

# Designated Areas

## On the Nantahala and Pisgah NFs

### Wilderness (6) – 66,388 ac

- Ellicott Rock – 3,394 ac
- Joyce Kilmer/Slickrock- 13,562ac
- Linville Gorge – 11,786
- Middle Prong – 7,460
- Shining Rock – 18,483
- Southern Nantahala – 11,703

### Wild and Scenic Rivers (3)

- Chattooga
- Horsepasture
- Wilson Creek

### National Scenic Trail (1)

- Appalachian Trail– 12,450 ac, approximately 240 miles

### Research Natural Areas (2)

- Walker Cove – 53
- Black Mountain – 1,405

### National Historic Area (1)

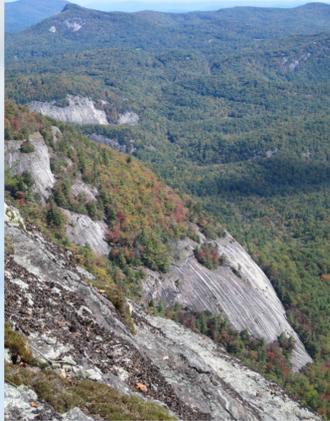
- Cradle of Forestry – 6,540 ac

### Inventoried Roadless Areas (33) – 124,000 ac

- Bald Mountain – 11,227 ac
- Balsam Cone – 10,651 ac
- Barkers Creek (Addition) – 974 ac
- Bearwallow – 4,112 ac
- Big Indian (Addition) – 1,152 ac
- Boteler Peak – 4,215 ac
- Cheoah Bald – 7,802 ac
- Cherry Cove (Addition) – 842 ac
- Chunky Gal (Addition) – 3,467 ac
- Craggy Mountain – 2,651 ac
- Deep Creek/Avery Creek – 1,894 ac
- Dobson Knob – 6,121 ac
- Graveyard Ridge (Addition) – 1,971 ac
- Harper Creek – 7,342 ac
- Jarrett Creek – 7,494 ac
- Laurel Mountain – 5,675 ac
- Linville Gorge (Addition) – 2,795 ac
- Little Indian (Addition) – 646 ac
- Lost Cove – 5,949 ac
- Mackey Mountain – 5,931 ac
- Middle Prong (Addition) – 1,849 ac
- Mt. Mitchell – 629 ac
- Overflow Creek – 3,377 ac
- Sam Knob (Addition) – 2,581 ac
- Sharptop Ridge (Addition) – 592 ac
- Slide Hollow – 192 ac
- Snowbird – 8,496 ac
- South Mills River – 8,618 ac
- Tusquitee Bald – 13,775 ac
- Wesser Bald – 4,087 ac
- Wilson Creek – 4,976 ac
- Woods Mountain – 9,601 ac
- Yellowhammer Branch (Addition) – 1,268 ac



Roan Mountain



Whiteside Mountain

Designated areas on the forest include areas that are nationally designated (i.e. wilderness, roadless areas) and those that are designated in the current forest plan with a particular management that differs from general forest management.

Designated areas are generally unsuitable for timber production.

Total designated area is approximately 268,000 acres, ~34% of the total forest.



Whitewater Falls



Linville Gorge

### Wilderness Study Areas (5)

- Craggy Mountain – 2,380 ac
- Harper Creek – 7,140 ac
- Lost Cove – 5,710 ac
- Overflow – 3,200 ac
- Snowbird – 8,490 ac

### Experimental Forests (3)

- Bent Creek – 5,242 ac
- Blue Valley – 1,400 ac
- Coweeta – 5,482 ac

### Balds – 3,880 ac

### Roan Mountain – 7,900 ac

### Special Interest Areas (40) – 40,787 ac

- Joyce Kilmer Memorial Forest – 3,840 ac
- Santeetlah Crk Bluffs – 495 ac
- Bonas Defeat Gorge – 305 ac
- Bryson Branch – 44 ac
- Cole Mountain-Shortoff Mountain – 56 ac
- Cullasaja Gorge – 1,425 ac
- Ellicott Rock-Chattooga River – 1,997 ac
- Kelsey Track – 256 ac
- Piney Knob Fork – 32 ac
- Scaly Mountain and Catstairs – 130 ac
- Slick Rock – 11 ac
- Walking Fern Cove – 19 ac
- Whiteside Mountain – 220 ac
- Whitewater Falls – 315 ac
- Buck Creek – 103 ac
- Riley Knob/Chunky Gal Mt.n – 215 ac
- White Oak Stamp – 450 ac
- Camp Branch Falls – 2 ac
- Nantahala Gorge Blowing Springs – 190 ac
- Nantahala River Bogs – 60 ac
- Runaway Knob – 140 ac
- Standing Indian – 2,190 ac
- Wildes Cove – 9 ac
- Big Laurel Creek – 550 ac
- Paint Rock – 96 ac
- John's Creek – 8 ac
- Linville Gorge – 10,195 ac
- Dismal Falls – 206 ac
- Fork Ridge - Mount Hardy – 800 ac
- John Rock – 435 ac
- Looking Glass Rock – 1,600 ac
- Mount Pisgah – 325 ac
- Pink Bed Bogs – 205 ac
- Scarlet Oak-South Mills River – 140 ac
- Big Bald Mountain – 115 ac
- Black Mountains – 3,800 ac
- Craggy Mountains – 1,840 ac
- North Fork Ivy Creek – 15 ac
- Roan Mountain – 7,900 ac
- Walker Cove – 53 ac

# Minerals and Energy

## Geology

- The Nantahala and Pisgah National Forests lie within a geological area known as the **Blue Ridge province of the Appalachian Mountains**. These mountains form a southwest to northeast range through western NC and contain many peaks over 1 mile in elevation.
- The Blue Ridge Mountains are primarily comprised of **igneous and metamorphic rock types**. Most of the igneous rocks found in the Blue Ridge are common types; however, the mineral olivine that forms from dunite is considered an “exotic” mineral from the African continent, which was attached to the North American continent until about 350 million years ago.
- Geologic processes that formed the Blue Ridge mountains also produced a multitude of mineral resources of varying potential.
- Common variety minerals are those that are wide spread and do not contain valuable metals or gems. Examples include crushed stone, limestones, and marble.



Massey Branch Quarry

## Active mines for common variety minerals

- The lease, sale, and permitting of mineral activity depends on the type of mineral sought and the mineral ownership. There are 3 active mines on the Nantahala National Forest.
- **Appalachian Properties, Inc. (158 acres)**. Hard rock mineral lease for olivine in Buck Creek, Clay County, Tusquitee Ranger District in the Nantahala National Forest. Management Area Designation 4D.
- **Massey Branch Quarry (36.4 acres)**. An aggregate stone quarry in Graham County, Cheoah Ranger District on the Nantahala National Forest. Management Area 2B.
- **Hewitt Quarry (about 25 acres)**. A limestone (really low-grade marble) quarry in Swain County, Cheoah Ranger District on the Nantahala National Forest (private minerals). Total private mineral area = 300 acres. Management Area Designation 2C.

## Hydroelectric power – Four hydroelectric dams on the Nantahala NF

### Nantahala Project – Duke Energy Carolinas, LLC (Issued February 2012)

Located in western North Carolina on the Nantahala River and on two tributaries, Dicks Creek and White Oak Creek.

This project occupies 41 acres of the Nantahala National Forest.

The Nantahala Project generates an average of 215,159 megawatt hours (MWh) of energy annually.

### Queens Creek – Duke Energy Carolinas, LLC (Issued March 2002)

Located on Queens Creek, 1.5 miles upstream of its confluence with the Nantahala River, near the town of Topton, Macon County, NC.

The project does not occupy any federally-owned lands.

The Queens Creek Project historic annual average generation is 5,000 MWh.

### East Fork Project – Duke Energy Carolinas, LLC (Issued May 2011)

The East Fork Project is located on the East Fork of the Tuckasegee River in western North Carolina and lies within the Tuckasegee River watershed, which is a subbasin of the Little Tennessee River.

The East Fork Project consists of three hydroelectric developments which are, Tennessee Creek, Bear Creek, and Cedar Cliff.

The East Fork Project generates an average of 94,710 MWh of energy annually.

### Tapoco Project – Alcoa Power Generating, Inc. (Issued January 2005)

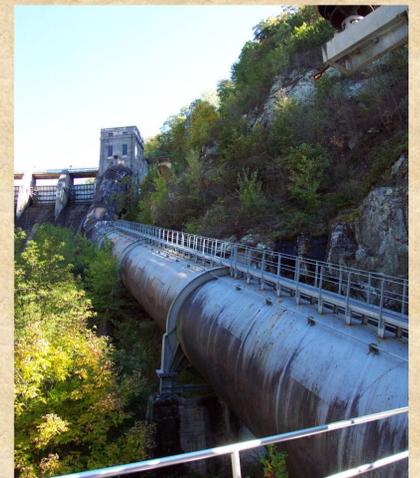
Located on the Little Tennessee and Cheoah Rivers in Graham and Swain Counties in North Carolina and Blount and Monroe Counties in Tennessee.

The project includes four developments: Santeetlah, Cheoah, Calderwood, and Chilhowee.

The Tapoco Project historically has generated about 1,445,582 MWh of electricity annually.



Cheoah Powerhouse



Cheoah Dam Penstock



Cheoah Dam

## Recreational Rock hounding

- A substantial amount of exploration for minerals is done by “rockhounds”, who look for rocks and minerals as a dispersed recreation activity.
- Numerous old mines on National Forest lands and mineralized outcrops are especially attractive to rockhounds.
- Popular rock hounding areas include the Ray Mine near Burnsville, and the Buck Creek olivine deposit in Clay County.
- Minerals and gems that are collected in western NC include olivine, feldspar, mica, emeralds, kyanite, quartz, amethyst, rubies, sapphires.



Quartz from North Carolina  
(width = 13-inches)



Muscovite and Tourmaline  
Ray Mica Mine - Yancey County, NC



Beryl in Granite Pegmatite  
Ray Mica Mine  
Yancey Co., North Carolina  
(30 mm long)

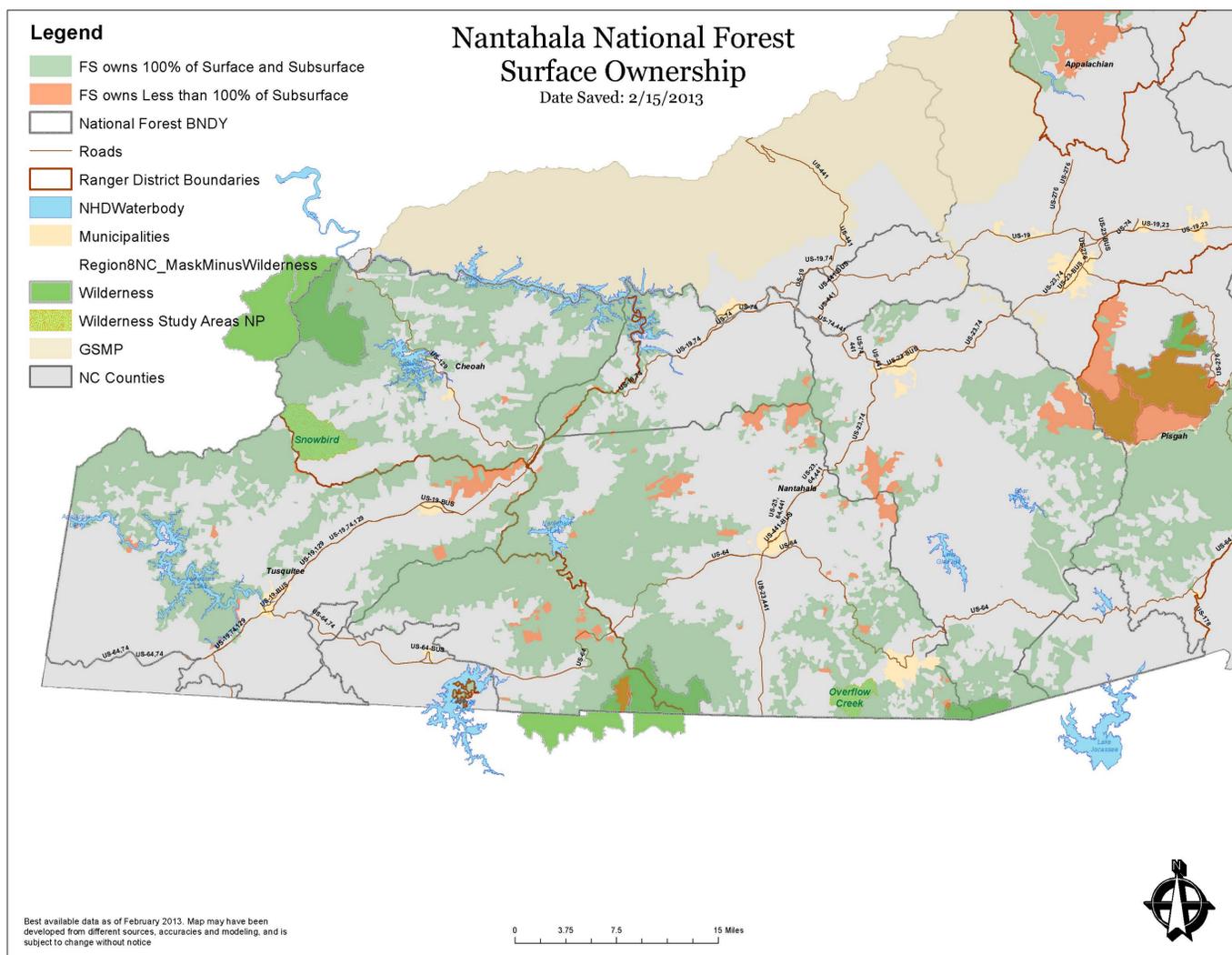
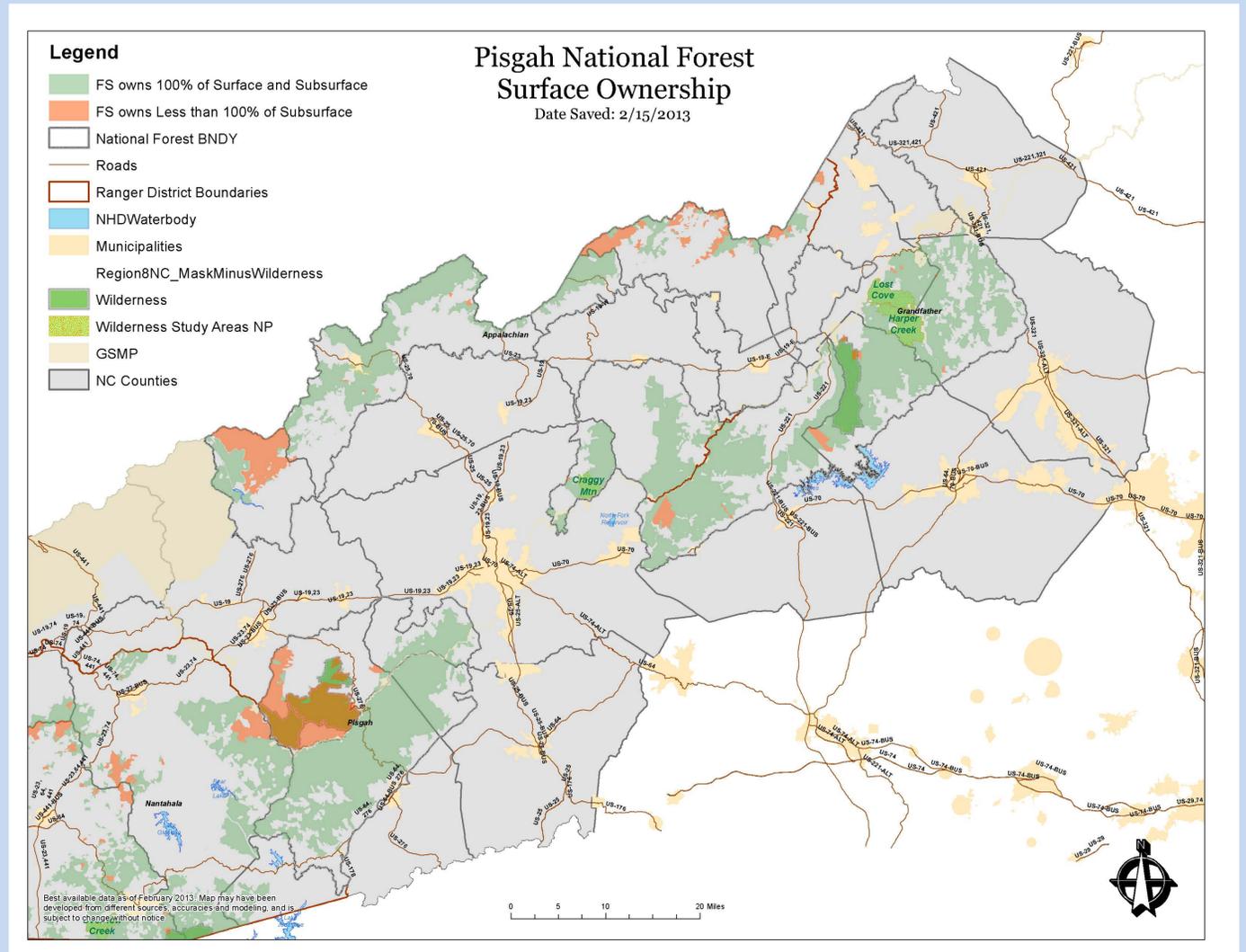


Marble bands

# Subsurface Mineral Ownership

## Exploration of energy minerals has not occurred

- There are no oil, gas, geothermal, or other energy minerals on or within the periphery of the Nantahala and Pisgah National Forests.
- There has been no expression of interest in oil and gas possibilities in this part of North Carolina, nor has there been any assessment conducted.
- An assessment of the area would need to be conducted to ascertain the possible occurrence of oil and/or gas deposits.



## Ownership

- Most of the minerals underlying the Nantahala and Pisgah NFs are federally owned.
- Some of the tracts acquired by the USFS, either had the mineral rights reserved or already had the mineral estate severed.
- A few areas still have split surface and mineral estates.
- The two most prominent are the 300 acres that comprise the Hewitt Quarry in Swain Co, and about 5,000 acres in Avery, Mitchell, and Yancey Counties.

# Acid Producing Rock Formations

Many rock formations underlying National Forest System lands in western NC contain iron sulfide minerals.

Surface excavation can expose areas of sulfide-rich rocks to weathering which can lead to migration of acid runoff to surface water or leaching of acid runoff to groundwater.



## North Carolina Division of Water Quality Standards

- **Avoid** areas underlain by acid rock
- **Minimize** excavation or blasting of acid rock
- **Collect** samples if 50 cubic yards or more are to be removed from an area
- **Test** samples for acid potential and neutralization potential
- **Remove** acid rock and place in a designated waste area in a dry, stable, upland area of the project
- **Treat** acid rock by mixing it with crushed limestone aggregate

Ranger District	Forest Service Road Miles overlaying acid rock formations
Appalachian	26
Cheoah	68
Grandfather	7
Nantahala	205
Pisgah	199
Tusquitee	70
<b>Total</b>	<b>575</b>

