



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 Eldorado 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 1.6 million acre-feet of water per year come from the Eldorado National Forest¹
 - Or over 527 billion gallons per year

That equates to:

- Over 790,000 Olympic-size swimming pools
- Enough drinking water for California's population for more than 45 years², or
- Enough water for almost 4 million households for a year³

How much is 527 billion gallons worth?

- Estimated wholesale water market value: over \$152 million⁴
- Cost to Los Angeles households: over \$17.3 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-sup-ply-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

⁵5100 gallons/day + monthly water bill of ~\$100.14 - <http://www.circleofblue.org/waterpricing/>



Nature's Benefits

Eldorado 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 Eldorado National Forest stores about 80.5 Million Metric Tons (MMT) of Carbon in its forests, and ⁶
- Sequesters on average .17 MMTC annually; this equates to enough to drive around the earth 62,896 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 Eldorado National Forest supports:

- About \$108 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 2,400 jobs annually⁹

Recreation: The Eldorado 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 1.2 million people visit the Eldorado National Forest to recreate annually, which represents an economic value of over \$99 million to those visitors¹⁰
- Visitors to the Eldorado National Forest spend about \$62 million during their trips¹¹
- Visitors to the Eldorado National Forest contribute more than \$36 million towards wages and income of local businesses¹²

The Eldorado 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

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



Nature's Benefits

Eldorado National Forest

(Continued)

- 903 lakes and ponds
- 2,260 miles of rivers and streams
- 1,369 miles of trails
- 103,463 acres of wilderness
- 40 developed campgrounds
- 14 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 54,000 people visit the Eldorado National Forest annually to camp or backpack as their main activity, which represents an economic value of over \$4.3 million to those visitors.¹⁴
- Over 478,000 people visit the Eldorado National Forest annually to engage in snow sports as their main activity, which represents an economic value of over \$39 million to those visitors.¹⁵
- Over 225,000 people visit the Eldorado National Forest annually to walk and hike as their main activity, which represents an economic value of over \$19 million to those visitors.¹⁶
- Over 81,000 people visit the Eldorado National Forest annually to hunt and fish as their main activity, which represents an economic value of over \$7 million to those visitors.¹⁷

Habitat: The Eldorado National Forest hosts a multitude of key habitats for animals and plants.



- 7 Threatened and Endangered Species can be found on the Eldorado

National Forest that include: California red-legged frog, fisher, Yosemite toad, Layne's butterweed.¹⁸

- 1,407 meadows¹⁹

Reforestation/Seeds: The Placerville Nursery and Seed Bank grows an average of over 4 million seedlings for reforestation on public and private lands.



- It contains approximately \$15 million of seed for future reforestation needs.

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

SOURCES

^{14, 15, 16, 17}R5 Calculations based on GTR-957 – Rosenburger et al., 2017 - <https://www.fs.usda.gov/treesearch/pubs/54602>

¹⁸Master R5 TE Species List 20191016; <https://ecos.fws.gov/ipac/>

¹⁹UC 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/>



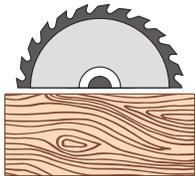
Nature's Benefits

Eldorado National Forest

(Continued)

- Installed hydro plant capacity of approximately 1,101 megawatt, which could meet the power needs of more than 826,500 households²⁰

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 41,062 thousand board feet (MBF) of Timber,²¹ and
- Cut approximately 44,536 MBF of Timber, annually²²

This cut timber has an estimated value of over \$18 million,²³ and:

- Produced about 33,400 MBF of lumber, and is
 - Worth about \$13.1 million
- Produced over 44,000 bone dry tons of wood for biomass energy, or
 - Enough to power over 6,000 homes for the year, and is
 - Worth almost \$5 million
- Produced over 5,924 tons of landscaping material, and is
 - Worth over \$59,238
- In addition, the Eldorado National Forest:
 - Sold about 9,207 cords of firewood, worth over \$27,000
 - Sold 4,687 Christmas trees, worth over \$44,642

SOURCES

²⁰June 2016 R5 Inventory of FERC Licensed Hydropower projects

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