

Laws, Regulations, Permits, Policies, Positions and Wind Turbines

A Presentation to the 2002 Wind Summit

December 9, 2002

by

Dennis Scanlin



<http://www.ncwindpower.appstate.edu>

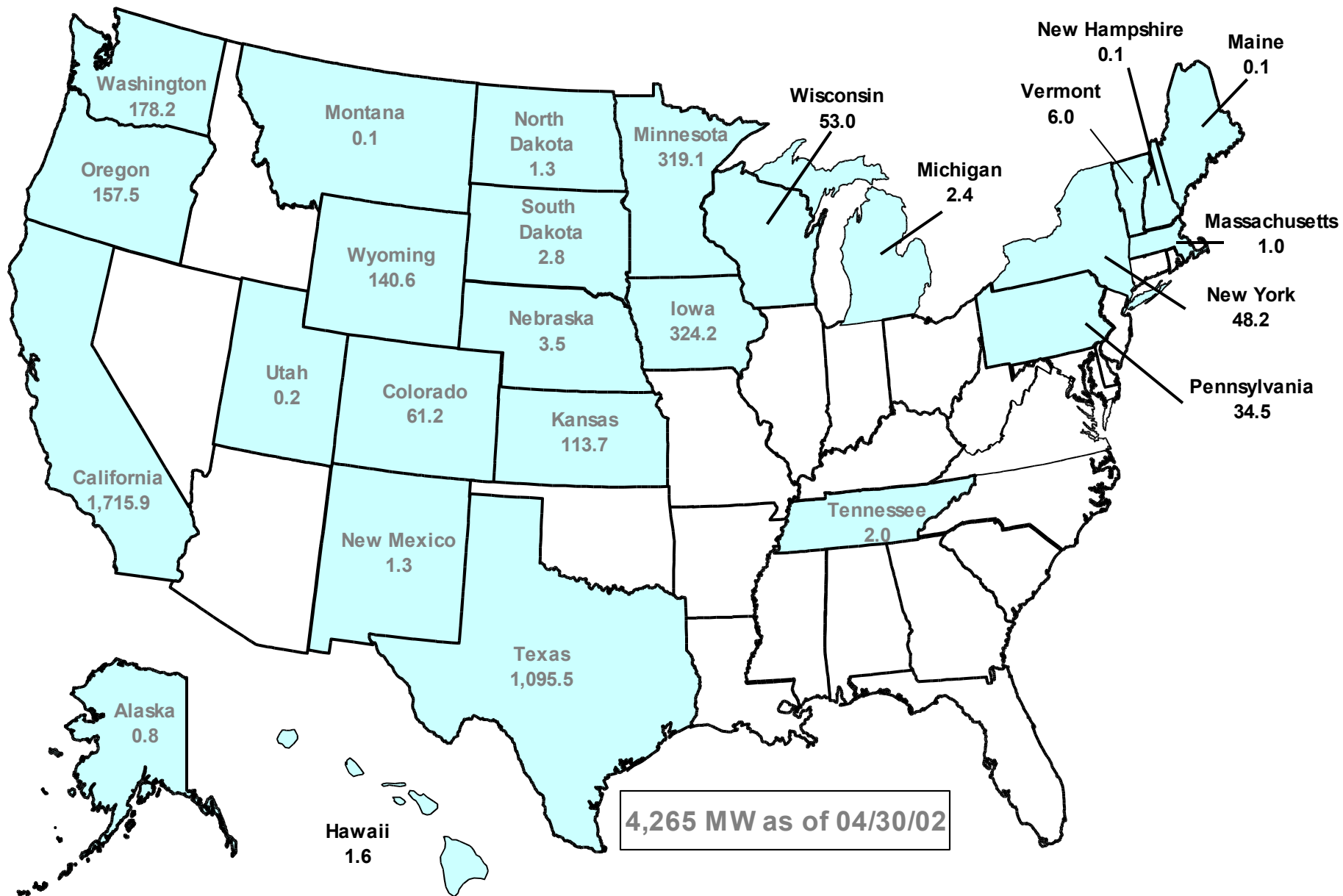


U.S. Department of Energy

Office of Energy Efficiency and Renewable Energy

Bringing you a prosperous future where energy is
clean, abundant, reliable, and affordable

United States Wind Power Capacity (MW)

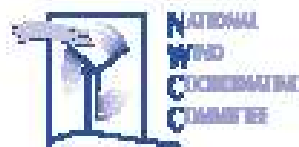


Permitting of Wind Energy Facilities

A HANDBOOK
REVISED 2002



Prepared by the NWCC Siting Subcommittee
August 2002



Mountain Ridge Protection Act of 1983

- “No building, structure or unit shall protrude at its uppermost point above the crest of the ridge by more than 35’
- Protected mountain ridges are all mountain ridges whose elevation is 3,000 ft and whose elevation is 500 or more feet above an adjacent valley floor

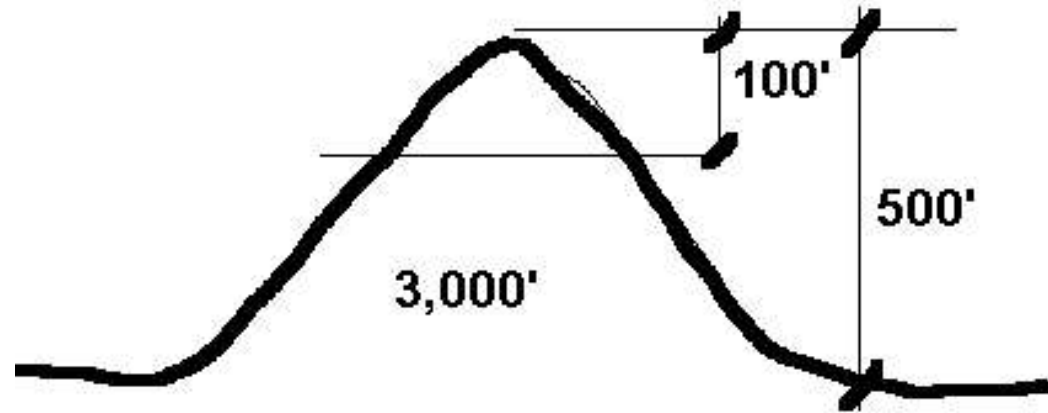
Wind Power Classes in Western North Carolina

Power Classes 2-6 Below 3000 ft



Ridge Law

- “Ridge” means the elongated crest or series of crests at the apex or uppermost point of intersection... and includes all land 100 ft. below



Structure must be less than 40' high from top of foundation to uppermost point and 3' of foundation can be added.

Exemptions to Ridge Law

- Water, radio, telephone or television towers or any equipment for the transmission of electricity or communications or both
- Structures of a relatively slender nature and minor vertical projections of a parent building, including chimneys, flagpoles, flues, spires, steeples, belfries, cupolas, antennas, poles, wires, or *windmills*

Mr. Cooper 2/4/2002 letter to TVA

- “ A wind farm such as that proposed here ... cannot be construed to fall within the exemption for **“structures of a relatively slender nature and minor vertical projection of a parent building, including chimneys, flagpoles, flues, spires, steeples, belfries, cupolas, antennas, poles, wires, or windmills”**

Roy Cooper's Letter Continued

- The Legislature in 1983 had in mind, the traditional, solitary farm windmill which has long been in use in rural communities, not windfarm turbines of the size, type, or certainly number proposed here...”

Boone, NC 2MW Mod-1 Turbine: 1979 - 1983



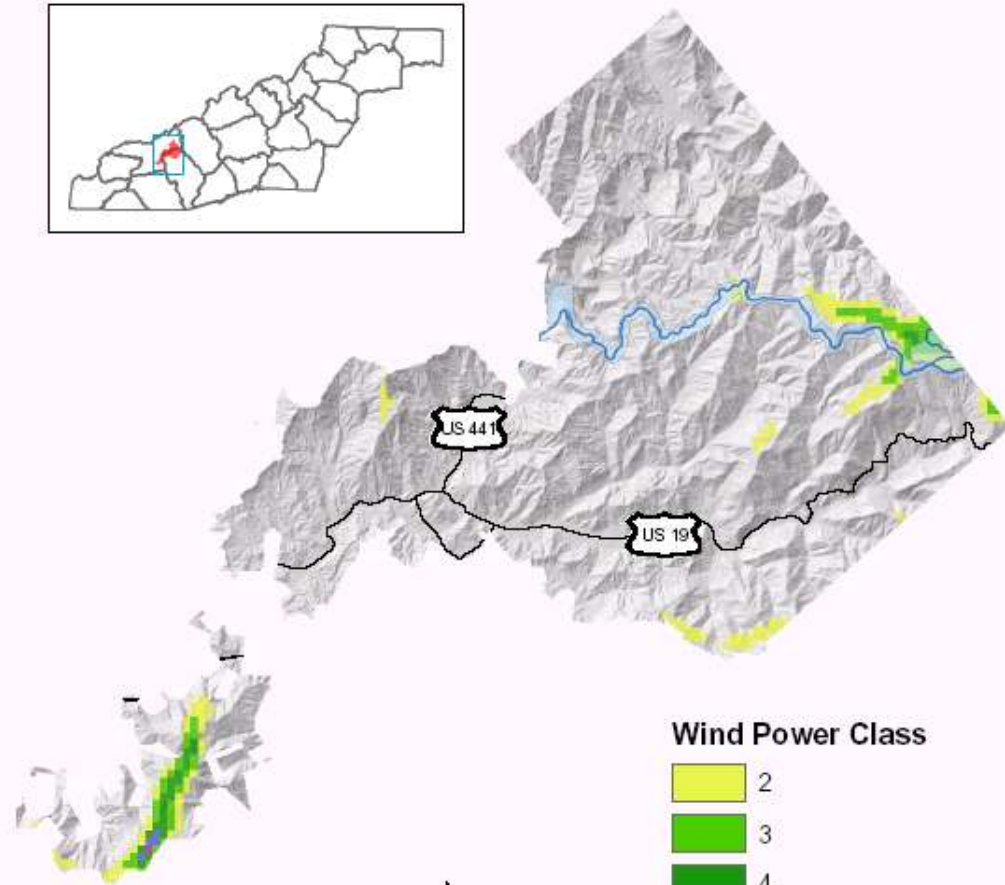
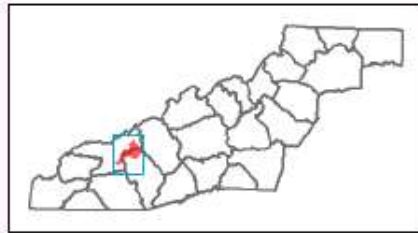
Mountain Ridge Protection Act

- Mr. Cooper has indicated that the exemption for equipment for the transmission of electricity would not apply to the wind farm proposed by TVA

Cherokee Tribal Lands

- According to attorneys with the Eastern Cherokees, the “Ridge Law” does not apply to the Qualla boundary
- No tribal laws on the topic of mountain top protection
- Tribe must formally approve any use of property within Qualla Boundary

Cherokee Indian Reservation, NC



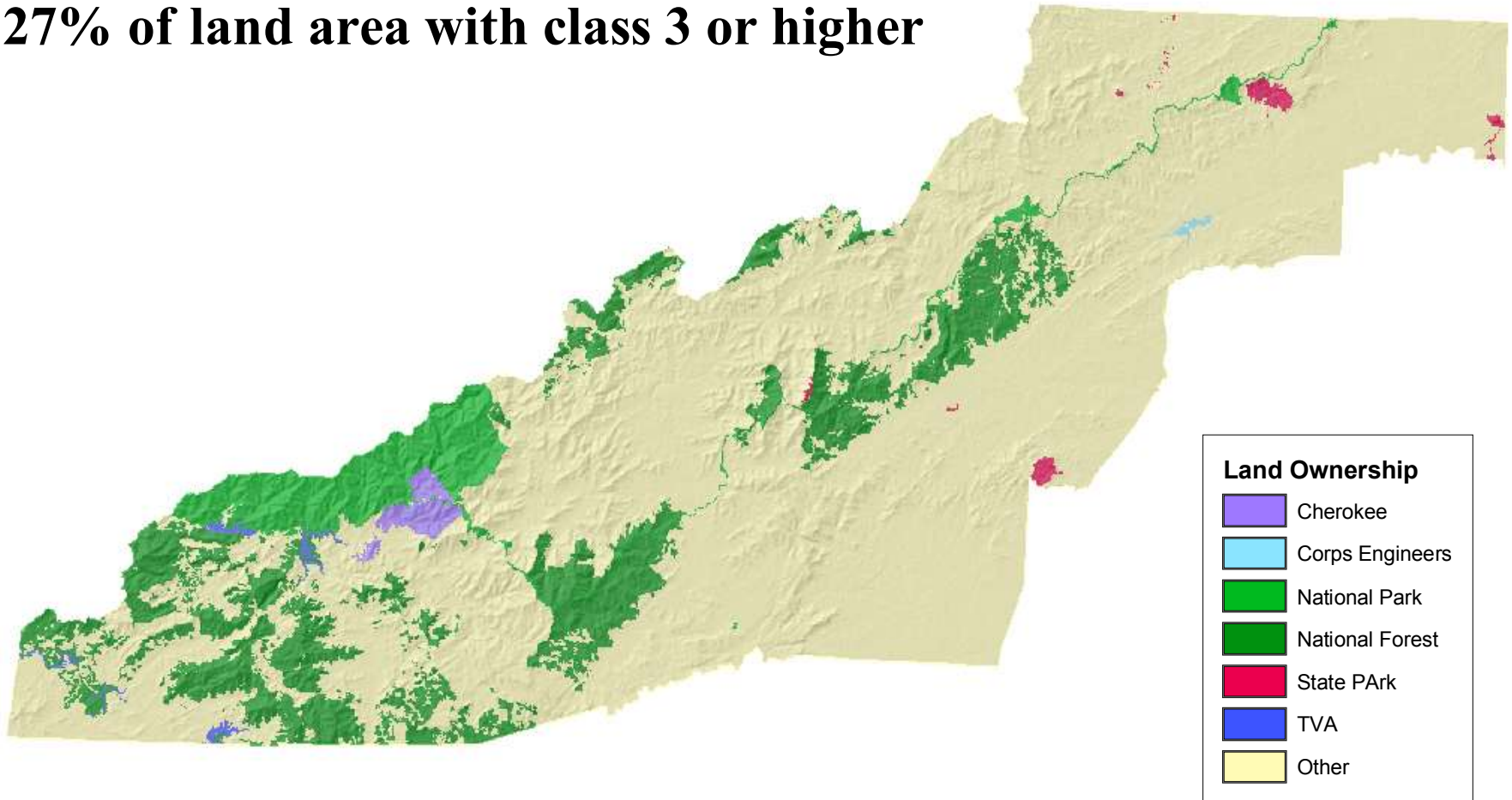
Wind Power Class



Natahala & Pisgah National Forests

24% of land area with class 2 or higher

27% of land area with class 3 or higher



National Forest Lands

- High scrutiny for permanent development
- Very stringent screening process
- 1st criteria is why can't private lands be used
- Increasing emphasis on visual standards
 - No cell towers approved in over 8 years
 - All new power lines are under ground

National Forest Lands

- No formal determination about wind turbines and/or whether Ridge Law would apply
- Answer is unclear (from Sen. Phil Berger)
- According to the Office of General Council for the Forest Service, the Forest Service tries to be sensitive to the policy embodied in state law

National Forest Requirements

- National Forest Management Act (NFMA) requires that each National Forest be governed by management plan
- Permit required from Forest Service
- Permit requires National Environmental Policy Act (NEPA) compliance
- NEPA requires careful consideration of all environmental effects

National Forest Lands

Goals of most recent Forest Management Plan
(Amendment 5, 1994) that could support wind
power development

- 1) Improve the quality of life for citizens
of western north Carolina....
- 2) Improve economic prosperity of local
communities
- 3) Keep public involved in open & honest
dialogue

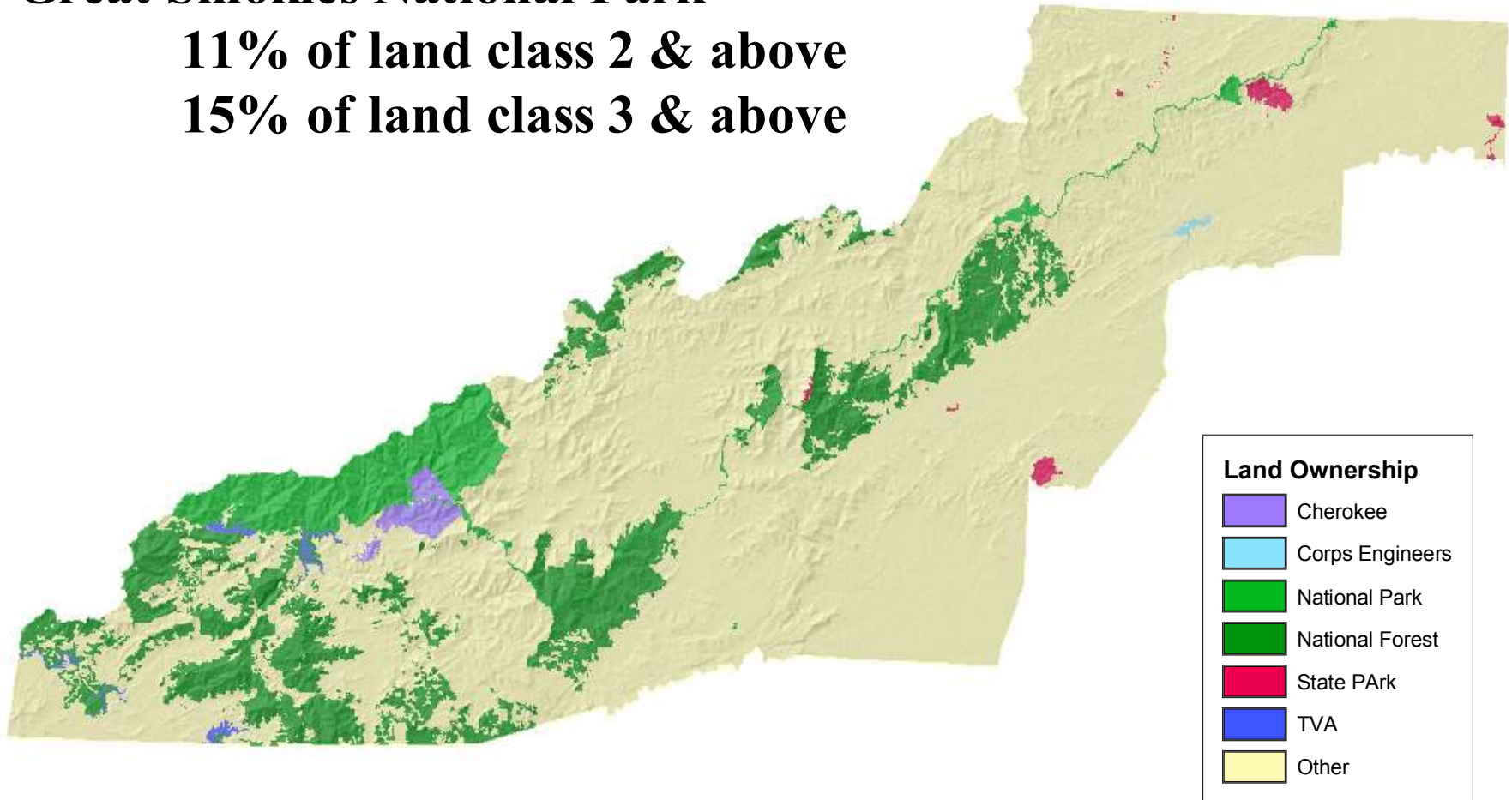
National Park Lands

Blue Ridge Parkway

Great Smokies National Park

11% of land class 2 & above

15% of land class 3 & above



National Park Lands

- Strong conservation mandate
- Large wind projects not likely to be possible
- Possibility for small demo project to power something in the park

Blue Ridge Parkway

- Designed as scenic drive
- 800-1000' width actually part of park
- No legal control of viewshed
- Would like to protect view shed for 1 mile out



**Blue Ridge Parkway with 1 mile
view shed exclusion zone on either
side**



Turbine at $\frac{1}{4}$ mile



Turbines from ½ mile



Turbines 1.5 miles away



Wind Turbines 3 miles in the Distance



10 Turbines from 6 miles away



Photosimulation



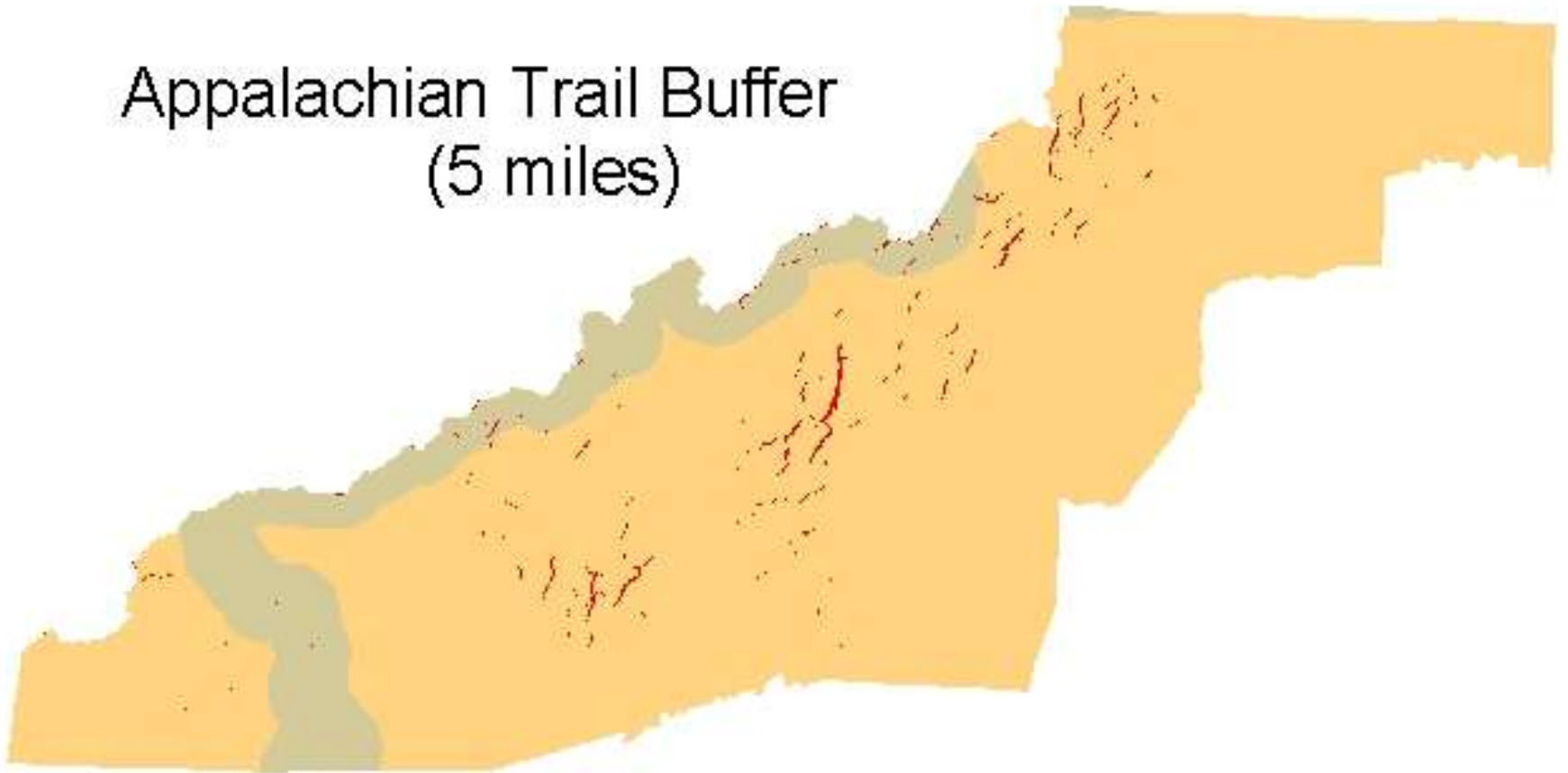
Appalachian National Scenic Trail

- Most Important long-distance foot trail in the world
- Longest skinniest national park in the country
- Managed by Appalachian Trail Conference
- “Trail experience includes a sense of remoteness and detachment from civilization
- Use Forest Service’s Scenery Management system
- Use visual simulation & GIS viewshed mapping
- “no-net loss approach
- Locating projects near developed sites is better

Appalachian Trail

**Very concerned about visual character with ½ mile
and will comment on anything within 5 miles of the trail**

Appalachian Trail Buffer
(5 miles)



FAA Lighting Requirements

- Lights required on towers over 200'
- What color is best?
- Can they be dimmable?
- Would every turbine need one?



Renewable Energy Production Tax Credit in Energy Policy Act of 1992

- 1.8 cents per KWH in 2001 dollars
- Adjusted annually for inflation
- Good for 10 years
- Must begin operation by December 31, 2002

Blue Ridge National Heritage Act of 2002

- **Purpose:** Manage, preserve, protect and interpret the cultural, historical, and natural resources of the Heritage area (25 western counties) while continuing to develop economic opportunities
- Introduced by Senator Edwards and passed by US Senate

Standardized Zoning/Interconnection Requirements

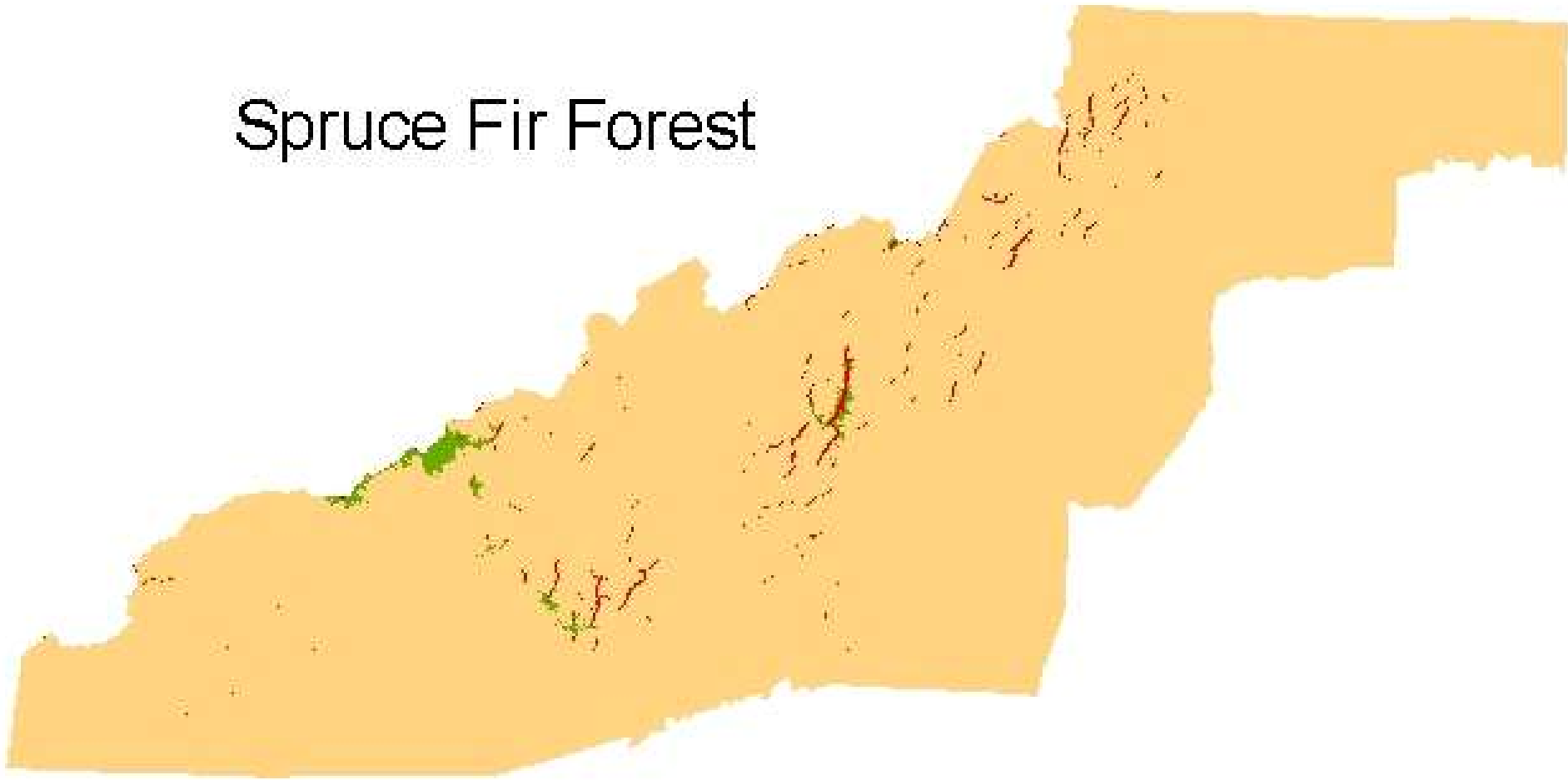
- Many jurisdictions require special-use permit for towers > 35 feet
- Calif. passed law to make wind turbines “permitted use,” bringing compliance costs from \$2000-\$8000 & 4 months to \$400 and 20 minutes

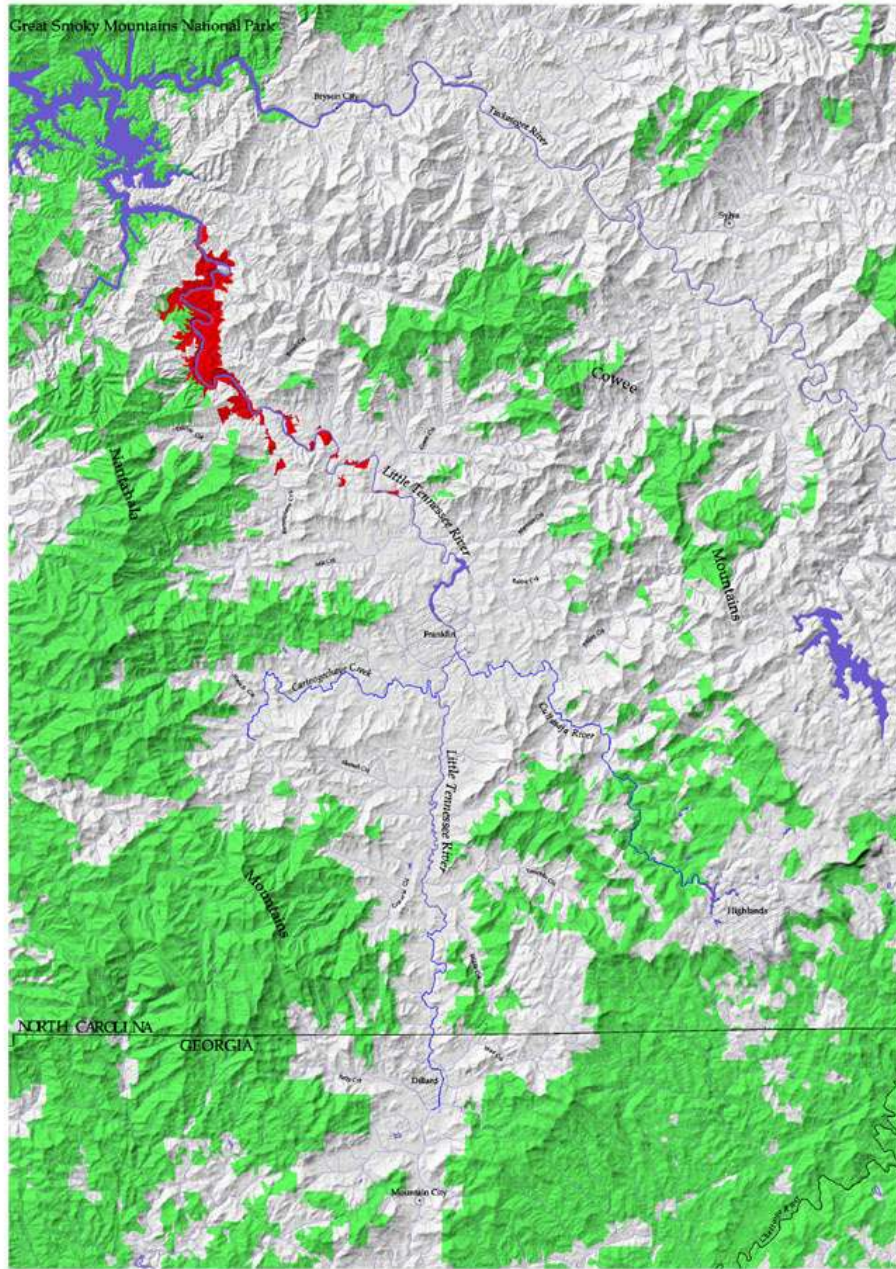
Conservation Priorities

- National Audubon Society
- Southern Appalachian Highlands Conservancy
- Southern Appalachian Forest Coalition
- Western North Carolina Alliance
- Environmental Defense
- Appalachian Voices
- Appalachian Mountain Club

Spruce Fir Forests

Spruce Fir Forest





Upper Little Tennessee River Watershed

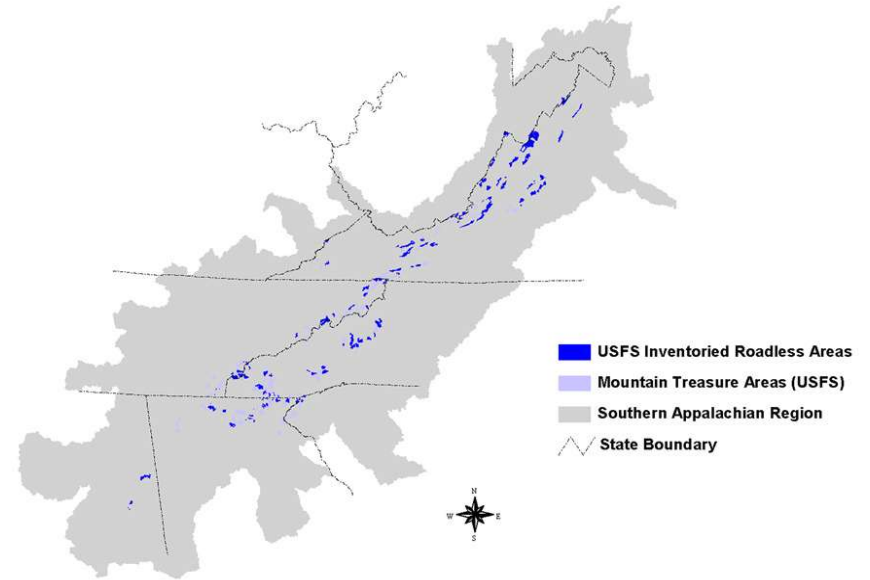
- Public Lands
- Needmore Tract
- Towns



SOUTHERN APPALACHIAN
FOREST
COALITION

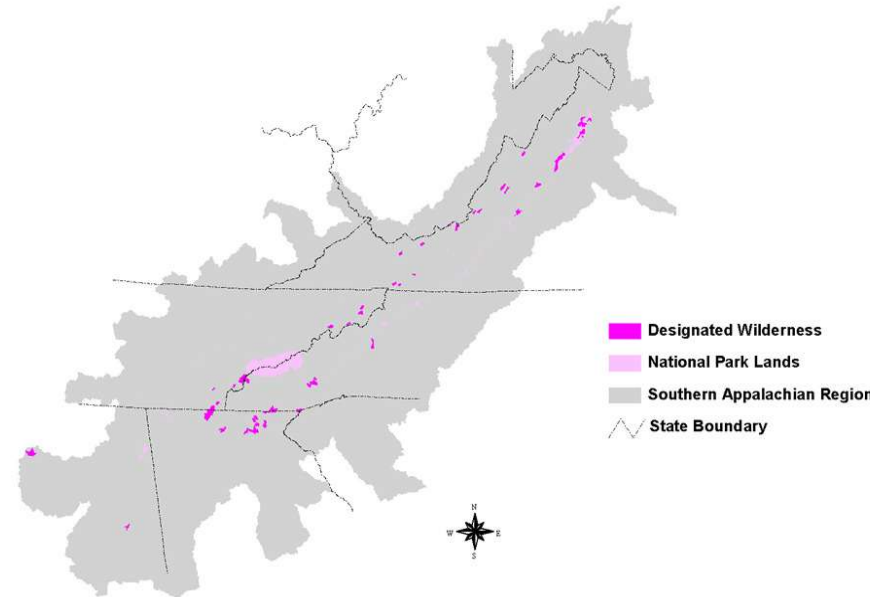
The Nkwasí Land Trust – A Project of the Southern Appalachian Highlands Conservancy
Produced by Hugh Train, Southern Appalachian Rural Coalition; Base map design by Kerry Strack, Clemson University.
Data from: Southern Appalachian Assessment, 1996; Needmore Tract digitized by SAFC from Nkwasí Land Trust maps, 1996.

Unprotected Wildlands in the Southern Appalachians



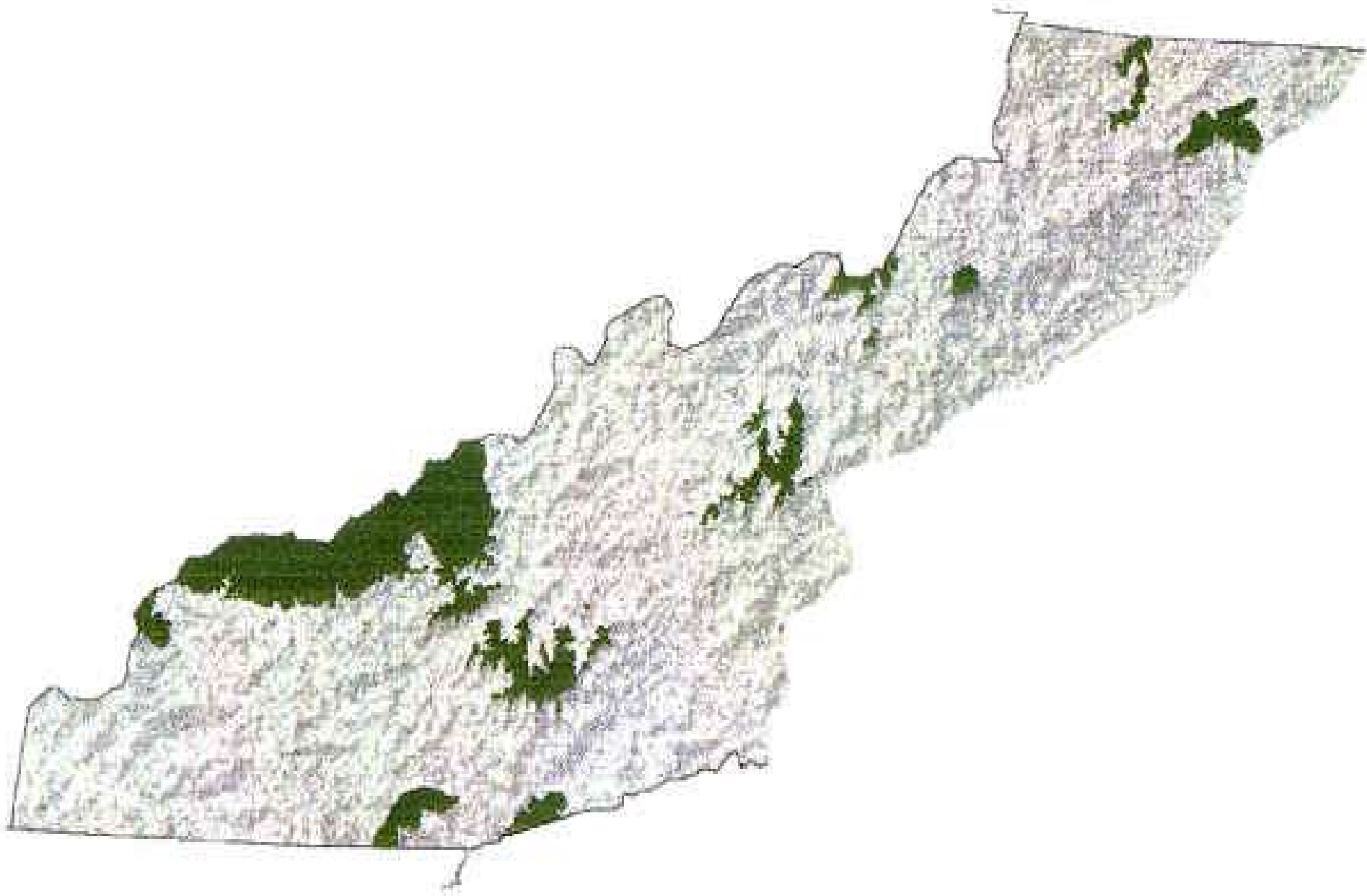
- USFS Inventoried Roadless Areas
- Mountain Treasure Areas (USFS)
- Southern Appalachian Region
- State Boundary

Protected Wildlands in the Southern Appalachians



- Designated Wilderness
- National Park Lands
- Southern Appalachian Region
- State Boundary

Audubon's Important Bird Areas In Western NC



CONSERVATION AREAS IN THE SOUTHERN APPALACHIANS

grouped by ecological units

RIDGE AND VALLEY

NORTHERN RIDGE AND VALLEY

Northern Ridge and Valley / Alleghany Mountains

SW Virginia Ridge and Valley

KY

CUMBERLAND MOUNTAINS

SOUTHERN RIDGE AND VALLEY

TN

SOUTHERN CUMBERLAND PLATEAU

AL

WV

VA

NC

SC

GA

BLUE RIDGE

NORTHERN BLUE RIDGE

Shenandoah N. P.

CENTRAL BLUE RIDGE

SOUTHERN BLUE RIDGE

Mount Rogers/Rogers Ridge

Holston Mountain

Iron Mountain

Roan Mountain/Unaka Mountains

Grandfather Mountains

Black Mountains

Shining Rock

Nantahala Mountains

Little TN Watershed

Blue Ridge Escarpment

Southern Blue Ridge Extension

WESTERN BLUE RIDGE

Bald Mountains

Great Smoky Mountains

Unicoi Mountains

Cohutta/Big Frog Mountains

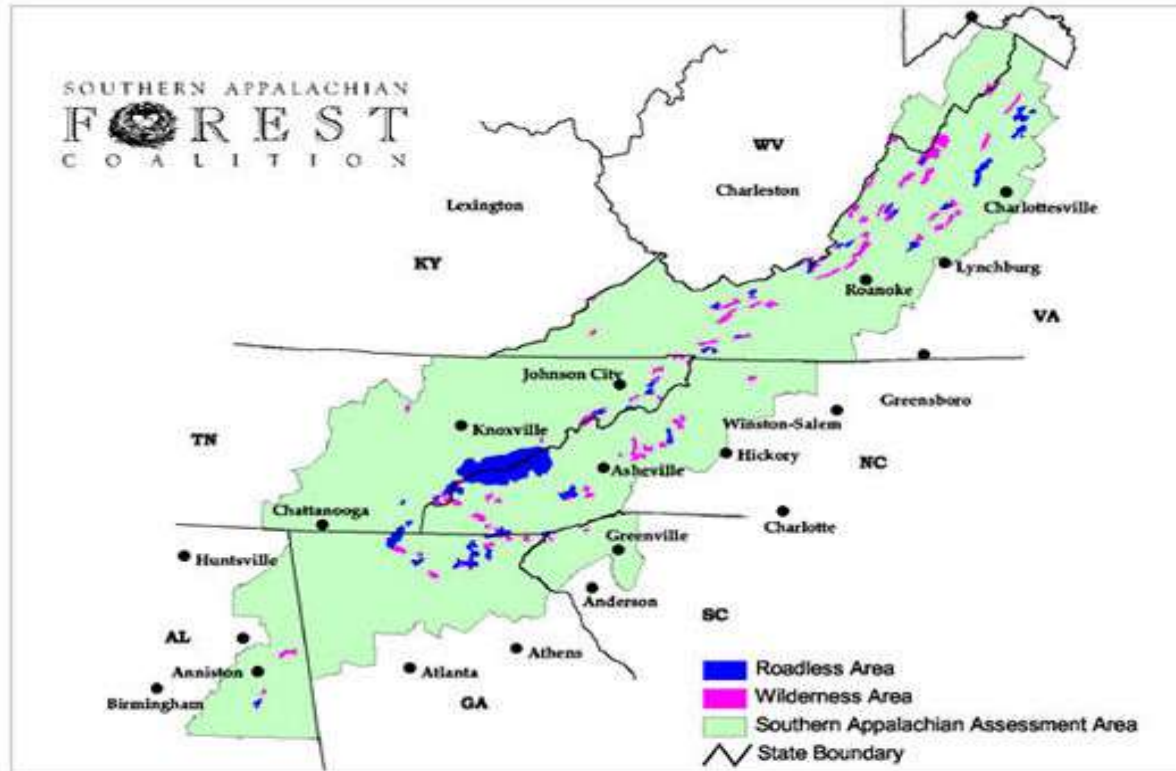
-  STATE LINE
-  ECOLOGICAL UNIT BOUNDARY
-  RIVERS
-  LAKES
-  WILDERNESS AND NATIONAL PARKS
-  ROADLESS AREAS
-  NATIONAL FOREST LANDS
-  BLUE RIDGE PARKWAY
-  STATE LANDS
-  MILITARY BASES
-  JOCASSEE LANDS



50 0 50 100 Miles



Wilderness and Roadless Areas in the Southern Appalachian Assessment



Wilderness and Roadless Areas on National Forest Land

National Forest Land in SAA	4,553,637 Acres	
Designated Wilderness on National Forest	347,990 Acres	7.6%
Inventoried Roadless on National Forest	752,654 Acres	16.5%
Wilderness plus Roadless on National Forest	1,100,644 Acres	24.2%

Wilderness and Roadless Areas (all ownerships) in Southern Appalachian Region

Total SAA Area	37,400,000 Acres	
Designated Wilderness in SAA	428,545 Acres	1.1%
Inventoried Roadless in SAA	1,231,961 Acres	3.3%
Wilderness plus Roadless in SAA	1,660,506 Acres	4.4%

The Southern Appalachian Highlands Conservancy's Land Conservation Priorities

The Great Smoky Mountains

- 350 acres already protected
- 1,000 acres campaign goal

The Highlands and Walnut Mountains

- 1,000 acres already protected
- 3,000 acres campaign goal

The Highlands of Roan

- 15,000 acres already protected
- 3,000 acres campaign goal

The Mountains of East Tennessee

- 450 acres already protected
- 6,000 acres campaign goal

The Black Mountains

- 800 acres already protected
- 1,000 acres campaign goal

The Foothills Ridge and Balsam Mountains

- 1,440 acres already protected
- 1,000 acres campaign goal



Appalachian Mountain Club's Policy

The AMC supports investigation of the potential of windpower as a renewable and economically viable energy resource. However, because of the potential impacts on the region's mountain area, support of specific projects is contingent upon such development leading to a clear and demonstrable improvement in the overall ecological health and long term protection of the region's mountains, rivers and forests

AMC Policy Toward Wind Power

- Encourages official state policies and criteria for determining suitable sites
- Projects should lead to a permanent and verifiable improvement in the region's air quality
- Projects should include provisions to assure decommissioning when & if no longer used

AMC Specific Siting Criteria

- Use private land or public lands already developed and with existing infrastructure
- Use land already used for commercial activity (timberland)
- Avoid major bird migration routes & species of concern habitats
- View of turbines from settled areas better
- Use sites with relatively even ridgelines and gradual approach slopes
- Use areas with existing permanent & secondary access
- Use areas with second growth hardwoods
- Use areas where evidence of human development already noticeable

AMC Unsuitable Areas

- Undeveloped public lands
- Ridgelines with steep slopes, uneven topography, or large bedrock outcrops
- Roadless areas
- Areas with little or no evidence of past human disturbance
- Areas with a lot of critical habitat
- Areas seen from fore & midground (0-5 miles) of public use areas
- Areas that currently receive a high level of backcountry use