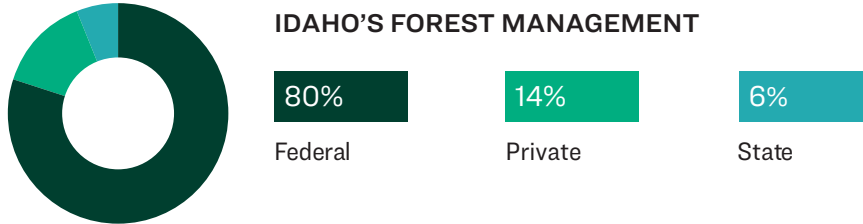


Idaho Climate-Economy Impacts Assessment

Snapshot: Forests

Forests, Climate, and Idaho's Economy

Forests cover over 40% of Idaho's land, and provide multiple uses, including timber, recreation, wildlife habitat, and carbon capture. The benefits Idaho's forests provide are impacted by Idaho's climate.



Changes in climate lead to forest disturbances, such as wildfires and insect and pathogen outbreaks. In recent decades, wildfires and bark beetle outbreaks have killed millions of acres of trees across Idaho's forests. These disturbances are expected to increase with climate change, presenting risks to Idaho's forest-based economy.

Changes in climate	Increasing hazards	Economic risks
Increasing temperatures	Increasing temperatures	Increasing cost of wildfire suppression
Increasing spring precipitation	Increasing spring precipitation	Increasing cost of planting trees
Increasing rain-on-snow events	Increasing rain-on-snow events	Growing number of temporary closure areas
Increasing peak streamflow	Species movement to higher elevations	Increasing loss of homes and communities
Decreasing summer precipitation	Changing species composition	Decreasing ability to secure residential and business insurance
Decreasing summer soil moisture	Changing tree species growth	

Forests Play an Important Role in Idaho's Climate and Economy



Carbon capture

Idaho has substantial amounts of carbon captured in forests. Tree growth removes carbon from the atmosphere, and traps a portion in stems, branches, leaves, and roots.



Recreation

Forests offer outdoor recreational opportunities. These activities generate jobs, revenue, and income that support state and local communities. Recreation in Idaho accounts for 37,000 direct jobs, and adds \$2.5 billion to the economy. In 2016, for example, the recreational fishery in the Big Wood River Valley contributed \$2.5 million to Blaine County's economy.



Timber

For Idaho's rural economy, timber harvest is a vital source of jobs. Timber harvest provides income and revenue associated with growing, harvesting, hauling, and processing at 88 primary forest products facilities across the state. In 2019, the forest industry supported direct and indirect employment of 31,414 people, and contributed \$2.4 billion to Idaho's Gross Domestic Product (GDP).



Wildlife habitat

Forests provide habitat, food, and cover for plant and animal species. These species support fishing and hunting industries, as well as supply subsistence resources for local and tribal communities.

Preparing Idaho for Impacts to Forests

Increasing temperatures, fluctuating precipitation, and decreasing soil moisture add stress to Idaho’s forests, resulting in the following increasing forest disturbances.

Wildfires

Climate change will increase the length of fire seasons, the number of fires, and the intensity of those fires. This leads to reduced forest recovery, as fires may burn the same forest more than once. Warming temperatures and decreasing moisture will continue to reduce seedling survival in some forest types, leading to lower elevation forests replaced by grasslands.

Idaho’s funding for wildfire suppression varies substantially, depending on fire activity. In 2014, wildfire suppression cost Idaho \$30 million, and in 2015, \$60 million. Suppression cost is expected to increase greatly through 2100.

Insects and pathogen outbreaks

Bark beetles cause widespread tree destruction. During 1997-2012, more than 2 million acres (~7%) of trees in Idaho’s forests were killed due to bark beetles. Warming is expected to increase conditions that encourage insect and pathogen outbreaks, resulting in enhanced stress on trees, which leads to increased tree mortality.

Drought

Severe drought reduces tree growth, and has the potential to cause widespread tree death, often occurring with other forest disturbances, such as wildfires. The time ecosystems need to recover from drought has increased in recent decades, and with expected increases in drought frequency, Idaho’s forests will be challenged to maintain existing levels of tree growth.

Economic Opportunity: Carbon Storage

Carbon captured in forests provides both climate and economic benefits. Opportunities to use Idaho forests for climate mitigation include:

- Maintaining forest landscapes, both working and non-working forests;
- Lengthening time between harvests;
- Expanding forested areas; and
- Enhancing the carbon sequestered in forests.

Additionally, by using forests as a source of climate mitigation, Idaho forest managers can earn income by participating in state and regional carbon markets.

Opportunities for Adaptation: Reducing Forest Stress

Enhancing a forest’s ability to absorb climate change-related stress may be possible through minimizing other stressors. A few examples of methods to reduce forest stress include:

- Thinning and prescribed burning to reduce wildfire extent and severity, and limit wildfire spread into non-forest ecosystems.
- Assisted migration, the planting of species in locations whose future climate is more suitable, is an option for long-term adaptation.
- Facilitating establishment of new tree species better suited to a location after a severe wildfire or drought.

Interested in learning more about economic impacts and Idaho’s forests?

For further information, resources, tools, references, and additional reports, please visit www.uidaho.edu/iceia



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