Why we are doing this work.

• Create analytical tool using the best science available to…
  – Define The Trust for Public Land’s strategic vision for the next 5-10 years and inform project selection
  – Create platform for our partners in the Northern Sierra to collaborate on shared priorities
  – Maintain alignment with our partner’s and funders’ priorities for land conservation
Analysis will...

- Update Conservation Biology Institute study from 2005/2008
- Reflect conservation work completed by NSP and other partners
- Expand geography to include the Feather River Watershed and Martis Valley
- Refocus on four primary resource priorities:
  - Carbon Storage and Resilience
  - Water Resources
  - Wildlife Habitat
  - Recreation
- Consider threat of catastrophic fire and development
The Study Area
Process.

• Points of Engagement
  – Technical Advisory Committee
  – Strategic Advisory Committee
  – Directed Outreach
  – Progress Meetings and Demonstrations

• Contributors
  – Internal Resources
  – Northern Sierra Partnership Members
  – State Agencies
  – Federal Agencies
  – Subject Experts
Process.

Literature used to guide decision making in selection of criteria and best available data for each Resource Goal:

2) California DFG’s Area of Conservation Emphasis Project Report
3) California DFG’s Essential Habitat Connectivity Project
4) CBI’s Sierra Checkerboard Initiative Science Assessment Technical Appendix
5) Feather River Land Trust Protection Element Strategic Plan
6) NFWF Sierra Meadows Business Plan
7) Safeguarding California – Biodiversity, Forestry and Water section Implementation Plans
8) Safeguarding California- Reducing Climate Risk
9) Sierra CAMP’s Sierra Nevada Climate Adaptation and Mitigation Strategy
10) TNC’s Forecasting the Response of Terrestrial Habitats to Climate Change in the Northern Sierra: Climate Adaptation Strategies for the NSP
11) TNC’s Estimating the Water Supply Benefits from Forest Restoration in the Northern Sierra Nevada
12) TNC’s Conserving Natures Stage: Identifying Resilient Terrestrial Landscapes in the Pacific Northwest
13) TNC’s Sierra Blueprint (upon release in June 2016)
14) California Water Action Plan
15) California Groundwater Update
Through discussion with partners, advisors and review of the literature, individual criteria of important issues were derived for Carbon Storage and Resilience, Water Resources, Wildlife Habitat and Recreation.

For each criteria, GIS models were generated to use the best available data to reflect where the most critical areas are for land conservation to preserve that resource.

Priority areas designated using a 5 scale classification scheme, with all areas listed in the top 3 classes (Moderate, High and Very High) being considered areas to prioritize land conservation to benefit that resource.
Process.

- The criteria model results combined to create an Overall Priority result for each of the 4 Resource Goals.

- Best available data for threat of catastrophic fire and development used to identify where the priority resources are most at risk.

- The 4 Resource Goals, the individual criteria for each and the data used to generate the priorities are shown in the flow charts below
Wildlife Habitat

- Wildlife Connectivity Corridors
- Lands with a High ACE-II Biological Index Eco-regional Value
- Key Terrestrial Habitat Features

Wildlife Connectivity Corridors:
- California DFW Essential Habitat Connectivity Areas, Natural Landscape Blocks and Sierra Foothills
- CA DFW Deer Movement Locations
- USFS Corridors for Fisher, Marten and Red Fox

Lands with a High ACE-II Biological Index Eco-regional Value:
- CA DFW ACE-II Biological Index score for Sierra Nevada, Sierra Foothills and Southern Cascades Ecoregions

Key Terrestrial Habitat Features:
- Audubon Important Bird Areas
- Perennial Stream Riparian Habitat
- USFS Critical Aquatic Refuges
- USFS LEMMA GNN forest structure, late seral and old growth areas
- USFS and UC Davis Meadows
- USFWS NWI Wetlands/Fens/Springs

= Priority Resource
= Criteria
= Input data used
Water Resources

- Forested areas in watersheds important to surface drinking water
  - USGS Basin Characterization Model Spring Snowpack
  - USFS Watersheds that Contribute to Reservoirs
  - Forest Blocks inside Watersheds

- Natural Features Critical to Surface Water Quality
  - Riparian
  - Seeps and springs
  - NWI wetlands

- Areas critical to groundwater Recharge
  - USGS Basin Characterization Model Groundwater Recharge Values
  - UC Davis Soil Agricultural Groundwater Banking Index
  - USFS and UC Davis meadows

= Priority Resource
= Criteria
= Input data used
Carbon Storage and Resilience

**Terrestrial Landscape Resilience**
- TNC Conserving Nature’s Stage: Identifying Resilient Terrestrial Landscapes

**Features Critical to Climate Change Adaptation**
- TNC Cold Air Drainages, Seeps, Springs, Riparian Corridors

**Above and Below Ground Carbon Storage**
- Above and Below Ground Carbon Stores
  - USDA Carbon Storage Estimates

**Features with High Underground Carbon Storage**
- Or
  - USFS and UC Davis Meadows data
  - USFWS NWI
  - NRCS Carbon storing Soils

= Priority Resource
= Criteria
= Input data used
Recreation

Primary and Local Trail Networks
- Trailheads Inc.

Wild and Scenic Rivers and Byways
- USFS National Wild and Scenic Rivers
- National Scenic Byways Program

Iconic Places
- Digitized areas based on list derived by The Trust for Public Land and Feather River Land Trust

Priority Resource = Criteria
Input data used
Catastrophic Wildfire Threat

High Fire Hazard Severity Zone

California Dept. of Forestry and Fire Protection High Fire Hazard Zones

= Resource Threat

= Criteria

= Input data used
Exurban Development Threat

Spatially Explicit Growth Model (SERGom) created by Dave Theobald, Projected Housing Density 2050

= Resource Threat

= Criteria

= Input data used
The 4 Resource Priority results layers combined to create an Overall Land Conservation Priority layer where multiple benefits across all resources can be expected.
Threatened Land Conservation Priorities

Combined Overall Land Conservation Priorities
- Recreation
- Carbon Storage and Resilience
- Water Resources
- Wildlife Habitat

AND

Combined Threats
- Catastrophic Fire Threat
- Development Threat
For more information

- For more information about how these priority layers were created, view the data description table on the project website:
  
  https://web.tplgis.org/sierra_plan/

- Please contact Markley Bavinger with any questions about this project: Markley.Bavinger@tpl.org