Conserving Lands & Restoring Health
Mission: Conserve the lands and waters on which all life depends

- 69 Countries
- 5000 employees
- 500 scientists
- Over 1 million members
- Over 100 marine conservation projects
- 103 million acres protected
- 5,000 miles of river protected
Ocean
Nature diversity and resiliency

Science to define and map nature

Science to build constituency for the conservation solution

Science to demonstrate relevance of conservation

Science to develop and demonstrate conservation solutions
Lower Carpenter Valley Conservation
Bobcats were photographed throughout the study area in most of the habitat categories with greatest detection rates occurring at cameras placed on the northwest side of Carpenter Valley (Figure 19). We captured more photographs of bobcats on roads (Figure 20), but adjusting for camera effort bobcats were not statistically more likely to be captured on roads than in flat forest habitat ($P = 0.16$).
Snowshoe hare (*Lepus americanus*)

Figure 39. Locations and capture rates of snowshoe hares at individual camera stations in Carpenter Valley, CA.
CONSERVATION GOAL: Protect treasured landscapes around Truckee, conserving critical wildlife habitat and expanding recreational opportunities for residents and visitors.

CONSERVATION ACREAGE GOAL (2020) 18,000 acres

Progress Through 2016 2,200 acres
Remaining 15,800 acres

LEGEND
- Conserved Lands
- National Forest
- Wilderness Areas
- CA State Parks
- CA Dept. Fish & Wildlife
- CA State Lands
- Private Lands
- Keystone Partnership Projects

THREATS TO ECOLOGICAL INTEGRITY OF LANDSCAPE
Fragmentation and loss of native habitat by second homes and resort development, degradation of water quality by roads, construction, and golf courses.
LITTLE TRUCKEE RIVER WATERSHED

CONSERVATION GOAL: Protect a primary source of drinking water for northern Nevada and one of the sole places on Earth that supports native populations of Lahontan cutthroat trout. Lay the foundation for the restoration and public enjoyment of this spectacular but little known corner of the northern Sierra.

CONSERVATION ACREAGE GOAL (2020) 10,500 acres

Progress Through 2016
10,000 acres

Remaining
500 acres

THREATS TO ECOLOGICAL INTEGRITY OF LANDSCAPE

Fragmentation of habitat by rural residential development; degradation of habitat by unsustainable logging and grazing practices on private and public land; introduction of nonnative fish species into Independence Lake - all of these threats have largely been addressed by the success of our conservation efforts in this watershed.

LEGEND
Conserved Lands
National Forest
Private Lands
Keystone Partnership Projects
Favorite Places to Explore
Fishing
Hiking
Cross Country Skiing
SIERRA VALLEY

CONSERVATION GOAL: Work with ranchers to conserve the meadows, wetlands and uplands that support the greatest concentration and diversity of bird species in the Sierra Nevada and a remarkable range of other wildlife. Create new opportunities for the public to experience and enjoy this spectacular landscape.

THREATS TO ECOLOGICAL INTEGRITY OF LANDSCAPE
Fragmentation of habitat by rural residential development, conversion of native grasslands and brush to higher intensity agricultural uses (e.g. alfalfa), over pumping of groundwater with impacts on wetlands and other surface water resources, degradation of water quality from agricultural and urban uses.
CONSERVATION GOAL: Protect and connect the high country of the northern Sierra Nevada from Desolation Wilderness north to the Sierra Buttes. Safeguard the headwaters of the American and Yuba Rivers and facilitate wildlife movement and low impact recreational enjoyment of this once-fragmented landscape.

CONSERVATION ACREAGE GOAL (2020)
76,800 acres

Legend:
- Conserved Lands
- National Forest
- Wilderness Areas
- Private Lands
- Keystone Partnership Projects

Favorite Places to Explore:
- Hiking & Backpacking
- Horseback Riding
- Skiing

THREATS TO ECOLOGICAL INTEGRITY OF LANDSCAPE
Fragmentation of landscape by checkerboard pattern of interspersed public/private ownership, degradation of habitat by unsustainable logging practices on private and public land, degradation of water quality by roads, loss of mountain meadows to artificial reservoirs.
Increasing the Pace and Scale of Forest Restoration in the Sierra Nevada
Sierra Science Enterprise

- Prioritize and Plan at Landscape Scales
- Restoration Design
- Quantify the Benefits
Spatial Prioritization and Planning

- 26 million acres
- 1149 sub-watersheds
- 11.8 million acres forest
High Priority Watersheds

3,468,570 acres
(19% of landscape)
Restoration Design: French Meadows
French Meadows Project

Flame Length

BEFORE

AFTER
Population Density is based on census tracts weighted by night lights

- Other Infrastructure:
  - Factories
  - Freeways
  - Powerlines
  - Dams and water conveyance
  - Gas lines
  - Other built
Forest Structure Assessment

Objective: quantify and map current forest structure relative to selected metrics of ecological and social resilience and how these are likely to change under future climates and provide the structural data needed to inform fire risk, biodiversity, and timber supply assessments.

Fire Risk Assessment

Objective: characterize fire regime departure from historic regimes and predict fire behavior under current conditions and how this is likely to change with climate change using metrics relevant to “resilient” conditions.

Drought Vulnerability Assessment

Objective: identify the relative vulnerability of forests to drought stress currently and under future climates, plus provide scenarios for enhancing drought resilience through measures that change evapotranspiration, including managed wildfire, prescribed fire and mechanical treatments.

Biodiversity Assessment

Objective: quantify overall biodiversity of landscape and the diversity and distribution of focal rare wildlife, plants, and habitats and how these are likely to be affected by future climates. Develop metrics of and complete a spatial assessment of risk to biodiversity and focal species across the landscape.

Restoration Needs Assessment and Scenario Development

Objective: develop spatially explicit assessment of restoration need based on degree of departure from resilient or other reference (desired) and relative risk to resources. Use this assessment of restoration need, combined with information on constraints and realistic assumptions to develop 4-6 landscape-scale restoration scenarios.

Forest Restoration Simulations

Objective: simulate forest growth and disturbance patterns under alternative restoration scenarios and quantify landscape-scale changes in forest structure, fire regime, drought vulnerability, carbon storage and GHG emissions, biodiversity and habitat value for focal species.

Timber Supply Assessment

Objective: quantify the total timber supply by species and size class that could result from restoration and its economic value based on proposed TCSI restoration scenarios. Evaluate existing milling capacity for using this supply and estimate the need for additional capacity.
Pacific Fisheries
Pacific Fisheries
Pacific Fisheries

FISHFACE: USING TECHNOLOGY TO CHANGE THE WAY FISHERIES ARE MANAGED

The Nature Conservancy
Protecting nature. Preserving life.