



Nature's Benefits from Your National Forests

The mission of the USDA Forest Service is to sustain the health, diversity, and productivity of the Nation's forests and grasslands to meet the needs of present and future generations.

The Agency's 154 national forests and 20 grasslands engage in quality land management that offers multi-use opportunities to meet the diverse needs of people. Forest ecosystems are human, plant, and animal life-support systems that provide a suite of goods and services vital to human health and

livelihood—essentially Nature's Benefits, also called Ecosystem Services. Benefits from healthy forest ecosystems include: water supply, filtration and regulation (flood control); habitat for native wildlife and plants; carbon sequestration; jobs, commerce, and value to local economies; recreational opportunities and open space for communities; increased physical and psychological wellness; cultural heritage; wood and other non-timber forest products; energy; clean air; and pollination.

Do You Know Which Nature's Benefits Come from the National Forest?

Water: In drought-prone California, the quantity, quality, and timely provision of our water is dependent on the health of our national forests. The forests supply, filter, and regulate water from upper watersheds and meadows, providing clean water throughout the year to communities, homes, and wildland habitats. Water also helps support jobs and industries that are water-dependent.



- About 2.5 million acre-feet of water per year come from the Tahoe National Forest¹

That equates to:

- Over 1.2 million Olympic-size swimming pools
- Enough drinking water for California's population for more than 72 years², or
- Enough water for almost 6.4 million households for a year³

How much is 846 billion gallons worth?

- Estimated wholesale market value: over \$244 million⁴
- To Los Angeles households: over \$27.8 billion⁵

• Or over 846 billion gallons per year

SOURCES

¹Brown et al., 2016- Mean annual renewable water supply of the Contiguous United States. <https://www.fs.fed.us/rmrs/documents-and-media/really-mean-annual-renewable-water-supply-contiguous-united-states>

²Per the National Health and Nutrition Examination Surveys, the average American consumes ~299 gallons/year of water, through both drink and food ³Assuming 362 gallons/day - <http://www.irwd.com/images/pdf/save-water/CaSingleFamilyWaterUseEfficiencyStudyJune2011.pdf>

⁴Using CA water market prices, appropriated by sector - https://www.fs.fed.us/rm/value/docs/marginal_economic_value_streamflow_forests.pdf

⁵100 gallons/day + monthly water bill of ~\$100.14 - <http://www.circleofblue.org/waterpricing/>

Carbon: The National Forests of California play an important role in parts of the climate cycle; acting as carbon storage and sequestration units. Forests retain carbon from being emitted to, and absorb carbon dioxide (CO₂) from, the atmosphere, which helps reduce the impacts of a warming climate to human, plant and animal habitats.



- The Tahoe National Forest stores about 95.65 Million Metric Tons (MMT) of Carbon in its forest⁶
- Sequesters on average .33 MMTC annually; this equates to enough to drive around the earth 119,296 times.

Local Economies: The economy of California is fifth largest in the world, and California's National Forests contribute almost \$2.6 billion annually in wages and income to small businesses,⁷ a critical component of the rural economy of the state.



The Tahoe National Forest supports:

- About \$89.6 million annually in labor income for wage earners and local businesses⁸
 - Including food and lodging services, arts, entertainment and recreation, real estate, rental and leasing, and retail trade services.
- About 2,000 jobs annually⁹

Recreation: The Tahoe National Forest provides a place for people to find open space, experience wildlife, recreate, relax, and otherwise remove themselves from the stressors of everyday life and urban sprawl.



Many methods exist to calculate the benefits from recreation and the value of those benefits to visitors and local economies. The following provide some estimations of those values:

- Over 1.6 million people visit the Tahoe National Forest to recreate annually, which represents an economic value of over \$132 million to those visitors¹⁰
- Visitors to the Tahoe National Forest spend about \$94 million during their trip¹¹
- Visitors to the Tahoe National Forest contribute more than \$40 million towards wages and income of local businesses¹²

The Tahoe National Forest landscape includes diverse recreation opportunities such as water recreation (fishing, swimming, and rafting) as well as camping, picnicking, and green space for activities that support human wellness and cultural traditions.¹³

- 1,354 lakes and ponds
- 3,101 miles of rivers and streams
- 2,415 miles of trails

SOURCES

⁶<https://bofdata.fire.ca.gov/projects-and-programs/ab-1504/>

^{7, 8, 9}Job and Income Contributions for 2014-At A Glance-Region, <https://www.fs.fed.us/emc/economics/contributions/at-a-glance.shtml> ¹⁰NVUM, R5 Calculations based on GTR-957 – Rosenburger et al., 2017 - <https://www.fs.usda.gov/treesearch/pubs/54602>

¹¹R5 Calculations based on GTR-961 – White, 2017- https://www.fs.fed.us/pnw/pubs/pnw_gtr961.pdf

¹²<https://www.fs.fed.us/emc/economics/contributions/at-a-glance.shtml>

¹³Enterprise Data Warehouse

- 25,214 acres of wilderness
- 35 miles of Wild and Scenic Rivers
- 73 developed campgrounds
- 19 developed picnic areas

People visit their National Forests to engage in specific activities that provide value to them from their experiences as shown below:

- Over 486,000 people visit the Tahoe National Forest annually to engage in snow sports as their main activity, which represents an economic value of over \$37 million to those visitors.¹⁴
- Over 346,000 people visit the Tahoe National Forest annually to hike and walk as their main activity, which represents an economic value of over \$29 million to those visitors.¹⁵
- Over 147,000 visit the Tahoe National Forest annually to view wildlife and natural features as their main activity, which represent an economic value over \$9.4 million to those visitors.¹⁶

Habitat: Forest Habitats and Biodiversity are key to ecological function; a forest's daily function in turn allows all of Nature's Benefits, from water to recreation, to continue to be provided for humans to enjoy.



The Tahoe National Forest hosts a multitude of key habitats for animals and plants.

- 7 Threatened and Endangered Species can be found on the Tahoe National Forest that include: Sierra Nevada yellow-legged frog, North American wolverine, Lahontan cutthroat trout, Stebbins' morning-glory, Webber's Ivesia.¹⁷
- 597 meadows¹⁸

Energy: The Tahoe National Forest energy infrastructure provides power generation for public benefit and includes



- Installed hydro plant capacity of approximately 568 megawatts, which could meet the power needs of more than 426,300 households¹⁹
- Estimated annual solar electricity output is 259 kilowatt hours, enabling greater use of federal taxpayer funds to go towards forest restoration²⁰

SOURCES

^{14, 15}R5 Calculations based on GTR-957 – Rosenburger et al., 2017 - <https://www.fs.usda.gov/treesearch/pubs/54602>

¹⁶R5 Calculations based on GTR-957 – Rosenburger et al., 2017 - <https://www.fs.usda.gov/treesearch/pubs/54602>

¹⁷Master R5 TE Species List 20191016; <https://ecos.fws.gov/ipac/>

¹⁸UC Davis, Center for Watershed Sciences & USDA Forest Service, Pacific Southwest Region, 2017. Sierra Nevada Multi-Source Meadow Polygons Compilation (v 2.0), Vallejo, CA, Regional Office: USDA Forest Service. 2017. <http://meadows.ucdavis.edu/>

¹⁹June 2016 R5 Inventory of FERC Licensed Hydropower projects

202015 Forest Service Energy & Sustainability Reporting; Southern California ESPC ENABLE Project Final Proposal; Federal Aggregated Solar Procurement Project



Nature's Benefits

Tahoe National Forest

(Continued)

Timber & Wood Products: Wood harvested from California's National Forests support forest health, jobs, and provide products for everyday use.



On average for Fiscal Years 2017, 2018 & 2019, the Tahoe National Forest:

- Sold about 24,948 thousand board feet (MBF) of Timber,²¹ and
- Cut approximately 28,224 MBF of Timber, annually²²

This cut timber has an estimated value of over \$11 million²³ and:

- Produced about 18,700 MBF of lumber, and is
 - Worth about \$7.3 million

- Produced over 35,000 bone dry tons of wood for biomass energy, or
 - Enough to power over 5,083 homes for the year, and is
 - Worth almost \$4 million
- Produced over 3,319 tons of landscaping material, and is
 - Worth over \$33,191
- In addition, the Tahoe National Forest:
 - Sold over 4,200 cords of firewood, worth over \$23,000
 - Sold 1,674 Christmas trees, worth over \$14,009

SOURCES

²¹PTSAR Reports: <https://www.fs.fed.us/forestmanagement/products/ptsar/index.shtml>

²²Cut/Sold reports: <https://www.fs.fed.us/forestmanagement/products/cut-sold/index.shtml>

²³R5 analysis based on cut-sold report and McIver et al., 2015 - https://www.fs.fed.us/pnw/pubs/pnw_gtr908.pdf