



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 Mendocino 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 2.6 million acre-feet of water per year come from the Mendocino National Forest¹
- Or over 847 billion gallons per year

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 over 6.4 million households for a year³

How much is 847 billion gallons worth?

- Estimated wholesale market value: over \$245 million⁴
- Cost to Los Angeles households: over \$27.9 billion⁵

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/>





Nature's Benefits

Mendocino National Forest

(Continued)

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 Mendocino National Forest stores about 83.90 Million Metric Tons (MMT) of Carbon in its forest⁶
- Sequesters on average 0.10 MMTC annually; this equates to enough to drive around the earth 35,434 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 Mendocino National Forest supports:

- About \$25.8 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 530 jobs annually⁹

Recreation: The Mendocino 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 274,000 people visit the Mendocino National Forest to recreate annually, which represents an economic value of over \$21 million to those visitors¹⁰
- Visitors to the Mendocino National Forest spend about \$9.6 million during their trips¹¹
- Visitors to the Mendocino National Forest contribute more than \$3.1 million towards wages and income of local businesses¹²

The Mendocino 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

- 210 lakes and ponds
- 3,683 miles of rivers and streams
- 730 miles of trails
- 233,704 acres of wilderness
- 103 miles of Wild and Scenic Rivers

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 (FY2018), R5 Calculations based on GTR-957 – Rosenburger et al., 2017 - <https://www.fs.usda.gov/treearch/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

- 34 developed campgrounds
- 5 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 32,000 people visit the Mendocino National Forest annually to engage in motorized trail and OHV activities as their main activity, which represents an economic value of over \$1.7 million to those visitors.¹⁴
- Over 27,000 people visit the Mendocino National Forest annually to view wildlife and natural features as their main activity, which represents an economic value of over \$1.7 million to those visitors.¹⁵
- Over 77,000 people visit the Mendocino National Forest annually to walk and hike as their main activity, which represents an economic value of more than \$6.6 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 Mendocino National Forest hosts a multitude of key habitats for animals and plants.

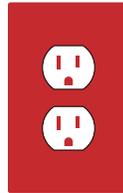
- 14 Threatened and Endangered Species can be found on the Mendocino National

SOURCES

¹⁴, ¹⁵, ¹⁶R5 Calculations based on GTR-957 – Rosenburger et al., 2017 - <https://www.fs.usdagov/treesearch/pubs/54602>
¹⁷Master R5 TE Species List 20191016; <https://ecos.fws.gov/ipac/>
¹⁸June 2016 R5 Inventory of FERC Licensed Hydropower projects
¹⁹PTSAR Reports: <https://www.fs.fed.us/forestmanagement/products/ptsar/index.shtml> ²⁰Cut/Sold reports: <https://www.fs.fed.us/forestmanagement/products/cut-sold/index.shtml>
²¹R5 analysis based on cut-sold report and McIver et al., 2015 - https://www.fs.fed.us/pnw/pubs/pnw_gtr908.pdf

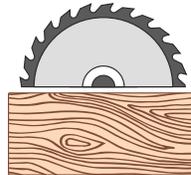
Forest that include: Winter-run Chinook salmon, red-legged frog, Northern spotted owl, water howellia, fisher, Southern Oregon/Northern California coho salmon.¹⁷

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



- Installed hydro plant capacity of approximately 9 megawatts, which could meet the power needs of more than 7,500 households¹⁸

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 Eldorado National Forest:

- Sold about 4,220 thousand board feet (MBF) of Timber, and¹⁹
- Cut approximately 2,500 (MBF) of Timber, annually²⁰

This cut timber has an estimated value of over \$865,000²¹ and:

- Produced about 1,500 (MBF) of lumber, and
 - Worth about \$600,000
- Produced over 1,900 bone dry tons of wood for biomass energy, that is
 - Worth over \$216,000
- Landscaping material worth over \$2,700
- In addition, the Mendocino National Forest:

- Sold about 2,200 cords of firewood, worth over \$6,000
- Sold 3,600 Christmas trees, worth over \$33,000