



## 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 Klamath 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 3 million acre-feet of water per year come from the Klamath National Forest<sup>1</sup>
  - Or about 995 billion gallons per year

*That equates to:*

- Over 1.5 million Olympic-size swimming pools
- Enough drinking water for California's population for more than 84 years<sup>2</sup>, or
- Enough water for over 7.5 million households for a year<sup>3</sup>

*How much is 995 billion gallons worth?*

- Estimated wholesale market value: over \$288 million<sup>4</sup>
- Cost to Los Angeles households: over \$32.7 billion<sup>5</sup>

#### SOURCES

<sup>1</sup>Brown 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>

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

<sup>4</sup>Using CA water market prices, appropriated by sector - [https://www.fs.fed.us/rm/value/docs/marginal\\_economic\\_value\\_streamflow\\_forests.pdf](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 (CO<sub>2</sub>) from, the atmosphere, which helps reduce the impacts of a warming climate to human, plant and animal habitats.

- The Klamath National Forest stores about 156.7 Million Metric Tons (MMT) of Carbon in its forests, and <sup>6</sup>
- Sequesters on average .01 MMTC annually; this equates to enough to drive around the earth 4,134 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,<sup>7</sup> a critical component of the rural economy of the state.



*The Klamath National Forest supports:*

- About \$101 million annually in labor income for wage earners and local businesses<sup>8</sup>
  - Including food and lodging services, arts, entertainment and recreation, real estate, rental and leasing, and retail trade services.
- About 1,900 jobs annually<sup>9</sup>

**Recreation:** The Klamath 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 132,444 people visit the Klamath National Forest to recreate annually, which represents an economic value of over \$10.4 million to them<sup>10</sup>
- Visitors to the Klamath National Forest spend about \$5.2 million during their trips<sup>11</sup>
- Visitors to the Klamath National Forest contribute more than \$1.8 million towards wages and income of local businesses<sup>12</sup>

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

- 637 lakes and ponds
- 6,834 miles of rivers and streams
- 1,160 miles of trails
- 330,507 acres of wilderness

**SOURCES**

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

<sup>7, 8, 9</sup> Job and Income Contributions for 2014-At A Glance-Region, <https://www.fs.fed.us/emc/economics/contributions/at-a-glance.shtml>

<sup>10</sup>NVUM (FY2018), R5 Calculations based on GTR-957 – Rosenburger et al., 2017 - <https://www.fs.usda.gov/treesearch/pubs/54602>

<sup>11</sup>R5 Calculations based on GTR-961 – White, 2017- [https://www.fs.fed.us/pnw/pubs/pnw\\_gtr961.pdf](https://www.fs.fed.us/pnw/pubs/pnw_gtr961.pdf)

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

<sup>13</sup>Enterprise Data Warehouse



# Nature's Benefits

## Klamath National Forest

(Continued)

- 23 developed campgrounds
- 4 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 5,000 people visit the Klamath National Forest annually to hunt and fish as their main activities, which represents an economic value of over \$500,000 to those visitors.<sup>14</sup>
- Over 29,000 people visit the Klamath National Forest annually to hike and walk as their main activity, which represents an economic value of over \$2.5 million to those visitors.<sup>15</sup>
- Over 8,500 people visit the Klamath National Forest annually to view wildlife and natural features as their main activity, which represents an economic value of over \$550,000 to those visitors.<sup>16</sup>

**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 Klamath National Forest hosts a multitude of key habitats for animals and plants.

- 8 Threatened and Endangered Species can be found on the Klamath National Forest that include: Southern Oregon/Northern

California coho salmon, marbled murrelet, Northern spotted owl, gray wolf, Yreka phlox, fisher.<sup>17</sup>

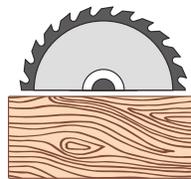
- 618 meadows<sup>18</sup>

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



- Installed hydro plant capacity of approximately 151 megawatts, which could meet the power needs of more than 113,300 households<sup>19</sup>

**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 Klamath National Forest:

- Sold about 36,185 thousand board feet (MBF) of Timber, and<sup>20</sup>
- Cut approximately 25,390 MBF of Timber, annually<sup>21</sup>

This cut timber has an estimated value of about \$8.5 million<sup>22</sup> and:

- Produced about 14,000 MBF of lumber, and is
  - Worth about \$5.7 million

### SOURCES

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

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

<sup>18</sup>UC 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/>

<sup>19</sup>June 2016 R5 Inventory of FERC Licensed Hydropower projects

<sup>20</sup>PTSAR Reports: <https://www.fs.fed.us/forestmanagement/products/ptsar/index.shtml>

<sup>21</sup>Cut/Sold reports: <https://www.fs.fed.us/forestmanagement/products/cut-sold/index.shtml>

<sup>22</sup>R5 analysis based on cut-sold report and McIver et al., 2015 - [https://www.fs.fed.us/pnw/pubs/pnw\\_gtr908.pdf](https://www.fs.fed.us/pnw/pubs/pnw_gtr908.pdf)



# Nature's Benefits

Klamath  
National Forest

(Continued)

- Produced over 26,000 bone dry tons of wood for biomass energy, or
  - Enough to power over 3,700 homes for the year, and is
  - Worth almost \$3 million
- Produced over 2,600 tons of landscaping material, and is
  - Worth over \$26,000
- In addition, the Klamath National Forest:
  - Sold about 17,000 cords of firewood, worth over \$35,065
  - Sold 1,700 Christmas trees, worth over \$17,000

## DID YOU KNOW?

- The Butte Valley National Grassland's 18,245 acres, which received official grassland status in 1991, is located on the Klamath National Forest, and is the only National Grassland in California, and the 20th in the nation. It is used by local ranchers for grazing cattle, and for hunting and recreation such as camping.
- Partnerships and volunteers increase the Klamath National Forest's stewardship capacity by connecting people within communities and meeting natural resource goals. The Klamath National Forest has formed many key partnerships with local fire safe councils, landowners, non-profit organizations and citizens to deliver benefits to the public and community of Yreka.
- The Forest's partnership with the Yreka Area Fire Safe Council (FSC) on the Craggy Vegetative management project, will protect and benefit the city of Yreka and the small community of Hawkinsville from catastrophic wildfire upon completion. The Yreka Area FSC has also committed to treating private lands adjacent to the public lands in the project, further strengthening the area against wildfire.