

National Forest Planning Support

Birdsey, Dugan, Healey, et al. 2019. Assessment of the influence of disturbance, management activities, and environmental factors on carbon stocks of U.S. national forests. Gen. Tech. Rep. RMRS-GTR-402. USDA Forest Service, Rocky Mountain Research Station.

Science Question

Each national forest is required (2012 Planning Rule) to assess the role of different types of disturbance on carbon storage.

Analysis

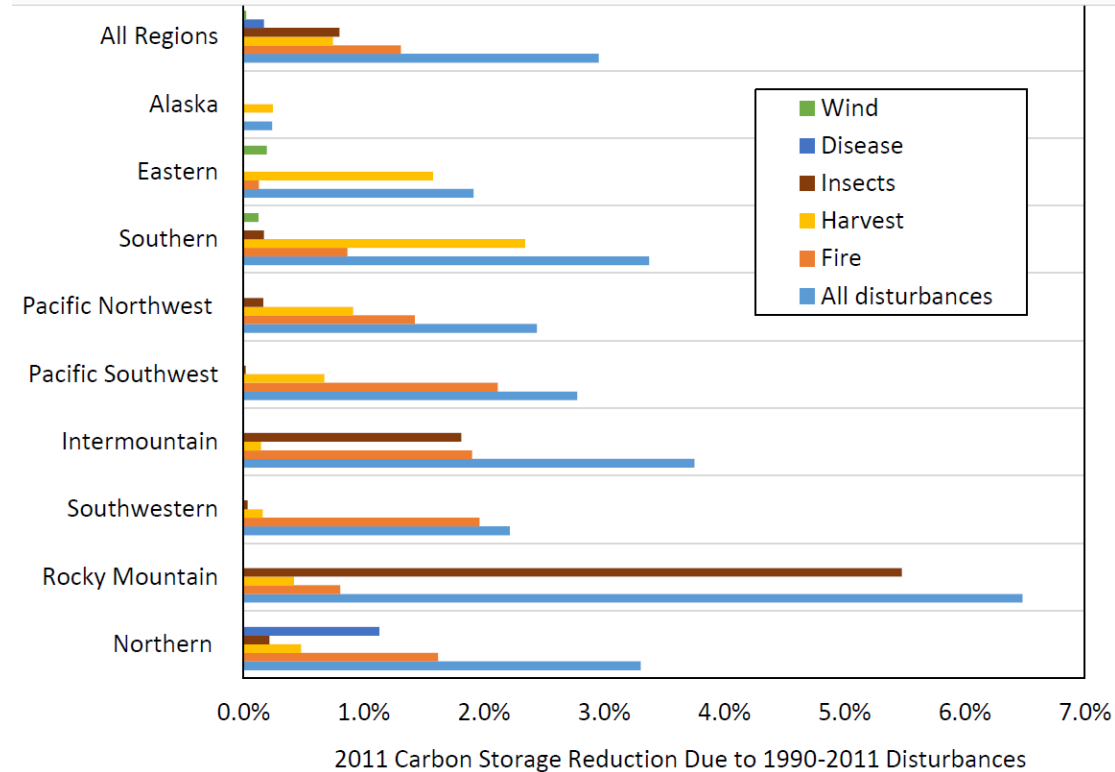
Landsat-based disturbance maps were combined with Agency inventory records and a Forest Service-maintained growth model to understand how harvest, fire, and other disturbances have affected storage of carbon in each national forest.

Results

Estimates of disturbance impact on carbon (see figure) have been published for each national forest. Innovative error tracking methods that make use of inventory records allow better understanding of local uncertainties.

Significance

This is a fully operational carbon monitoring system that provides congressionally mandated assessments of carbon to managers of public lands. NASA research has played a vital role by complementing field-based inventories.



Science for this assessment was developed through grants from NASA CMS (Healey 2011) and NASA Applied Science (Healey 2008)

Healey et al (2014). A framework for simulating map error in ecosystem models. *RSE*, 150, 207-217.

Raymond et al. (2015). Forest carbon accumulation: Integrating inventory data and a growth and yield model. *For. Eco. Mgt*, 336, 21-34.

Dugan et al.(2017). Forest sector carbon analyses support land management planning and projects. *Climatic Change*, 144(2), 207-220.