**US Forest Service Vulnerability Assessments**

*Compiled by Office of Sustainability and Climate Change (w/ input from R/S/A Climate Change Coordinators)*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Region | Name | Location | Resources | Report |
| R-1 | Northern Rockies Adaptation Partnership  | Idaho Panhandle, Kootenai, Nez Perce-Clearwater, Glacier, Beaverhead-Deerlodge, Custer, Gallatin, Helena, Lewis and Clark, Bitterroot, Flathead, Lolo, Custer, Bridger Teton, Caribou-Targhee, and Shoshone National Forests, Dakota Prairie National GrasslandAlso: Grand Teton National Park, Yellowstone National Park, Glacier National Park | * Hydrology
* Fisheries
* Wildlife
* Recreation
* Forest vegetation
* Non-forest vegetation
* Disturbance
* Ecosystem services
 | Draft GTR is process.Website: <http://adaptationpartners.org/nrap/index.php>  |
| R-1 | Nez Perce-Clearwater National Forests | Nez Perce and Clearwater National Forests | * Forested vegetation
* Non-forested vegetation
* Aquatic systems
* Terrestrial species
* Freshwater species
* Ecosystem services
* Cultural resources
* Recreation
 | Vulnerability Assessment (natural resources):<http://ecoadapt.org/data/documents/EcoAdapt_NPCWNF_VulnerabilityAssessment_v3_4Dec2014_smallres.pdf>Vulnerability Assessment (socioeconomic):<http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprd3804265.pdf> Adaptation Report:<http://ecoadapt.org/data/documents/NPCWAdaptationWorkshopReport_Final_14Apr2015.pdf>  |
| R-1 | Watershed Vulnerability Assessment Lolo National Forest | All lands in Lolo National Forest | * Infrastructure
* Hydrology
* Infrastructure
 | In review for publication |
| R-1 | A Climate Change Vulnerability Assessment for Resources of Nez Perce-Clearwater National Forests | Nez Perce-Clearwater National Forests | * Aquatic systems
* Vegetation
* Wildlife
 | <http://ecoadapt.org/data/documents/EcoAdapt_NPCWNF_VulnerabilityAssessment_v3_4Dec2014_smallres.pdf>Conducted by EcoAdapt in partnership with the forest plan revision Team |
| R-1 | Kootenai Idaho Panhandle Zone Climate Change Report | Kootenai and Idaho Panhandle National Forest | * Aquatic Systems
* Vegetation
* Ecosystem services
* Disturbance
* Wildlife
* Special Areas
* Socio-economic
 | <http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5345936.pdf> |
| R-2 | San Juan/Tres Rios Climate Change Ecosystem Vulnerability Assessment | San Juan National Forest  | * Terrestrial ecosystems
* Riparian ecosystems
* Special species and habitats
 | Contact Trey Schillie to obtain a copy of the assessment – tschillie@fs.fed.us.  |
| R-2 | Climate Change on the Shoshone National Forest, Wyoming | Shoshone National Forest  | * Terrestrial and aquatic ecosystems
* Hydrology
* Disturbance
* Fisheries
* Wildlife
 | Contact Trey Schillie to obtain a copy of the assessment – tschillie@fs.fed.us. |
| R-2 | Assessing the Vulnerability of Watersheds to Climate Change | GMUG and White River National Forests  | * Watersheds
 | Contact Trey Schillie to obtain a copy of the assessment – tschillie@fs.fed.us.  |
| R-2 | Regional-Scale Climate Change Vulnerability Assessment for Infrastructure in the National Forests and Grasslands of the Rocky Mountain Region | Arapaho and Roosevelt, Grand Mesa, Uncompahre, and Gunnison, Pike-San Isabel, Rio Grande, San Juan, White River, Black Hills, Bighorn, Medicine Bow-Routt, and Shoshone National Forests and Nebraska National Forests and Grasslands.Pawnee, Cimarron-Comanche, and Thunder Basin National Grasslands.  | * Infrastructure
 |  Contact Trey Schillie to obtain a copy of the assessment – tschillie@fs.fed.us. |
| R-2 | Rocky Mountain Region Vulnerability Assessments | Arapaho and Roosevelt, Grand Mesa, Uncompahre, and Gunnison, Pike-San Isabel, Rio Grande, San Juan, White River, Black Hills, Bighorn, Medicine Bow-Routt, and Shoshone National Forests and Nebraska National Forests and Grasslands.Pawnee, Cimarron-Comanche, and Thunder Basin National Grasslands. | * Vegetation

Other:* Glaciated Valleys
* Low-Gradient Streams
* Great Plains Streams
* Alpine
* Sub-alpine Spruce-Fir
* Ponderosa Pine
 | Final GTRs unfinished. Drafts available upon request.  |
| R-2 | Gunnison Basin Climate Change Vulnerability Assessment | GMUG National Forest  | * Terrestrial Ecosystems
* Aquatic Ecosystems
 |  <http://wwa.colorado.edu/publications/reports/TNC-CNHP-WWA-UAF_GunnisonClimChangeVulnAssess_Report_2012.pdf> |
| R-3 | Assessing Climate Change Vulnerability for Ecosystems of the Southwestern U.S. | Apache-Sitgreaves, Coconino, Coronado, Kaibab, Prescott, Tonto, Carson, Cibola, Gila, Lincoln and Santa Fe National Forests | * Upland ecosystems
 | Contact Priya Shahani for a copy of the assessment: priyacshahani@fs.fed.us.  |
| R-3 | Socio-Economic Vulnerability to Climate-Related Changes to National Forests in the Southwest | Apache-Sitgreaves, Coconino, Coronado, Kaibab, Prescott, Tonto, Carson, Cibola, Gila, Lincoln and Santa Fe National Forests | * Socio-economic
* Ecosystem services
 | Contact Priya Shahani for a copy of the assessment: priyacshahani@fs.fed.us. |
| R-4 | Intermountain Adaptation Partnership  | Ashley, Boise, Bridger-Teton, Dixie, Fishlake, Manti-LaSal, Payette, Salmon-Challis, Sawtooth, Caribou-Targhee, Humboldt-Toiyabe, and Uinta-Wasatch-Cache National Forests | * Physical Resources
* Vegetation
* Terrestrial species
* Aquatic species
* Infrastructure
* Recreation
* Cultural heritage
* Ecosystem Services
* Disturbance
 | In progress. Website: <http://adaptationpartners.org/iap/index.php>  |
| R-5 | Climate Adaptation Project for the Sierra Nevada | Modoc, Lassen, Plumas, Sierra, Sequoia, Inyo, Eldorado, Tahoe, Humboldt-Toiyabe, and Stanislaus National Forests; Lake Tahoe Basin Management Unit; Also: Kings Canyon/Sequoia and Yosemite National Parks | * Forested vegetation
* Non-forested vegetation
* Aquatic systems
* Terrestrial species
* Freshwater species
* Ecosystem services
 | Climate Report: <http://ecoadapt.org/data/documents/GeosInstitute2013SierraProjections_FINAL.pdf>Vulnerability Assessment:<http://ecoadapt.org/data/documents/EcoAdapt_CALCC_SierraNevadaVulnerabilityAssessment_26Feb2014.pdf>Adaptation Report:<http://ecoadapt.org/data/documents/EcoAdapt_CALCC_SierraNevadaAdaptationStrategies_26Feb2014.pdf>Website:[www.ecoadapt.org/programs/adaptation-consultations/calcc](http://www.ecoadapt.org/programs/adaptation-consultations/calcc) |
| R-5 | Southern California Climate Adaptation Project | Cleveland, Los Padres, San Bernardino, and Angeles National Forests | * Forested vegetation
* Non-forested vegetation
* Aquatic systems
 | In progress.Website:[www.ecoadapt.org/programs/adaptation-consultations/socal](http://www.ecoadapt.org/programs/adaptation-consultations/socal) |
| R-5 | Northern California Climate Adaptation Project | Six Rivers, Klamath, Shasta-Trinity, and Mendocino National Forests; Also: BLM lands in the Arcata and Redding field office areas and portions of the Ukiah field office area | * Forested vegetation
* Non-forested vegetation
* Aquatic systems
* Terrestrial species
* Freshwater species
* Ecosystem services
 | Just beginning.Website:<http://ecoadapt.org/programs/adaptation-consultations/usfs>  |
| R-6 | Blue Mountains Adaptation Partnership | Wallowa-Whitman, Umatilla and Malheur National Forests | * Vegetation
* Hydrology & infrastructure
* Fisheries
 | Complete; report in draft form below<http://adaptationpartners.org/bmap/docs/BMAP_final.pdf>  |
| R-6 | North Cascadia Adaptation Partnership | Mt. Baker-Snoqualmie National Forest, Okanogan-Wenatchee National ForestAlso: North Cascades National Park Complex, and Mount Rainier National Park | * Hydrology
* Vegetation
* Wildlife
* Fisheries
 | <http://www.fs.fed.us/pnw/pubs/pnw_gtr892.pdf>  |
| R-6 | South Central Oregon Adaptation Partnership | Deschutes, Fremont-Winema, and Ochoco National Forests, Crooked River National GrasslandAlso: Crater Lake National Park | * Hydrology & infrastructure
* Ground water dependent ecosystems
* Fisheries
* Wildlife
* Forested vegetation
* Non-forested vegetation
* Disturbance
* Recreation
* Ecosystem services
 | In progress.Website:<http://adaptationpartners.org/scoap/index.php>  |
| R-6 | Southwest Washington Adaptation Partnership | Gifford Pinchot National Forest | * Fisheries
* Vegetation
* Disturbance
* Special habitats
* Ecosystem services
* Recreation
 | In progress.Website:<http://adaptationpartners.org/swap/index.php>  |
| R-6 | Olympic Adaptation Partnership | Olympic National ForestAlso: Olympic National Park | * Hydrology and roads
* Fish
* Vegetation
* Wildlife
 | Complete:<http://www.fs.fed.us/pnw/pubs/pnw_gtr844.pdf>  |
| R-6 | The Rogue Basin Action Plan for Resilient Watersheds & Forests in a Changing Climate  | Rogue Basin | * Vegetation
* Agriculture
* Disturbance
* Hydrology
* Ecosystem services
* Economics
 | Complete: <http://www.mfpp.org/wp-content/uploads/2011/04/SOFRC-Watersheds-and-Forests-Climate-Adaptation-Plan-FINAL21.pdf> |
| R-6 | **Climate Change and Forest Trees in the Pacific Northwest: A Vulnerability Assessment and Recommended Actions for National Forests** | National Forests in Oregon and Washington | * Tree species
 | Complete: <http://ecoshare.info/projects/ccft/> |
| R-8 | Climate Change Adaptation and Mitigation Management Options (CCAMMO) | National forests in Alabama, National Forests in Mississippi, National Forests in North Carolina, Ouachita, Ozark – St. Francis, Apalachicola, Ocala, Osceola, Chattahoochee-Oconee, Daniel Boone, Land between the lakes National Recreation Area, Kisatchie,, El Yunque, Francis Marion & Sumter, Cherokee, National Forests and Grasslands in Texas, and George Washington and Jefferson National Forests | * Disturbance
* Hydrology
* Ecosystems services
* Species and habitats
* Recreation
 | Complete – Book<https://www.crcpress.com/Climate-Change-Adaptation-and-Mitigation-Management-Options-A-Guide-for/Vose-Klepzig/9781466572751> |
| R-8 | Southeast Regional Vulnerability Assessment | National forests in Alabama, National Forests in Mississippi, National Forests in North Carolina, Ouachita, Ozark – St. Francis, Apalachicola, Ocala, Osceola, Chattahoochee-Oconee, Daniel Boone, Land between the lakes National Recreation Area, Kisatchie,, El Yunque, Francis Marion & Sumter, Cherokee, National Forests and Grasslands in Texas, and George Washington and Jefferson National Forests | * Disturbance
* Hydrology
* Wildlife
* Fisheries
* Recreation
* Working land issues
 | Complete<http://climatehubs.oce.usda.gov/sites/default/files/Southeast%20Vulnerability%20Assessment%20Final.pdf> |
| R-8 | North Carolina’s Emerging Forest Threats: management Options for Healthy Forests | North Carolina, subregional | * Disturbance
* Hydrology
* Wildlife
* Fisheries
* Recreation
 | Complete<http://www.treesearch.fs.fed.us/pubs/42328> |
| R-8 | Protecting Your Forest Asset: Managing Risks in Changing Times | National forests in Alabama, National Forests in Mississippi, National Forests in North Carolina, Ouachita, Ozark – St. Francis, Apalachicola, Ocala, Osceola, Chattahoochee-Oconee, Daniel Boone, Land between the lakes National Recreation Area, Kisatchie,, El Yunque, Francis Marion & Sumter, Cherokee, National Forests and Grasslands in Texas, and George Washington and Jefferson National Forests | * Disturbance
* Hydrology
* Wildlife
* Fisheries
* Recreation
 | Complete <http://www.pinemap.org/publications/fact-sheets/Protecting_Your_Forest_Asset.pdf> |
| R-9 | Climate Change Response Framework | Allegheny, Chequamegon-Nicolet, Chippewa, Green Mountain & Finger Lakes, Hiawatha, Hoosier, Huron-Manistee, Mark Twain, Monongahela, Ottawa, Shawnee, Superior, Wayne, and White Mountain National Forests | * Vegetation
* Terrestrial species
* Disturbance
* Hydrology
* Ecosystem function
* Management Implications
 | Published: * Wisconsin: [www.nrs.fs.fed.us/pubs/46393](http://www.nrs.fs.fed.us/pubs/46393)
* Michigan: [www.nrs.fs.fed.us/pubs/45688](file:///C%3A%5CUsers%5Cprbutler%5CAppData%5CLocal%5CTemp%5Cwww.nrs.fs.fed.us%5Cpubs%5C45688)
* Minnesota: [www.nrs.fs.fed.us/pubs/45939](file:///C%3A%5CUsers%5Cprbutler%5CAppData%5CLocal%5CTemp%5Cwww.nrs.fs.fed.us%5Cpubs%5C45939)
* Central Hardwoods: [www.nrs.fs.fed.us/pubs/45430](http://www.nrs.fs.fed.us/pubs/45430)
* Central Appalachians: [www.nrs.fs.fed.us/pubs/47885](file:///C%3A%5CUsers%5Cprbutler%5CAppData%5CLocal%5CTemp%5Cwww.nrs.fs.fed.us%5Cpubs%5C47885)

In process:* Mid-Atlantic
* New England
* Urban

Website: [www.forestadaptation.org/vulnerability-assessment](http://www.forestadaptation.org/vulnerability-assessment)  |
| R-10 | Tongass National Forest | Tongass National Forest | * Fisheries
* Vegetation
* Water
 | Vulnerability Assessment Report:<http://ecoadapt.org/data/documents/EcoAdapt_Tongass_VulnerabilityAssessmentReport_FINAL_22Nov214_smallres.pdf>  |
| R-10 | Climate Change Vulnerability Assessment for the Chugach National Forest and the Kenai Peninsula | Chugach National Forest | * Hydrology
* Wildlife
* Vegetation
 | Draft available upon request. |

**Other reports with a climate change and vulnerability component**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| R-8 | Southern Forests Futures Project | Southern Region  | * Comprehensive
 | Complete – Multiple GTRs<http://www.srs.fs.usda.gov/futures/> |
| R-8 | Francis Marion National Forest Plan Assessment | Francis Marion National Forest, South Atlantic Coastal Plain | * Comprehensive

<http://www.fs.fed.us/im/directives/fsh/1909.12/wo_1909.12_10.docx> | Complete (Draft)<http://www.fs.usda.gov/detail/scnfs/landmanagement/planning/?cid=stelprdb5393142>CCRC Adaptation Example<http://www.fs.usda.gov/ccrc/climate-projects/adaptation-examples/francis-marion-national-forest>U.S. Climate Resilience Toolkit – Taking Action<https://toolkit.climate.gov/taking-action/incorporating-climate-change-new-forest-management-plan> |
| R-8 | El Yunque National Forest Plan Assessment | El Yunque National Forest, Caribbean | * Terrestrial ecosystems
* Aquatic ecosystems
* Ecosystem services
* Hydrology
* Wildlife
* Socio-economic
* Cultural
 | Complete (Draft)<http://www.fs.usda.gov/detail/elyunque/landmanagement/planning/?cid=stelprdb5411336>GTR (Final)<http://www.treesearch.fs.fed.us/pubs/45918> |
| R-8 | Nantahala-Pisgah National Forest Plan Assessment | Nantahala-Pisgah National Forest, Southern Appalachian | * Aquatic ecosystems
* Hydrology
* Recreation
* Disturbance
 | Complete (Draft)<http://www.fs.usda.gov/detail/nfsnc/home/?cid=stelprdb5436772> |
| R-8 | National Forests in Texas Plan Assessment | Angelina National Forest, Sabine National Forest, Sam Houston National Forest, Davy Crockett National Forest | * Comprehensive
 | In progress (FY16) |
| ALL | Template for Assessing Climate Change Impacts and Management Options (TACCIMO) | National, regional, subregional tool | * Comprehensive
 | Ongoing Literature Review<http://www.taccimo.info/>GTR (Final)<http://www.treesearch.fs.fed.us/pubs/45382> |