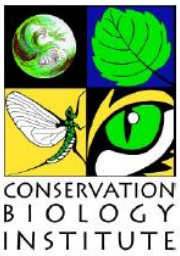
Assessment of Conservation Values
Martis Valley Opportunity East and West Parcels
Placer and Nevada Counties, California

Prepared for

Trust for Public Land
and
Sierra Pacific Industries

Prepared by



September 2012

Executive Summary

The Martis Valley between Lake Tahoe and Truckee in the Sierra Nevada has been the focus of conservation efforts for well over a decade. This area lies within a crucial landscape linkage between mature forests in the Granite Chief Wilderness in the Sierra Nevada and the Mount Rose Wilderness in the Carson Range of Nevada. These mature forests support habitat for the California spotted owl, Pacific marten[1], and other species that require mature forests. The montane meadows, riparian habitats, and aquatic ecosystems within the Martis Creek sub-basin of the Truckee River watershed have been recognized as critical to the overall biodiversity of the region, supporting fawning habitat for the Loyalton-Truckee deer herd and breeding habitat for several species of conservation concern, and are important to the recovery of the federally Threatened Lahontan cutthroat trout.

This document presents a landscape-scale analysis of the potential biological and conservation benefits of developing approximately 700 acres south and west of Highway 267, in exchange for permanent conservation of a 6,376-acre parcel north and east of Highway 267, both owned by Sierra Pacific Industries. The results of the analysis support the original (2000) conservation vision for the Martis Valley area developed by conservation partners, which recommended maintaining the integrity of lands east of Highway 267 to protect their proper functioning as a linkage and high quality watershed. As a result of this conservation vision, over 1,500 acres were set aside for conservation, including the Waddle Ranch and lands set aside as mitigation for other development projects.

Conservation of intact habitat east of Highway 267 would concentrate open space lands, consistent with the Martis Valley Community Plan and Placer County environmental policies, which recommend that development design maintain large areas of non-fragmented natural habitat and retain high quality open space and visual resources. While subsequent environmental documentation will identify site-specific impacts on the proposed development site, it is likely that any impacts, if deemed significant, will be mitigated by conservation of the 6,376-acre parcel.

[1] Taxonomic review has identified martens west of the Rocky Mountain crest as a separate species (Pacific marten, *Martes caurina*) from those to the east (*Martes americana*) (Dawson and Cook In press).

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Introduction

On behalf of several conservation partners in the Sierra Nevada, the Conservation Biology Institute (CBI) conducted a landscape-scale assessment of conservation values in the Martis Valley area, with a focus on the Sierra Pacific Industries (SPI) Martis Valley property along both sides of Highway 267 (Figure 1). Using existing data, CBI evaluated biological resource constraints within the context of reserve design principles to:

- Inform the potential biological and conservation benefits of siting development on the 1,450-acre SPI/CNL-West parcel (south and west of Highway 267), in exchange for permanent conservation on the 6,376-acre SPI-East parcel (north and east of Highway 267).
- Identify early field studies needed to inform design of a development footprint.
- Better direct studies and impact analyses needed for California Environmental Quality Act (CEQA) review.

Landscape-scale conservation is a concept acknowledging that many ecological processes require large landscapes to function. Hydrologic regimes are determined by characteristics of entire watersheds; fire is a natural process that can occur across huge areas, and some population-level plant and wildlife interactions can operate across entire continents. To be effective, conservation of individual sites should fit into the context of conservation at larger scales such as landscapes. Addressing landscape-scale issues in an initial planning phase for development can help to minimize many indirect impacts, such as edge effects and impacts to ecological processes such as wildlife movement, and can maintain or enhance conservation values of existing conserved lands by increasing the patch size of conserved and managed land, buffering them from edge effects of development, and providing landscape connections between existing conserved lands. Landscape-scale planning can also help focus development design by considering these conservation issues and identifying potential ecological impacts upfront. Landscape-scale conservation is the focus of the State of California's Natural Community Conservation (NCCP) Act and is generally the accepted protocol for regional planning, as adopted by the Placer Legacy Open Space and Agricultural Conservation Program, the basis for the NCCP program in western Placer County.

CBI worked with conservation partners in the Martis Valley area in 2000 to develop a conservation vision for the area (Figure 2). The vision acknowledged two critical conservation values from a regional perspective:

1. A crucial landscape linkage, including habitat for species associated with mature (late-seral) forests, between protected areas in the Sierra Nevada, including the Granite Chief Wilderness, and those in the Carson Range of Nevada, such as the Mount Rose Wilderness (Figure 1).
2. A high quality watershed sub-basin−Martis Creek−of the Truckee River watershed, important to (a) maintaining water quality in the Truckee River system as a whole and the recovery of the Lahontan cutthroat trout (LCT), and (b) supporting rare montane meadows, which contribute to the overall biodiversity of the region, provide fawning areas for the Loyalton-Truckee deer herd, and support breeding habitat for several species of conservation concern (see text box).

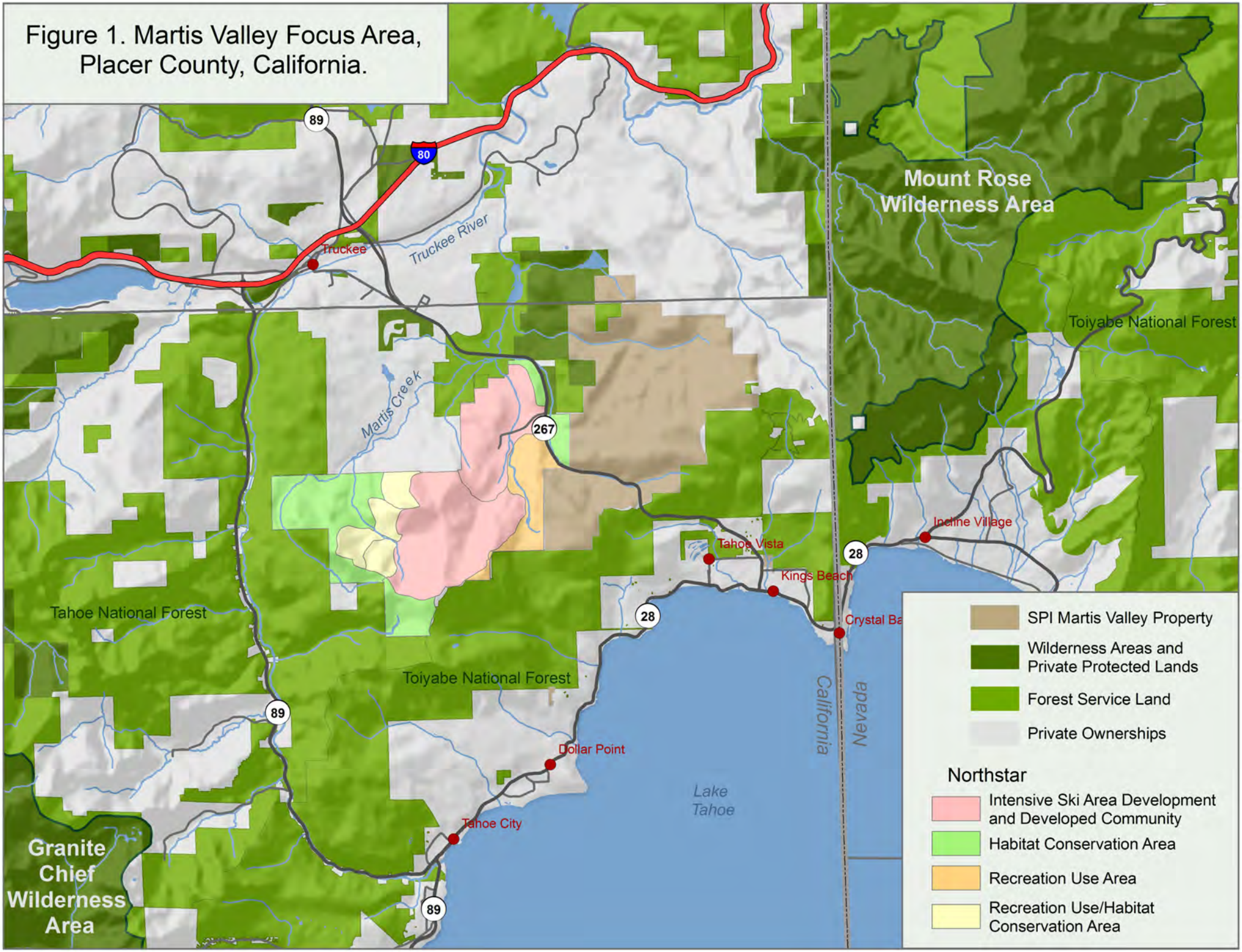
Figure 1. Martis Valley Focus Area, Placer County, California.
89
80
Truckee
Truckee River
Martis Creek
267
Mount Rose Wilderness Area
Toiyabe National Forest
Incline Village
28
Tahoe Vista
Kings Beach
Crystal Ba
Tahoe National Forest
Toiyabe National Forest
California
Nevada
Dollar Point
Lake Tahoe
Tahoe City
Granite Chief Wilderness Area
SPI Martis Valley Property
Wilderness Areas and Private Protected Lands
Forest Service Land
Private Ownerships
Northstar
Intensive Ski Area Development and Developed Community
Habitat Conservation Area
Recreation Use Area
Recreation Use/Habitat Conservation Area

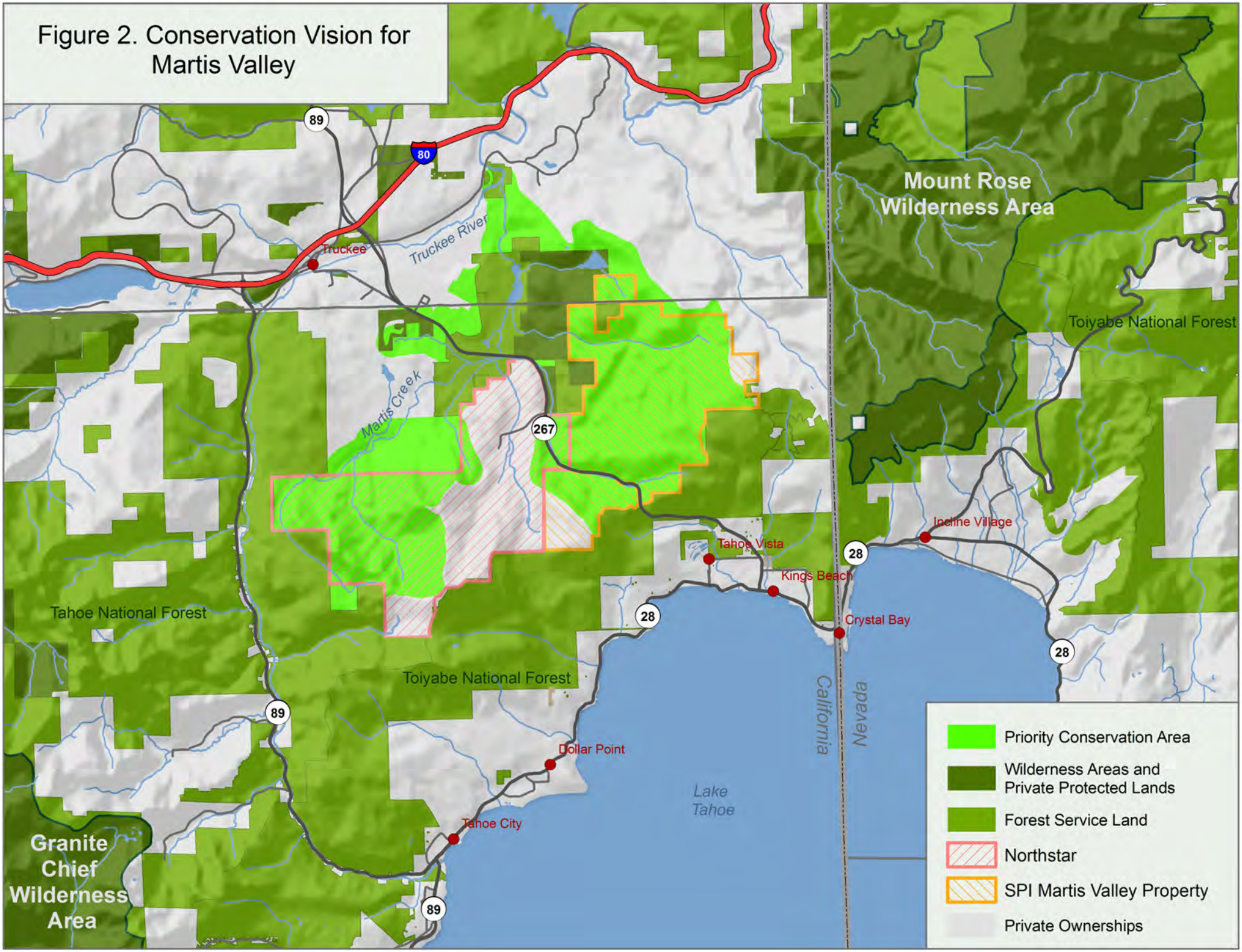
Figure 2. Conservation Vision for Martis Valley
89
80
Truckee
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Martis Creek
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Tahoe City
Granite Chief Wilderness Area
Priority Conservation Area
Wilderness Areas and Private Protected Lands
Forest Service Land
Northstar
SPI Martis Valley Property
Private Ownerships

This current analysis considers the potential for development on the SPI Martis Valley property in the context of that conservation vision, new data on biological resources in the region, and recent conservation efforts in Martis Valley, including Northstar's Habitat Management Plan (EDAW/AECOM 2009) and the acquisition of the Waddle Ranch for conservation. The conservation vision identified the lands east of Highway 267, including SPI-East, as high priority for conservation because maintaining the integrity of this area is critical to protecting its proper functioning as a linkage and high quality watershed (Figure 2).

Conservation Values and Regionally Significant Resources

Martis Valley is in the Tahoe-Truckee subsection of the Sierra Nevada Ecoregion, supporting a unique assemblage of elements of both the Sierra Nevada and Great Basin biogeographic regions. The Martis Valley watershed is a sub-basin of the Truckee River drainage, which is an important hydrogeomorphic feature connecting higher elevations in the Sierra Nevada of California to lower elevations in the Reno, Nevada area. The landscape linkage and the intact watershed east of Highway 267 support predominantly red fir, white fir, and mixed conifer-fir forests, but also smaller inclusions of annual and perennial grasslands, aspen, barren areas, bitterbrush and sagebrush, eastside pine, montane chaparral and hardwood, and montane riparian and wet meadow (U.S. Forest Service CALVEG). These vegetation communities are important to supporting several *species of conservation concern* (see text box), as described below.

Species of Conservation Concern

CEQA and NEPA, as well as the NCCP Act, require evaluation of environmental impacts to legally protected species (*state- or federally-listed species*) as well as other species without legally protected status. A number of different terms are used in different documents to represent these species, including:

- Sensitive species
- Special status species
- Species of special concern
- California Native Plant Society (CNPS) species
- Game species (CDFG)
- Management Indicator Species (Forest Service)

Mature Forest Species

The California spotted owl, northern goshawk, and Pacific marten are *Management Indicator Species* for late seral open canopy coniferous forest on National Forest lands, as listed in the 2001 Sierra Nevada Framework, which required that the Forest Service develop a monitoring program for keystone and important wildlife species within the National Forests of the Sierra Nevada. These species have no legally protected status on private lands, but typically are required for impact analysis by the California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA).

California Spotted Owl

The higher elevations of the region support home ranges and protected activity centers for the California spotted owl. In fact, these areas surround the Martis Valley on the south (along the Tahoe Rim Trail) and through the Tahoe and Toiyabe National Forests along Highway 89. Suitable nesting and foraging habitat for spotted owls has been identified on the Northstar property adjacent to SPI lands, with nesting on the westernmost part of Northstar (EDAW/AECOM 2009). Spotted owl home range and activity centers have been mapped on Forest Service land directly east of the SPI/CNL-West parcel (Figure 3), so owls could use adjacent properties for dispersal and foraging.

Northern Goshawk

Like spotted owls, goshawks prefer mature forests for nesting, especially near ponds, creeks, or ephemeral streams. According to the U.S. Forest Service management guidelines, the nest area for one pair is approximately 30 acres, while its foraging area ranges across 5,400 acres (Reynolds et al. 1992). Suitable habitat for goshawks has been identified on the Northstar property adjacent to SPI lands, and there is an active nest on the west side of the Northstar property (EDAW/AECOM 2009); so goshawks could use adjacent properties for dispersal and foraging.

Pacific Marten

Martens are strongly associated with high-elevation, late-seral forests (especially unmanaged red fir forests, Spencer and Rustigian-Romsos 2012), and riparian areas near mature forests are important for foraging (Spencer et al. 1983). Maintaining and improving connectivity of late-seral forests is a key conservation objective for managing martens. Martens are fairly common in the Lake Tahoe area, relative to other portions of their range in the Sierra Nevada. CBI has identified potential summer habitat for this species across much of the Martis Valley, both east and west of Highway 267 (Figure 3, Spencer and Rustigian-Romsos 2012), although it is not known if martens occupy the SPI property. During summer, martens appear to concentrate activities in the red fir elevation zone, whereas in winter they may often be detected in lower, mixed coniferous forests. Summer habitat for martens therefore may be more restrictive than winter habitat.

Intact Watershed

Montane Meadows and Watershed Protection

Martis Creek, its tributaries, and associated riparian wetlands and montane meadows provide habitat for a variety of wildlife and sensitive plant species, including the mountain yellow-legged frog, willow flycatcher, and Sierra Nevada mountain beaver (EDAW/AECOM 2009, U.S. Forest Service data). These lands also support critical summer foraging and fawning areas for the Loyalton-Truckee deer herd (Figure 4).

The East Martis Creek, Monte Carlo Creek, and Juniper Creek basins east and north of Highway 267 are relatively intact and free of permanent land cover changes. The intact upland habitats in the eastern Martis Creek watershed buffer the creek, its tributaries, and downstream receiving waters from hydrological alterations and changes in water quality produced by land use changes in the basin, thus providing watershed protection. For this reason, Figure 2 includes the area east and north of Highway 267, including SPI-East, as Priority Conservation Areas.

West of Highway 267, including SPI/CNL West, the West Martis Creek basin has been compromised to some degree by development impacts. Development, roads, recreation, and timber harvesting in the Truckee River Basin downstream of Martis Creek have contributed incrementally to habitat loss and air and water quality degradation in the watershed and have led to the River's designation as an *impaired water body* (WRCB 2010).

Figure 3. Pacific Marten and Spotted Owl Habitat in the Martis Valley Focus Area.

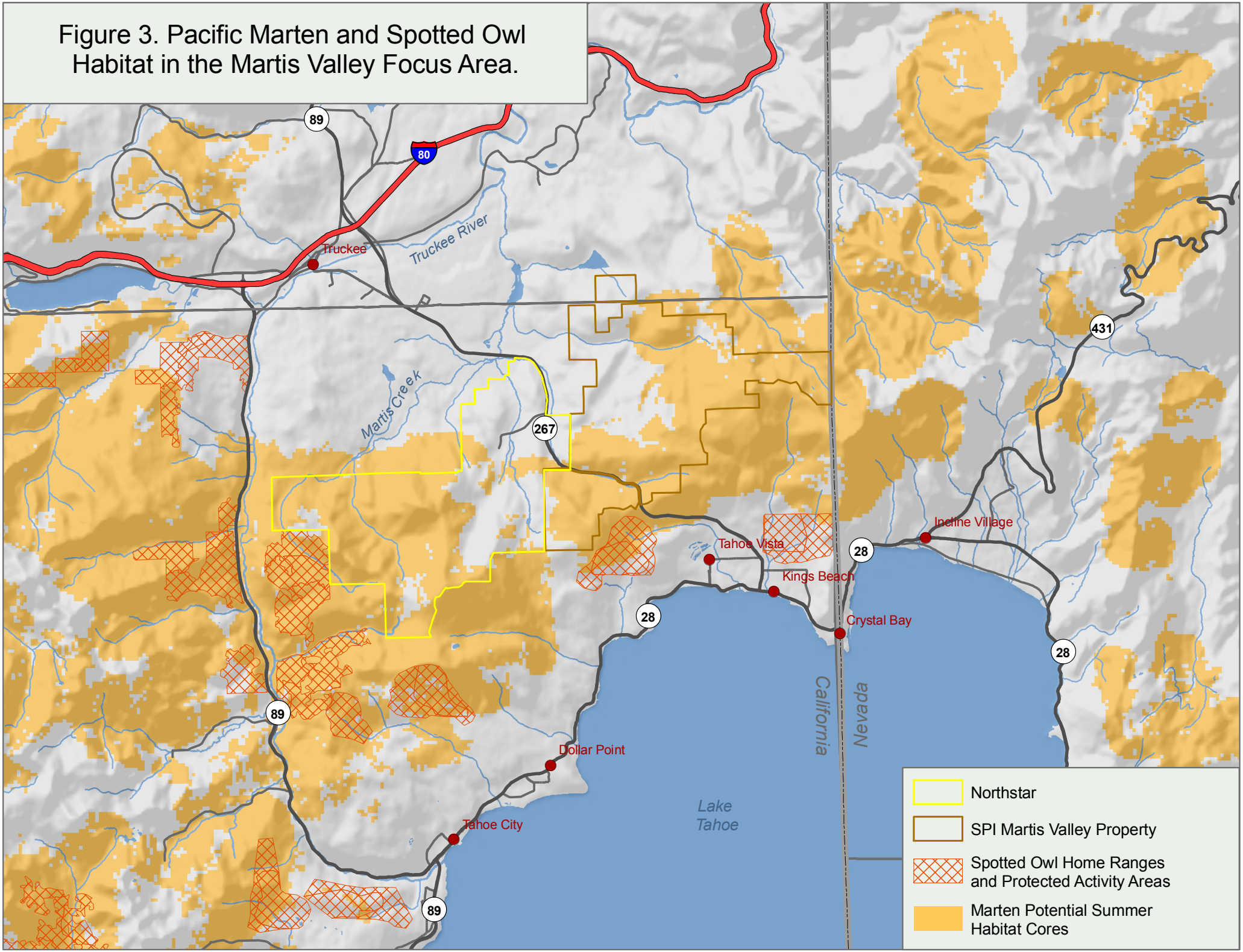
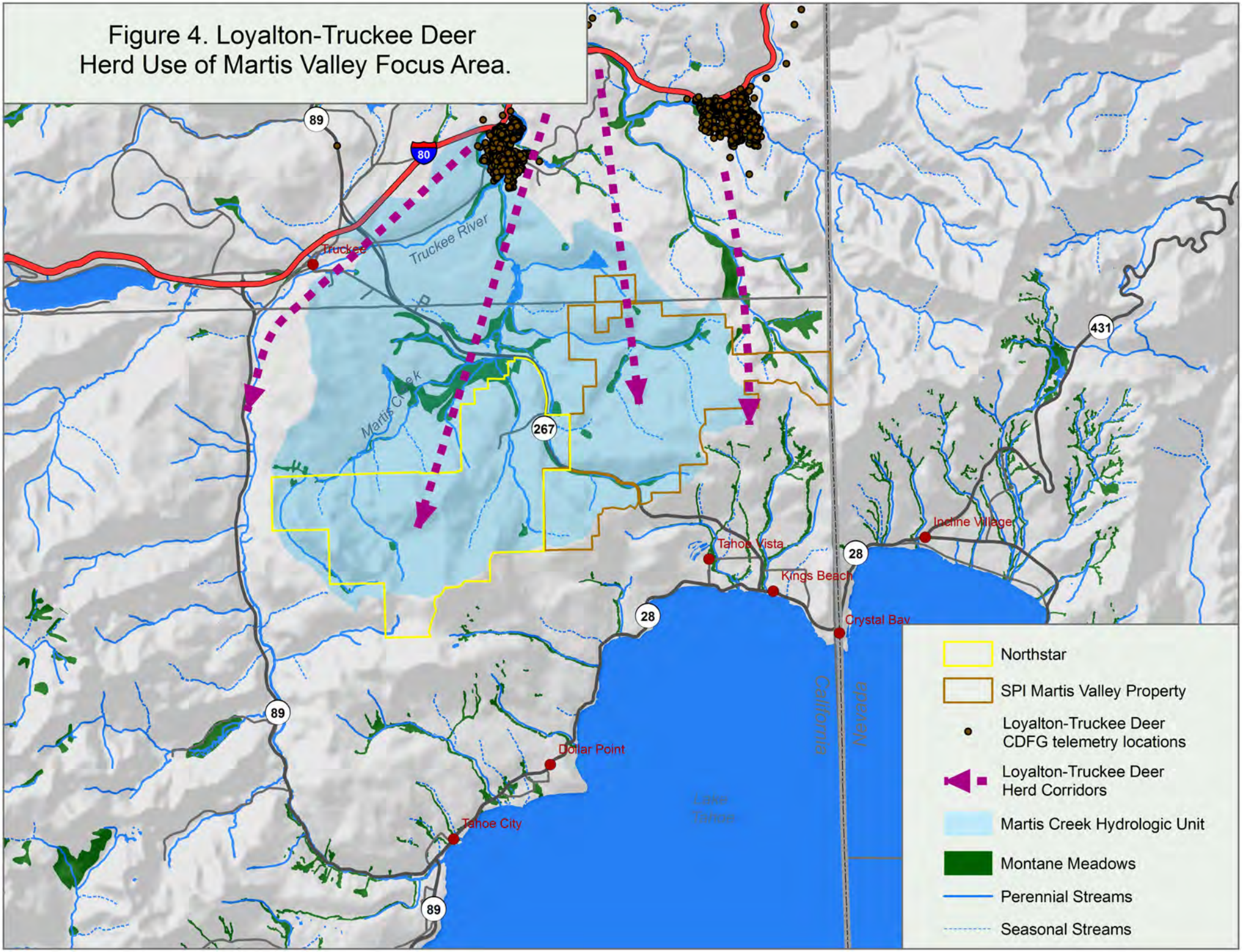


Figure 4. Loyalton-Truckee Deer Herd Use of Martis Valley Focus Area.



Lahontan Cutthroat Trout

LCT populations historically persisted throughout the entire Truckee River system, before the river and its tributaries were altered by dams and other development. The LCT short-term action plan identifies priority recovery efforts for LCT in the Truckee River basin, including Martis Creek and its tributaries, although no such recovery efforts have occurred to date:

> *Martis Creek has the long-term potential to benefit recovery of LCT when it is reconnected to the mainstem Truckee River. When the system is reconnected, Martis Creek will provide important spawning and rearing habitat. The Truckee River Basin Recovery Implementation Team (TRIT), working with partners and the local community, including anglers and guides, will initiate a planning effort to develop solutions to restore connectivity of the Martis Creek system to the mainstem Truckee River (TRIT 2003).*

As a result of the short-term action plan, the Lahontan Regional Water Quality Control Board (RWQCB) set limits on sediment levels (a Total Maximum Daily Load of suspended solids) to support cold freshwater aquatic habitat for spawning, reproduction, and development–designated as *beneficial uses* in the middle Truckee River watershed (Lahontan RWQCB 2008). Runoff from development, roads, recreational areas, and timber management areas can increase sediment contributions to the Truckee River. For these reasons, the conservation vision shown in Figure 2 identifies the sub-basins on the east side of Highway 267, including SPI-East, as important for conservation, because they are still intact and have not been impacted by the type of development that has occurred west of Highway 267.

Loyalton-Truckee Deer Herd

The California Department of Fish and Game (CDFG) regulates hunting of game species such as the mule deer. The Loyalton-Truckee deer herd is an interstate herd with winter ranges in both California (77%) and Nevada (23%) and summer ranges in California (Interstate Deer Project 2010). The U.S. Forest Service manages 50% of the land used by the herd, while 44% is in private ownership, including SPI property. The CDFG and Nevada Department of Wildlife are concerned that both urban development in the Truckee area and exurban (rural) sprawl in the surrounding region are a threat to this herd and so have been conducting radio-telemetry studies in the area to better understand movement patterns and important habitat use areas. Telemetry data from selected individuals in the Verdi sub-unit (in Placer and Nevada counties) of the Loyalton-Truckee herd do not include points south of Truckee (S. Hurd, CDFG, personal communication). However, the Martis Valley area and the western shore of Lake Tahoe form the southernmost part of this herd's summer range and support fawning areas (Figure 4). Fawning areas on parts of Northstar are closed seasonally to recreation to minimize potential disturbance to does and fawns (EDAW/AECOM 2009).

Human encroachment resulting in habitat loss, as well as roads and human recreational disturbance, have displaced and restricted deer from preferred habitats and have increased mortality. Therefore, one of the main objectives of the Loyalton-Truckee Deer herd management plan is to improve fawning success and summer range habitat capacity through habitat management; maintaining undeveloped tracts of summer range, such as that east of Highway 267, is important for managing the herd (Interstate Deer Project 2010).

SPI Development Constraints

In analyzing the comparative biological and conservation benefits of development on SPI/CNL-West lands as compared with development on SPI-East, we used the following assumptions about the approximate amount and general location of development west and east of Highway 267:

- For SPI-East, which is east of the Recreation Use Area of the Northstar property (Zone C1, Figure 5), we used the development designation in the Placer County General Plan, which includes up to 1,360 units on approximately 660 acres, along with a 6-acre non-residential area.
- For SPI/CNL-West, which is east of the Habitat Conservation Area on the Northstar property (Zone E3, Figure 5), SPI and its business partners recommended that up to 760 units on approximately 700 acres be used for analysis, along with a small non-residential area.

Forest Service lands border both parcels on the east, and a small (240-acre) parcel of Forest Service land borders the west side of SPI-East. Land uses adjacent to the SPI parcels are relevant for evaluating the compatibility of potential land uses with conservation values on the SPI parcels themselves, as well as for assessing the potential for similar biological resources to occur on the SPI land.

Generally speaking, conservation and biological benefits increase where:

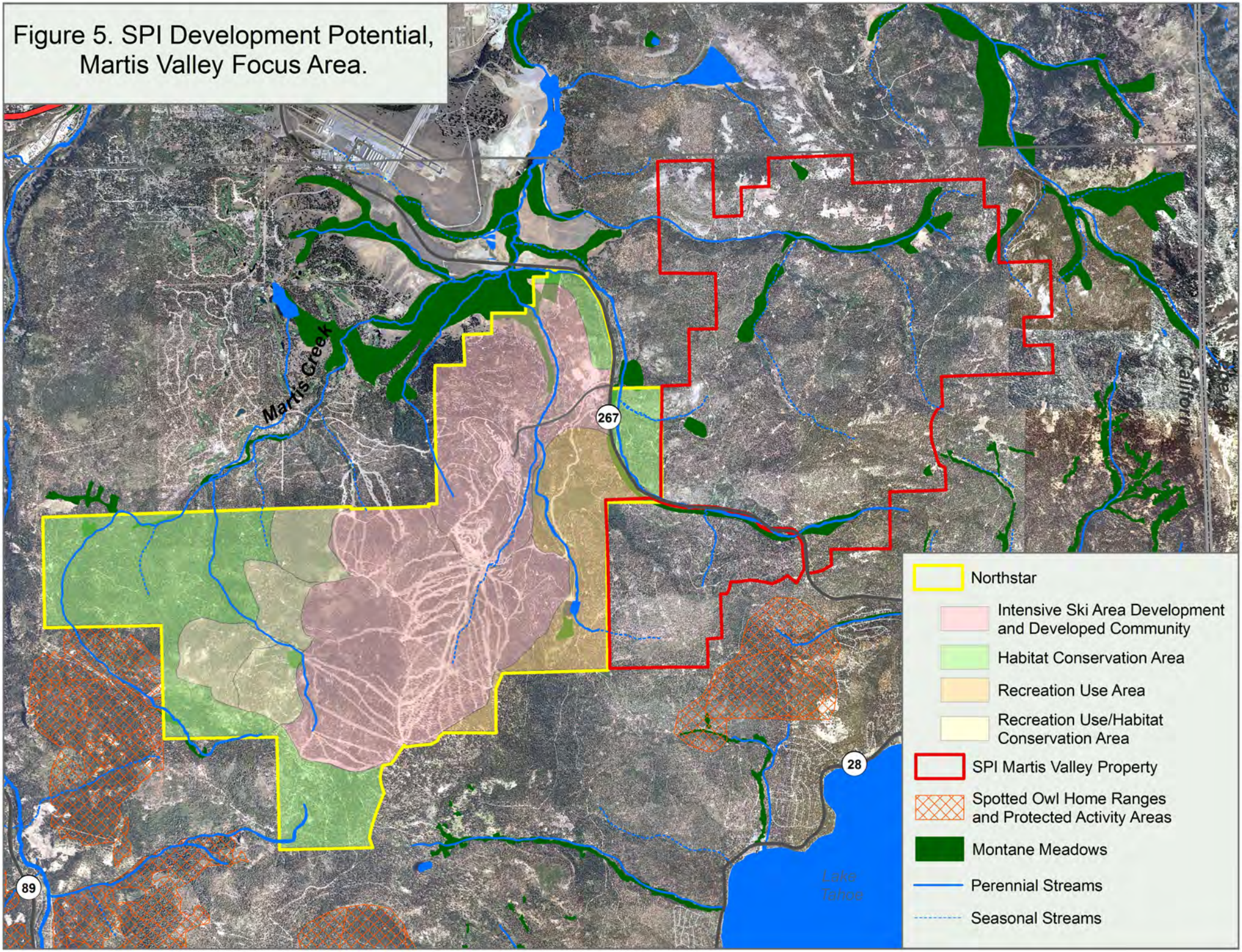
- Development is concentrated or clustered at higher densities on a smaller development footprint and located near existing infrastructure and development.
- New development takes advantage of existing infrastructure, thus minimizing habitat fragmentation and the potential for increased mortality due to roadkill.
- Development avoids areas of higher biological value, including critical linkages.
- Development is clustered or concentrated rather than spread out, resulting in habitat fragmentation.
- Development is buffered by uses compatible with adjacent conservation.
- Fire management is included within the development footprint.

Specific comparisons of conservation and biological benefits are described below by conservation value.

Mature Forest Species

SPI-East and SPI/CNL-West lands both support vegetation communities of red fir, white fir, and mixed conifer-fir (U.S. Forest Service CALVEG), and potentially provide habitat for species of conservation concern such as spotted owl, northern goshawk, and Pacific marten. SPI lands on both sides of Highway 267 may support potential summer habitat for the marten (Figure 3), so they likely use the SPI properties at least for dispersal and foraging. Home ranges of martens in the Sierra Nevada in largely uncut forest landscapes average 300-500 ha (740-1,235 acres) (Simon 1980, Spencer et al. 1983), and roads are a direct threat to martens (via roadkill). As marten populations are quite sensitive to the effects of forest fragmentation (Bissonette et al. 1997), it is important not to fragment this habitat further.

Figure 5. SPI Development Potential, Martis Valley Focus Area.



Both Zone E3 (Habitat Conservation Area) and Zone C1 (Recreation Use Area) on the Northstar property are considered to support low to moderate breeding value for northern goshawk, and foraging value for both goshawk and spotted owl (EDAW/AECOM 2009). Forest Service land directly east of SPI/CNL-West supports mapped home range and activity centers for the spotted owl. It is probable that the SPI properties support dispersal foraging for these species. Therefore, it is important to prevent development that may disrupt nesting by these species on adjacent lands and that may fragment the connectivity of the high elevation mature forests. Siting development adjacent to the existing Northstar property west of Highway 267, as opposed to east of Highway 267, would minimize fragmentation impacts to these resource values and functions.

Development on either parcel would create new Wildland Urban Interface (WUI), requiring specific forest management prescriptions adjacent to the development bubbles that may not be preferred from a conservation perspective. Thus, siting development close to existing development west of Highway 267 would minimize the area of new WUI required and maintain forest management flexibility.

Intact Watershed

Both parcels support seasonal drainages (drainages with surface water only part of the year), as well as ephemeral drainages (occasional discharge after rain events) that will require jurisdictional delineations of wetlands and waters of the U.S. prior to development (Figure 5). All streams have the potential to support populations of riparian breeding birds, migratory birds, and special status species. Both areas may support summer habitat for the Loyalton-Truckee deer herds, and the montane meadows have the potential to support fawning habitat.

SPI-East supports about 13 acres mapped as montane meadow, some of it vegetated with willow scrub, while montane meadow has not been mapped on SPI/CNL-West, except along Middle Martis Creek along Highway 267 (U.S. Forest Service CALVEG). New development will result in incremental loss and degradation of habitat and increased road mortality for deer.

Martis Creek drains to the Truckee River, which the State Water Resources Control Board (WRCB) has listed as an *impaired water body* as a result of excess sedimentation and siltation in the watershed (WRCB 2010). Sources of sedimentation and siltation in the Truckee River Basin include: channel erosion, construction/land development, road/bridge construction, natural sources, nonpoint sources, range grazing, recreational and tourism activities (non-boating), forest management, snow-skiing activities, and stream bank modification/destabilization (WRCB 2010). Water quantity and quality, especially elevated temperature, significantly limit habitat for LCT in the Truckee River system.

Thus, directing development into tributary basins with lower integrity (e.g., SPI/CNL-West), while conserving more intact basins (e.g., SPI-East), may help maintain watershed-associated conservation values in the region. The East Martis Creek watershed to the north/east of Highway 267 is largely intact, whereas the integrity of the West Martis Creek watershed to the south/west of Highway 267 has been compromised by the Northstar development and ski area. Development of SPI-East could also have negative implications for implementing proposed recovery actions for the LCT.

The SPI-East parcel is bordered on the east and west by protected open space (Figure 5); thus, development of this parcel would more likely result in fragmentation of the open space. The SPI/CNL-

West parcel is also bordered on two sides (south and east) by protected open space and would also result in fragmentation. However, development potential on the SPI/CNL-West parcel is more compatible with the existing Northstar recreational uses on the west side of the parcel than is the development potential on SPI-East, especially considering the large investment of funds expended to conserve the Waddle Ranch north of Highway 267.

Impact Assessments

This landscape-level analysis of SPI lands in the context of existing conserved lands and existing development demonstrates that directing development to the SPI/CNL-West property in exchange for conservation of SPI-East lands will result in regional biological and conservation benefits and is consistent with the conservation vision for Martis Valley. We do not recommend any additional surveys prior to those typically conducted as part of the CEQA documentation. The assessment of potential direct and indirect impacts as part of CEQA documentation should be conducted in the context of this landscape analysis and include assessments of:

- Wetlands jurisdiction (delineations of wetlands and waters of the U.S.)
- Suitable habitat for mature forest species, including northern goshawk, spotted owl, pileated woodpecker (known to nest at Northstar), and Pacific marten
- Fawning areas for mule deer
- Assessments of potential habitat for southwestern willow flycatcher and mountain yellow-legged frog
- Spring surveys of riparian breeding birds and migratory birds
- Surveys for Galena Creek rock-cress and Davy's sedge (CNPS list 1B) and other special status plants

Conclusions

CBI's landscape-scale analysis of the Martis Valley area concludes that any development on the SPI Martis Valley property should be targeted for the SPI/CNL-West parcel, with conservation of the SPI-East parcel as mitigation. The development footprint on the SPI/CNL-West parcel should include a fire management zone, so as to minimize the potential for impacts to spotted owls and habitat management on Forest Service lands to the east. Conservation of intact habitat east of Highway 267 would concentrate open space lands, consistent with the Martis Valley Community Plan and Placer County environmental policies, which recommend that development design maintain large areas of non-fragmented natural habitat (Policy 6.C.1) and retain high quality open space and visual resources (Policy 12-MVCP). Conservation of 6,400 acres on the SPI-East parcel in exchange for development of approximately 700 acres on the SPI/CNL-West is consistent with these policies and the conservation vision for the Martis Valley area. While subsequent environmental documentation will identify site-specific impacts on the SPI/CNL-West property, in accordance with the recommended surveys noted above, it is likely that any impacts, if deemed significant, will be mitigated by conservation of SPI-East.

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