



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 Inyo 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 1.4 million acre-feet of water per year come from the Inyo National Forest¹
 - Or over 464 billion gallons per year

That equates to:

- Over 700,000 Olympic-size swimming pools

- Enough drinking water for California's population for more than 39 years², or
- Enough water for over 3.5 million households for a year³

How much is 464 billion gallons worth?

- Estimated wholesale market value: over \$134 million⁴
- To Los Angeles households: over \$15.3 billion⁵

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.



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

³ Assuming 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/>

- The Inyo National Forest stores about 32 Million Metric Tons (MMT) of Carbon in its forest⁶

That equates to:

- Over 117.6 MMT of CO₂ equivalent, or
- Equivalent emissions of driving around the Earth more than 11.5 million times

Local Economies: The economy of California is fifth largest in the world, and California's National Forests contribute almost \$2 billion annually in wages and income to small businesses,⁷ a critical component of the rural economy of the state.



The Inyo National Forest supports:

- About \$115.3 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 3,300 jobs annually⁹

Recreation: The Inyo 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 2,530,000 people visit the Inyo National Forest to recreate annually, which represents an economic value of over \$199 million to those visitors¹⁰
- Visitors to the Inyo National Forest spend about \$439 million during their trips¹¹
- Visitors to the Inyo National Forest contribute more than \$86.3 million towards wages and income of local small businesses¹²

The Inyo 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

- 1,850 lakes and ponds
- 2,374 miles of rivers and streams
- 2,234 miles of trails
- 967,039 acres of wilderness
- 242 miles of Wild and Scenic Rivers
- 76 developed campgrounds
- 20 developed picnic areas

SOURCES

⁶10 year average, 2004-13 - <https://www.fs.fed.us/climatechange/documents/PacificSouthwestRegionCarbonAssessment.pdf>

^{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>

¹⁰R5 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

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

- Over 317,000 people visit the Inyo National Forest annually to walk and hike as their main activity, which represents an economic value of over \$27 million to those visitors.¹⁴
- Over 1 million people visit the Inyo National Forest annually to engage in snow sports as their main activity, which represents an economic value of over \$82 million to those visitors.¹⁵
- Over 580,000 people visit the Inyo National Forest annually to view wildlife and natural features as their main activity, which represents an economic value of over \$37 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 Inyo National Forest hosts a multitude of key habitats for animals.

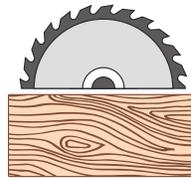
- 7 Threatened and Endangered Species can be found on the Inyo National Forest that include: Owens tui chub, Paiute cutthroat trout, Lahontan cutthroat trout, Sierra and Mountain Nevada yellow-legged frogs.¹⁷
- 1,581 meadows¹⁸

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



- Installed hydro plant capacity of approximately 64 megawatts, which could meet the power needs of more than 48,500 households¹⁹
- Estimated annual solar electricity output is 46,962 kilowatt hours, enabling greater use of federal taxpayer funds to go towards forest restoration²⁰

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



In Fiscal Year 2017, the Inyo National Forest:

- Sold about 1,865 thousand board feet (MBF) of Timber,²¹ and
- Cut approximately 2,165 MBF of Timber²²

In addition, the Inyo National Forest:

- Sold about 8,100 cords of firewood, worth over \$64,000

SOURCES

^{14, 15, 16}R5 Calculations based on GTR-957 - Rosenburger et al., 2017 - <https://www.fs.usda.gov/treearch/pubs/54602>

¹⁷Master R5 TE Species List 20170203; <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

²¹2017 PTSAR Reports: <https://www.fs.fed.us/forestmanagement/products/ptsar/index.shtml>

²²2017 Cut/Sold reports: <https://www.fs.fed.us/forestmanagement/products/cut-sold/index.shtml>