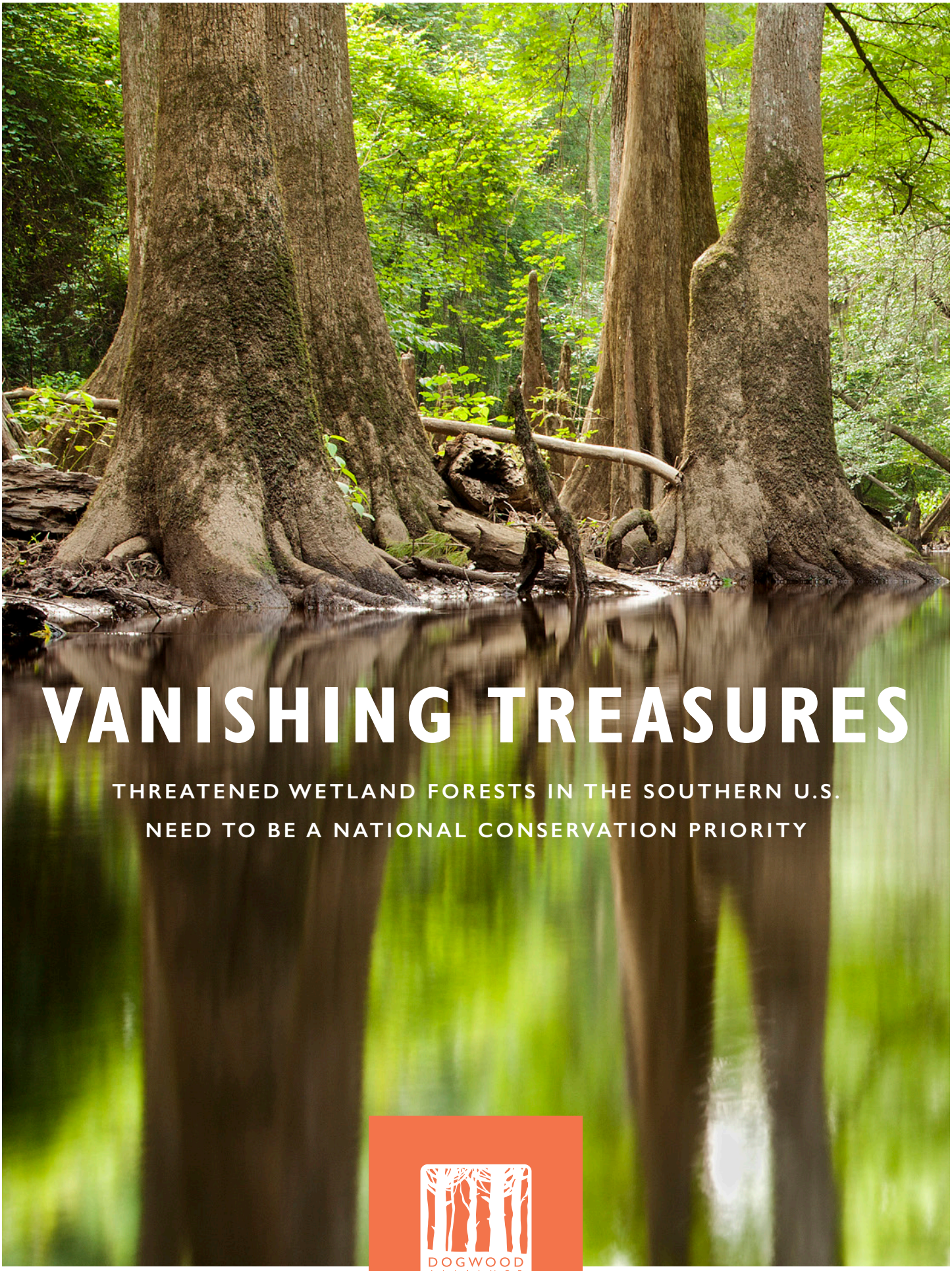


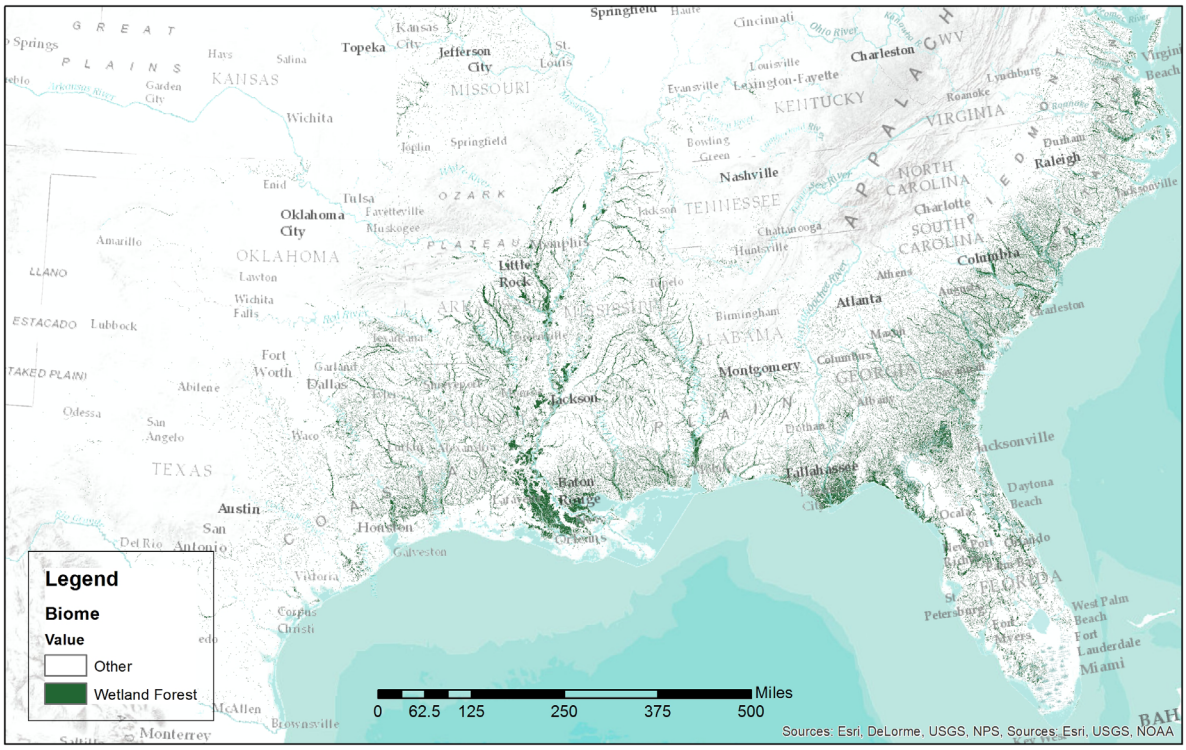
VANISHING TREASURES

THREATENED WETLAND FORESTS IN THE SOUTHERN U.S. NEED TO BE A NATIONAL CONSERVATION PRIORITY

DOGWOOD ALLIANCE

Stretching from the historic Chesapeake Bay, along the coastline of the Atlantic; across the Gulf into the mysterious bayou swamps of Louisiana; to eastern Texas and up the Mississippi valley, wetland forests are a vulnerable national treasure.

WETLAND FORESTS OF THE SOUTHEASTERN U.S.



Wetland forests are defined here as those areas classified as "woody wetlands" in the USGS National Land Cover Database and also classified as both "Forest & Woodland" in the USGS GAP Analyis Program database and "Tree-dominated" in the USDA Landfire database.

Map prepared for the Dogwood Alliance, Asheville, NC. October 21, 2016.

Key-Log. economics

Sixty-five percent of the nation's wetland forests are located in the Southern United States.[1]

These flood plain forests, also known as bottomland hardwood forests, flank rivers and streams, spanning 35 million acres across 14 southern states. They provide critical community benefits such as clean water, flood protection and a higher quality of life. They rank among the most important in the nation for carbon sequestration and biodiversity.[2] Their protection is an urgent national conservation and climate priority.

The logging rate for Southern forests was four times that of South American rainforests from 2000 to 2012,[3] making them some of the most intensively logged forests in the world.The threats to these forests are only increasing, with new industries looking to them as a source for wood-powered electricity in Europe and domestically, for liquid biofuels, and for expanding demand overseas. Ninety percent of these forests are considered highly vulnerable and more than 80 percent of are on private land.[4]

Despite their incalculable value to the region and the world, these wetland forests are disappearing. We are at a critical juncture where collectively we must develop the right policies, incentives, and financial resources to protect these amazing places that give us so much.

Abundant and healthy wetland forests for human and natural communities

Wetland forest conservation and restoration must be recognized as an urgent national, regional, and local priority. A diverse and active group of citizens, organizations, public agencies, landowners, and philanthropic and corporate leaders will be instrumental in moving this conservation legacy from a concept to a reality.

The steering committee of this initiative includes individuals from: American Forest Foundation, Audubon, Black Family Land Trust, Carolina Wetlands Association, Defenders of Wildlife, Dogwood Alliance, Forest Stewards' Guild, Gulf Restoration Network, LA Dept. of Wildlife & Fisheries, National Wildlife Federation, National Woodland Owners' Association, Natural Resources Defense Council, One Hundred

STRATEGIES FOR SUCCESSFULLY CONSERVING, RESTORING, AND IMPROVING SOUTHERN WETLAND FORESTS

Our transformative work will be accomplished by:

- Elevating wetland forests as a national conservation priority
- Identifying opportunities for restoration and conservation
- Working with landowners and others to implement sound management practices on working lands
- Supporting increased incentives and funding to expand the range of wetland forests
- Working with local communities, to increase resilience, diversify economic opportunities and enhance quality of life.
- Recognizing and engaging with historically underrepresented citizens and communities.
- Educating citizens about the benefits of wetland forests in their communities
- Collaborating with communities, landowners, resource managers, scientists, government agencies, and industries.

Miles, Open Space Institute, Poarch Creek Band of Creek Indians, Southeast Association of Fish and Wildlife Agencies, Southern Group of State Foresters, University of Georgia, Wildlands Network, Wild South, and Wild Virginia.

Growing Industry Demands Threaten Southern Forests

There are already great demands placed on Southern forests as they provide 57% of all wood harvested in the US.[8] Although they comprise just 2 percent of the planet's total forest cover, Southern forests generate approximately 25% of the global supply of wood for paper products and other industrial uses combined.[9]

Recent explosive growth for wood as an electricity fuel source in Europe has placed these forests at even greater risk as wood pellet production in the South has quadrupled over the past few years with significant continued growth projected.[10] It is also very likely that our own policies in the United States will result in more forests being burned for electricity.[11]

Industrial wood pellet emissions can be greater than coal when burned at the smokestack, and manufacturing and transporting pellets further increases emissions.[12] Furthermore, it can take an entire human lifetime to regain the values of a clearcut forest. Even if a cleared forest recovers, biodiversity, carbon capture and all the other benefits of a mature forest are forfeited in the decades-long interim and, in some instances, completely lost.[13]

FACTS

Only 10 percent of Southern forests are fully protected from commercial logging.[14]

The Southern United States is now the world's largest manufacturer and exporter of wood pellets.[15]

Projections say wood pellet exports could reach as high as 70 million tons annually,[16] which is equivalent to about 3.5 million acres per year.

A majority of the raw material used to manufacture wood pellets in the South comes from whole trees (despite industry insistence that it uses "logging residuals," "scraps" and "waste wood").[17]

Forests Are Our Best Defense Against Climate Change

When left standing, forests are one of our best defenses against climate change. They not only remove and store vast amounts of carbon, but they protect water resources. In the face of mercurial, and ever-intensifying weather patterns as a result of climate change, standing forests provide critical storm protection, and they are vital to the people who live in this region in the face of a changing climate.

Forests fight climate change by serving as carbon sinks, pulling carbon out of the atmosphere and storing it in vegetation and soil. According to the Forest Service, Southern forests are among the top-ranking carbon-rich forests in the United States.[19] Southern forests, which include wetland forests, comprise about 29 percent of all US forests and account for approximately one-third of the carbon US forests annually sequester.[20]

Southern Forests Help Ensure Water Security and Protect Our Coastal Communities

The forests of the Southern US provide clean drinking water to millions of people across the region. In fact, two-thirds of the nation's clean water supply comes from precipitation that is filtered through forests and ends up in streams.[25] Wetland forests purify and maintain the quality of freshwater streams and rivers in nine states across the South. They improve water quality by filtering pollutants, capturing sediment and controlling water temperature fluctuations.[26] The water purification benefits of forests are economically valuable not to mention critical to our prosperity and survival as a species.

Wetland forests also provide enormous flood control benefits, soaking up water, slowing floodwater speed, and providing areas for water to pool, thus reducing the risk of flooding in downstream communities.[27] Bottomland wetland forests along the Mississippi River once could store at least sixty days' worth of floodwater. Dramatically reduced in size, they now provide only twelve days' worth of water storage. In many cases, communities in the region have had to compensate for that loss with expensive man-made solutions such as dredging and levees.[28]

Despite the fact that coastal forests are our best defense against flooding and sea level rise associated with climate change they remain unprotected. The coastal South is one of the most at-risk regions in the United States for sea level rise, which will significantly encroach on wetland forests on the coastal edge.[29]

Southern Forests are Among the Most Biologically Important Habitats in North America

According to the World Wildlife Fund, the wetland (bottomland hardwood) forests of the South, which flank rivers and streams running throughout the coastal plain, are some of the most biologically important habitats in North America.[22] Additionally, while the nation's highest concentrations of bird, reptile, and tree diversity are found in these forests of the Southern US, the majority of protected forests are in the West.[23] Wetland forests provide shelter to these unique species that can be found nowhere else on the planet. Maintenance of mature, intact and contiguous wetland forests is critical for conservation of wildlife diversity.

THREATENED & ENDANGERED SPECIES FOUND IN SOUTHERN WETLAND FORESTS [24]

MAMMALS:
Red wolf, West Indian Manatee, gray bat, Indiana bat, Louisiana black bear, American black bear

FISH & SHELLFISH:
Roanoke logperch, several varieties of freshwater mussels, shortnose sturgeon, Carolina madtom, pygmy sunfish, bluestripe shiner, robust redhorse, pallid sturgeon, Alabama sturgeon, Alabama shad

INSECT:
Skipper butterfly

REPTILES:
American alligator, frosted flatwoods salamander, striped newt, Escambia map turtle, Red Hills salamander

BIRD:
Wood stork

Advancing a Legacy of Conservation and Protection of Southern Forests

Wetland forests are a fraction of what they once were. Together, we are working to conserve, restore, and improve these majestic forests before it is too late. We envision a future with abundant and healthy wetland forests, for both human and natural communities. This is a critical time to influence how our forests are valued for their community, climate and ecosystem benefits and to protect millions of acres of some of the most biodiverse forests on the planet.

Join the Movement to Protect Southern Wetland Forests

Join the Wetland Forest Initiative in working to conserve, restore, and improve our beautiful landscape. If you're reading this, you have a role to play in this conservation vision.

Beginning February 2nd, 2017, find out more at:
http://www.wetlandforests.org

(Endnotes)

1 Reed F. Noss et al., "Endangered Ecosystems of the United States," (1995).

2 NRDC, October 2015, "In the US Southeast, Natural Forests Are Being Felled to Send Fuel Overseas," http://www.nrdc.org/energy/files/southeast-biomass-exports-report.pdf.

3 M. C. Hanson, P. V. Potapov, R. Moore, et. al. November 15, 2013. "High-Resolution Global Maps of 21st-Century Forest Cover Change," *Science* 342(6161), pp. 850-853, http://science.sciencemag.org/content/342/6160/850 and http://earthenginepartners.appspot.com/science-2013-global-forest.

4 NRDC, October 2015, "In the US Southeast, Natural Forests Are Being Felled to Send Fuel Overseas," http://www.nrdc.org/energy/files/southeast-biomass-exports-report.pdf.

5 Michael J. Mac et al., "Status and Trends of the Nation's Biological Resources," U.S. Geological Survey (USGS), 1998. David N. Wear and John G. Greis, Southern Forest Resource Assessment,USDA Forest Service, 2002.

6 The Longleaf Alliance, "The Longleaf Alliance Progress Report: October 1995-December 2008," http://www.longleafalliance.org/overview/publications/progressReport2008.pdf.

7 Patrick Armstrong, "Conflict Resolution and British Columbia's Great Bear Rainforest: Lessons Learned 1995-2009," http://www.coastforestconservationinitiative.com/pdf7/GBR_PDF.pdf.

8 Prestemon, Jeffrey P., and Robert C. Abt. 2002. "Timber Products Supply and Demand." In Wear, David N., and John G. Greis, eds. Southern Forest Resource Assessment. Gen. Tech. Rep. SRS-53. Asheville, NC: U.S. Department of Agriculture, Forest Service, Southern Research Station.

9 http://www.seesouthernforests.org/discover-southern-forests/benefits/ecosystem

10 Danielle Lowenthal-Savy, "UK's Renewable Energy Targets Drive Increases in U.S. Wood Pellet Exports," U.S. Energy Information Administration, April 22, 2015, www.eia.gov/todayinenergy/detail.cfm?id=20912.

11 Anna Simet, August 3, 2015, "EPA Releases Clean Power Plan, Uncertainty for Biomass Remains," *Biomass Magazine,* http://biomassmagazine.com/articles/12260/epa-releases-clean-power-plan-uncertainty-for-biomass-remains.

12 Pingoud, K., T. Ekholm, and I. Savolainen, "Global Warming Potential Factors and Warming Payback Time as Climate Indicators of Forest Biomass Use," Mitigation and Adaptation Strategies for Global Change 17, no. 4 (January 2012): 369-386. Schulze, E. D., et al., "Large-scale Bioenergy from Additional Harvest of Forest Biomass Is Neither Sustainable Nor Greenhouse Gas Neutral," GCB Bioenergy 4, no. 6 (November 2012): 611-616. Walker,T., et al., Biomass Sustainability.

13 Michael P. Schafale, "Nonriverine Wet Hardwood Forests in North Carolina: Status and Trends," N.C. Natural Heritage Program, March 1999.

14 NRDC, October 2015, "In the US Southeast, Natural Forests Are Being Felled to Send Fuel Overseas," http://www.nrdc.org/energy/files/southeast-biomass-exports-report.pdf.

15 U.S. Department of Commerce, International Trade Administration, "Renewable Energy Top Markets for U.S. Exports 2014–2015," February 26, 2014.

16 Wood Resources International LLC, "Global Timber and Wood Products Market Update," news brief, October 11, 2012.

17 European Commission Workshop Briefing Paper, September 2015, "Study on the Environmental Implications of the Increased Reliance of the EU on Biomass for Energy Imported from North America"

18 John Upton, November 3, 2015, "Renewable energy doesn't mean clean energy: The European accounting error that's warming the planet." *Salon.* http://www.salon.com/2015/11/03/pulp_fiction_the_european_accounting_error_thats_warming_the_planet_partner/

19 USDA Forest Service, "Forest Inventory and Analysis Program," http://www.fia.fs.fed.us/forestcarbon/.

20 Southern Forests for the Future, "Ecosystem Services," http://www.seesouthernforests.org/discover-southern-forests/benefits/ecosystem#global-climate.

21 Beverly Elizabeth Law and Mark E. Harmon. 2011. "Forest sector carbon management, measurement, verification, and discussion of policy related to climate change." *Carbon Management*, 2(10). http://terraweb.forestry.oregonstate.edu/pubs/lawharmon2011.pdf

22 T. Ricketts et al., Terrestrial Ecoregions of North America: A Conservation Assessment Washington D.C. (City: Island Press, June, 1999), 33-59xx-xx

23 Jenkins, C.N. et al. 2015. US protected lands mismatch biodiversity priorities. PNAS vol 112(16): 5081-5086.

24 NRDC, October 2015, "In the US Southeast, Natural Forests Are Being Felled to Send Fuel Overseas," http://www.nrdc.org/energy/files/southeast-biomass-exports-report.pdf.

25 Southern Forests for the Future, "Ecosystem Services," http://www.seesouthernforests.org/discover-southern-forests/benefits/ecosystem#global-climate.

26 North Carolina State University, "Riparian Buffers: What Are They and How Do They Work?" www.soil.ncsu.edu/publications/BMPs/buffers.html, (accessed September 17, 2015). P. Lee et al. 2004. Quantitative Review of Riparian Buffer Width Guidelines from Canada and the U.S.," Journal of Environmental Management 70, no. 2 (February, 2004): 165-180.

27 NRDC, October 2015, "In the US Southeast, Natural Forests Are Being Felled to Send Fuel Overseas," http://www.nrdc.org/energy/files/southeast-biomass-exports-report.pdf.

Southern Forests for the Future, "Ecosystem Services," http://www.seesouthernforests.org/discover-southern-forests/benefits/ecosystem#global-climate.

28 EPA, "Wetlands and People," water.epa.gov/type/wetlands/people.cfm. (accessed September 17, 2015).

Southern Forests for the Future, "Ecosystem Services," http://www.seesouthernforests.org/discover-southern-forests/benefits/ecosystem#global-climate.

29 U.S. Environmental Protection Agency (EPA), "Climate Change: Climate Impacts in the Southeast," www3.epa.gov/climatechange/impacts/southeast.html#impactsecosystem (accessed September 17, 2015).

Southern Forests for the Future, "Ecosystem Services," http://www.seesouthernforests.org/discover-southern-forests/benefits/ecosystem#global-climate.

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