

Climate Change and National Forest Infrastructure



An overview of impacts and recommendations for resiliency

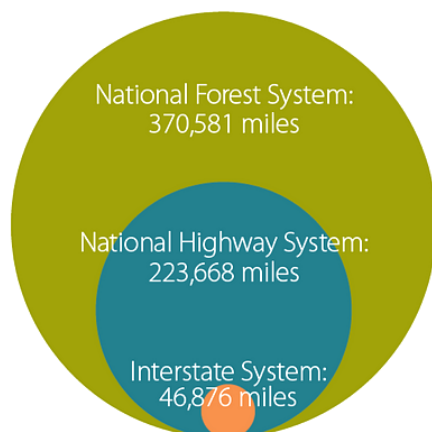
Background

The U.S. Forest Service:

- manages 9% of the total land area in the U.S.;
- supplies 20% of the nation's fresh water;
- provides habitat for 32% of the threatened or endangered species; and
- contributes \$13.6 billion to the GDP from recreation.

Yet all of this is negatively impacted by a deteriorating infrastructure jumble of roads, bridges, and culverts built in another era. Today, with over 370,000 miles of roads and a budget that leaves 90% of the roads unmaintained, the Forest Service is facing a severe crisis that is exponentially worsened due to climate change.

MILES OF ROADS



Climate Change Impacts

Changing temperatures affect water volume, timing and impacts:

- More runoff in winter months and early spring at warmer locations. And in late spring and early summer at colder locations.
- Peakflows and midwinter flooding will be higher and more frequent.

Old and outdated roads, bridges, culverts and trails are at considerable risk of damage:

- Access will be disrupted as roads wash-out due to blown-out culverts.
- Public safety will be compromised due to increased landslides, flooding, or erosion of water-logged slopes.
- Repair costs and damage will increase, which will have a profound impact on access to federal lands.

Forests, wildlife and fish are at risk to climate change because they are less resilient.

- Roads fragment habitat, reducing the ability of many species to move, shift, and adapt.



photo credit: WildEarth Guardians

Ensure our national forests and waters are more resilient in a changing climate.

Recommendations for Resiliency

Expand wildlife migration corridors and increase the adaptability of wildlife to changing climate conditions by removing or storing roads in key corridors.

- Restoring landscape connectivity and corridors by removing barriers will increase resiliency as animals migrate or shift their home ranges.

Improve water quality and fish habitat by decommissioning unneeded roads and fixing key access roads.

- Reducing the amount of road-generated fine sediment deposited on salmonid nests can increase the likelihood of egg survival and spawning success.

Provide higher quality water and protect rare, species-rich vegetation communities by expanding roadless areas through road removal.

For additional details and references see our report: <https://guardiansaction.org/roads-lit-review>

Protect access to public lands by replacing culverts, prioritizing maintenance and stormproofing key access roads, while eliminating surplus roads.

- Installing larger culverts and doing targeted maintenance reduces risk of road blow-outs, bridge failures, road-triggered landslides or other hazards.

Strengthen forests and reduce habitat fragmentation by decommissioning unneeded roads.

- Reconnecting fragmented forests benefits native species and restores wildlife habitat by providing security and food such as grasses, forbs, and fruiting shrubs.

Promote carbon sequestration by decompacting road beds and restoring soils.

- Effectively treating roads to more rapidly develop vegetation and soils will sequester large amounts of carbon.

Increase the removal of atmospheric carbon by expanding roadless areas and intact mature forests.



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