damage to tree roots - set aside portions of project area as woodland/forest preserves	• Plant new trees in landscaped portions of parcel to replace those removed • Plant new trees on portions of the project area set aside as woodland/forest preserves

Mitigation Measures

Each mitigation measure (protection or planting) has advantages and disadvantages with respect to various management objectives, as shown in the following table:

Table 2 – Management Objectives

	Mitigation measures	
Management objective	1. Protect existing trees or stands	2. Plant new trees or woodland/forest restoration
1. Prevent net loss of tree canopy or forest type	If some trees are protected as a condition for removing other trees, net loss of canopy or forest type always occurs over the short term. If mitigation trees are mature, additional long term canopy loss is possible when the mitigation trees die. The degree of loss is a function of the mitigation ratio (e.g., 1 for 1 mitigation could lead to 50% loss).	Over the short term, canopy is normally reduced. Planting or forestation has the potential to prevent long-term net loss if: (a) mitigation ratio is at least 1 successful new tree for each tree removed; (b) replacement species have similar mature canopy spread; (c) replanting or natural regeneration maintains the mitigation planting in perpetuity
2. Maintain mature tree canopy	Some mature canopy can be maintained over the short term. Long term maintenance depends on whether provisions have been made for natural regeneration and/or eventual replanting.	Loss of mature canopy is not mitigated over the short term (i.e., not until new plantings mature).
3. Maintain aesthetics associated with existing trees	Aesthetic impacts associated with loss of mature trees can be partially mitigated, depending on location of mitigation trees.	Aesthetic impacts associated with loss of mature trees are not mitigated over the short term.
4. Maintain habitat values	Habitat values associated with mature trees and existing woodlands/forests may be partially mitigated over the short term, depending on: (a) habitat elements provided by mitigation trees; (b) the location of the mitigation trees with respect to other trees or habitat elements; (c) level of disturbance (both initial and ongoing) in the mitigation area	Loss of habitat values associated with mature trees and existing woodlands/forests are not mitigated over the short term. New plantings do have habitat values, but these typically differ from those associated with mature trees and stands.

	Mitigation measures	
Management objective	1. Protect existing trees or stands	2. Plant new trees or woodland/forest restoration
5. Maintain species diversity	The degree of mitigation provided depends on the species composition of protected areas. Locally uncommon or rare tree species can be conserved at least over the short term. Diversity of species other than trees (e.g., understory plants, animals) may also be conserved.	Depending on species used in planting, tree species diversity can be increased or decreased relative to preexisting tree or woodland/forest resources. The level of diversity among non-tree species depends strongly on the plant community and restoration / management practices used. Undesirable nonnative "weedy" species may be more prevalent in new plantings compared to existing woodlands/forests.
6. Maintain age diversity	Age diversity can be maintained if a variety of age classes are represented in the protected trees and stands.	Age diversity of forest or stand is usually reduced. Plantings typically give rise to even-aged stands.
7. Conserve local tree genetic resources	Conservation of germplasm from local tree populations and populations of other woodland/forest organisms is possible if a sufficient number of individuals are protected. However, maintaining a few widely scattered individuals of outcrossing wind-pollinated species might not permit seed set and would effectively eliminate regeneration.	Local genetic resources may be conserved if seed or other propagules from local populations are used. Use of non-local planting stock in woodland/forest plantings may be a source of "genetic pollution" and may accelerate the loss of genetic traits associated with local adaptation.

3.1 Mitigation Location

Most management objectives can be met on-site. However, the location of the mitigation has an impact on several management objectives as noted below.

Table 3 – Mitigation Location

Management objective	A. On site
1. Mitigate for local effects of tree removal	Local effects of tree loss can be at least partially mitigated.
2. Maintain habitat value	Ability to maintain contiguous stands that conserve habitat value may be limited, especially on small parcels.
3. Conserve local tree genetic resources	Conservation of germplasm from local tree populations and populations of other woodland/forest organisms is possible.

Riparian forest width and patch size is a useful, coarse indicator of riparian quality. Areas with narrower riparian forest resulting from disturbance along Warm Springs will inevitably harbor smaller populations of most species. Smaller populations and communities are more vulnerable

to disturbance, competition, and predation, (Orrock and Fletcher 2005). Previous land management activities (fill removal) have degraded floodplain soils and vegetation on the property. To summarize the mitigation recommendations, note that when conditions required for successful on-site mitigation are present, on-site mitigation is generally preferred because it provides compensation for functions that are lost or degraded at the impact site.

When evaluating compensatory mitigation options, consideration should be given to the following: 1) the likelihood for ecological success; 2) ecological sustainability; 3) practicability of monitoring and maintenance; and, 4) proximity to watershed where related impacts occur.

4 Recommended Best Management Practices and Mitigation

Operationally, WSRR would utilize the following list of Best Management Practices (BMPs) to minimize potential effects of residential development and golfing operations. BMPs include emphasizing mechanical controls over chemical application which minimizes impact on water quality and habitats.

1. Prohibit the feeding of game species or predatory wildlife. Artificial feeding of wildlife tends to attract and concentrate animals away from native habitat, can facilitate the spread of disease, and has the potential to create conflict between neighboring homeowners due to the likelihood wildlife will use adjacent properties where they may be considered a nuisance.

2. Anticipate big game and other wildlife depredations on native plant restorations, landscaping plants, and gardens once development and revegetation occurs. All responsibility for controlling wildlife depredation will belong with the property owner. Any actions taken to alleviate depredation will be those prescribed by Idaho Department of Fish & Game (IDFG).

3. Recommend all potential property owners are provided written information that deer, elk, and black bear depredation could occur on ornamental plants and all responsibility for controlling wildlife depredation will belong with the property owner. IDFG will provide direction to WSRR property owners for the necessary written information.

4. Prohibit burning of refuse (household garbage, landscaping trimmings, etc.). Neither Blaine County nor the City of Ketchum would allow burning without a permit. A wildfire in the area would have severe consequences for wildlife.

5. Restrain all pets in-doors, kenneled, or leashed at all times. Recommend the use of invisible fencing to restrict pets to within the building envelope in which they live. Pets running at large dramatically increase the negative effects of residential development on wildlife. Recommend active enforcement of this requirement as a way to minimize harassment of wildlife.

Although not proposed as a future permitted use, historic practice at the property has included dogs running at large – with or without the owners. To facilitate a sanitary environment, dog refuse stations should be provided.

6. Recommend all outside pet kennels are completely enclosed, including a roof, to prevent mountain lion and other predator depredation.

7. Store pet food and feed in a manner that does not attract nuisance wildlife (i.e., skunks, raccoons, magpies, black bear, red fox, etc.). All responsibility for controlling nuisance wildlife will belong with the property owner. Any actions taken to alleviate nuisance wildlife problems will be those prescribed by IDFG.

8. Recommend the use of bear-proof dumpsters for refuse storage. The Warm Springs area has a history of black bear depredation.

9. Fencing should be kept to a minimum, and if absolutely necessary, fences should be a post and rail design with a maximum top rail height of 42" and a minimum bottom rail height of 18". This design will facilitate wildlife passage through the area. No fencing would be IDFG preferred option.

10. Store hay and other livestock nutrients and feed in a manner that does not attract big game or other wildlife species. Attracting big game from native habitats exacerbates existing winter habitat problems in the Wood River Valley. The preferred option would be to not allow horses or other livestock.

11. Educate and inform the neighbors who live across the creek and Big Wood River of the recommended BMPs so they will also understand the need to restrain their pets. Observations indicate that some dogs are allowed to roam free, cross the stream, and harass the wildlife, waterfowl, and birds.

12. Provide at least one (1) access that complies with Americans with Disabilities Act requirements for fishing of Warm Springs Creek, and Owner will, subject to reasonable rules and regulations, allow pedestrian access for fishing along the entire reach of the PUD Property.

13. Setback future building structures on the north side of Warm Springs Creek 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 may enhance the riparian and upland native plant communities within the setbacks for the benefit of water quality protection and wildlife and fisheries habitat.

    Locate trails for fishing access and passive recreation uses within the setbacks. Protect and manage waterways on the WSRR that are jurisdictional to Army Corps of Engineers (ACOE) in accordance with federal and state regulations and permitting requirements.

14. Setback building structures 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 re-establishing 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.

    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.

15. Design the lighting at WSRR to preserve the dark, night sky in compliance with the City of Ketchum Dark Skies ordinance, Chapter 17.132. 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 motion-sensor lights, recessed, shielded and downward facing light fixtures, using LED or solar lighting as appropriate. In addition, lighting in riparian areas, wetlands, wildlife corridors, and remote areas will be minimized to occur at the adjacent walks/pathways using low voltage lights as required for safety.

    Other lighting strategies include turning off lights when not in use, using task lighting at work stations and turning off ceiling lights closest to windows. Lighting control systems can be installed to reduce energy consumption, save money and protect birds' lives. It is important to turn off all exterior floodlights during spring and fall migration.

16. Control noxious and invasive weeds that are present across the property. The presence of weeds reduces the quality of habitat for wildlife and diminishes the aesthetic value of the property. Develop and implement a noxious weed control program 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. To minimize the use of chemicals, pull weeds by hand and use soap to rid plants of insects. Disturbed areas would be reseeded with native/ native compatible plants

17. 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.

18. Public access trails shall be closed from dusk until one hour after dawn to offer a respite to wildlife. The Core Area trail circulation system would remain open to the resort guests.

19. Soil Erosion - All cleared areas which are not within a building footprint or a graveled entranceway must be covered with mulch, matting, or other effective erosion control features within 15 days of the initial clearing. Temporary erosion control features should be removed by October 15th of the same year the phase of development was begun. All permanent vegetation must be seeded or planted by October 1 of the same year the phase of development was begun. If, after a period of two years, the revegetation is not successful, additional reclamation would be required.

20. Firewise Landscaping - When designing and installing a firewise landscape, consider the following:
    - Local area fire history.
    - Site location and overall terrain.
    - Prevailing winds and seasonal weather.
    - Property contours and boundaries.
    - Native vegetation.
    - Plant characteristics and placement (water retention ability, aromatic oils, fuel load per area, and size).
    - Irrigation requirements.

    To create a firewise landscape, the primary goal is fuel reduction. To this end, initiate the zone concept. Zone 1 is closest to the structure; Zones 2-4 move progressively further away.

    Zone 1. This well-irrigated area encircles the structure for at least 30' on all sides, providing space for fire suppression equipment in the event of an emergency. Planting areas will integrate low flammability species into the overall landscape design for this zone

    Zone 2. Low flammability plant species should also be integrated into this zone and the irrigation system should extend into this section.

    Zone 3. Utilize native /native compatible plants with densities that are respectful of not creating excessive vegetation- high flammable conditions.
    Zone 4. This furthest zone from the structure is a natural area. Selectively prune and thin all plants and remove highly flammable vegetation.

21. Interpretive and Educational Areas – To continue to engage the guests and the general public in the on-going efforts to restore and enhance the diverse environmental setting of the Warm Springs Ranch property, educational areas are proposed to be developed along the meandering trails. To assist in identification of on-site bird species, a kiosk would be constructed that would include photos and bird calls.

A native plant species and herb garden would be planted near the location of the new Warm Springs Restaurant. Interested guests, and especially children, would be encouraged to participate in the gardening activities and learn how to use drought-tolerant techniques to grow plants and beneficial herbs.

22. Signage - **Help us keep Warm Springs sustainable!**

    Guests and golfers play a key role in environmental sustainability both on and off the course. A few simple rules will help preserve the natural environment for future generations:

    - Respect environmentally sensitive habitat areas on the course and along the trails
    - Know about and follow cart rules--or walk!
    - Repair ball marks and divots to keep turf healthy
    - Support the resort's and golf course's environmental initiatives
    - Recycle cans, glass and plastic bottles and always pick up litter
    - Share the sustainability message with others

Tree Conservation Plan

Effort is being taken to retain the existing trees located on the project. Utilizing current aerial information and preliminary GPS locations of existing trees, the preliminary Tree Conservation Plan depicts potential impact on existing vegetation. Trees that are destined to be removed will be evaluated and re-used on the project, if health and size permits (see 5 and 6 below for parameters).

Use of native plants is encouraged and retaining existing vegetation is encouraged. The long term sustainability of riparian and wetland habitats and maintaining the functions and values of these habitats are a primary goal. If trees planted or preserved as mitigation are to be maintained in perpetuity to offset tree loss, sufficient reserves should be available to establish an endowment to pay for eventual replanting.

1. Landscapers should have the option to select and/or approve appropriate mitigation options (including a combination of tactics) based on the local management goals and priorities, and the particular circumstances of each area.

2. Trees or woodland/forest resources maintained by the applicant will need to be monitored to ensure and enforce compliance. Provide funds for the direct and indirect costs associated with the mitigation tree planting, maintenance, and monitoring programs.

3. Cooperation with Federal and State agencies, county and other landowners will need to continue to help control the Bark beetle infestation. The Owners will work collaboratively with the affected parties to establish a long term plan to protect the trees on the property and on adjacent properties.

4. 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 2007/08, 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 and work cooperatively with others regarding the bark beetle infestation.

5. Retain existing trees. Healthy trees that are more than 6 inches in diameter should be retained unless:
   (a) The tree is determined by an arborist to be dead or diseased and needs to be removed, or it constitutes an immediate hazard to life or property; or
   (b) The tree is within a water, sewer, or other utility easement; or
   (c) The tree is within a proposed roadway or City-required construction easement, including areas devoted to curbs, parking strips, pathways, or sidewalks, or vehicle areas.

6. Tree removal. Trees greater than six inches in diameter may be removed in the following situations:
   (a) When they are within 10 feet of an existing or proposed building or 5 feet of a paved surface;
   (b) When they are diseased or pose an immediate danger, as determined by an arborist;
   (c) When they are below the ordinary high water level of Warm Springs Creek; or
   (d) When they are within a water, sewer, or other utility easement.

Conclusions

Warm Springs Creek is the key focal point of the Warm Springs Ranch Resort site and the enhancement of the creek is a fundamental element of the larger resort project. However, due to the existing habitat conditions 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 occur. Considering the overall project, it is recommended that if appropriate on-site mitigation measures and best management practices outlined in this Plan are employed, the development as proposed will negate impacts. The project's Vision and overall Goals would be met through the proposed stream restoration and project enhancements as these would "create a stream corridor that blends the proposed resort into the surrounding ecosystems, neighborhood and community pragmatically, ecologically and aesthetically to maximize the overall environmental and public benefits."

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