

LEARNING ACTIVITY (SECONDARY LEVEL)

THE DEBATE OVER NORTH SHORE ROAD

LEARNING ACTIVITY OVERVIEW

This lesson activity explores the debate over the construction of North Shore Road through the Great Smoky Mountain National Park. Students will study primary source images, maps and the Historic American Building Survey data pages to determine environmental impact of the North Shore Road project.



OBJECTIVES

After completing this activity, students will be able to:

- Investigate the impact of human activities on the environment by analyzing primary sources, including photographs, written text, and maps.
- Form a position on an environmental issue and articulate a defense of this position.

TIME REQUIRED 2 - 3 class periods

RECOMMENDED GRADE RANGE 9-12

TOPIC/S Environment, Conservation, Maps

SUBJECT/ SUB-SUBJECT Geography

STANDARDS

C3 Standards: Geography—Geographic Representations: Spatial Views of the World

D2.Geo.2.9-12. Use maps, satellite images, photographs, and other representations to explain relationships between the locations of places and regions and their political, cultural, and economic dynamics.

C3 Standards: Geography—Human-Environment Interaction: Place, Regions, and Culture

D2.Geo.4.9-12. Analyze relationships and interactions within and between human and physical systems to explain reciprocal influences that occur among them

D2.Geo.5.9-12. Evaluate how political and economic decisions throughout time have influenced cultural and environmental characteristics of various places and regions.

D2.Geo.6.9-12. Evaluate the impact of human settlement activities on the environmental and cultural characteristics of specific places and regions

C3 Standards: Civics—Processes, Rules, and Laws

D2.Civ.11.9-12. Evaluate multiple procedures for making governmental decisions at the local, state, national, and international levels in terms of the civic purposes achieved.

D2.Civ.12.9-12. Analyze how people use and challenge local, state, national, and international laws to address a variety of public issues.

D2.Civ.13.9-12. Evaluate public policies in terms of intended and unintended outcomes, and related consequences.

D2.Civ.14.9-12. Analyze historical, contemporary, and emerging means of changing societies, promoting the common good, and protecting rights.

CREDITS

Teaching with Primary Sources at Middle Tennessee State University.

PREPARATION

MATERIALS USED

Have these materials ready before the activity:

Images from "Great Smoky Mountains National Park Roads & Bridges, Northshore Road, 1 mile spur at Fontana Dam & Bryson City to Noland Creek, Gatlinburg, Sevier County, TN" One per group of four, or fewer, students. Available online at: <http://www.loc.gov/pictures/item/tn0286/>:

- Image 1. Opposition sign posted on private property at the entrance to the road looking NW. Available online at: <http://www.loc.gov/pictures/item/tn0286.photos.365970p/>
- Image 2. Northshore Road, view of rock cut along road. Available online at: <http://www.loc.gov/pictures/item/tn0286.photos.365971p/>
- Image 3. Northshore Road, bridge before tunnel, deck view. Available online at: <http://www.loc.gov/pictures/item/tn0286.photos.365975p/>
- Image 4. Northshore Road, tunnel portal. Available online at: <http://www.loc.gov/pictures/item/tn0286.photos.365976p/>
- Image 5. End of road from inside tunnel looking NW. Available online at: <http://www.loc.gov/pictures/item/tn0286.photos.365977p/>
- Image 6: Roadway and Fontana Dam looking N. Available online at: <http://www.loc.gov/pictures/item/tn0286.photos.365978p/>

Great Smoky Mountains National Park (Map; 1951). One per group of four, or fewer, students. Available online at: <http://www.loc.gov/item/99446162/>

GREAT SMOKY MOUNTAINS NATIONAL PARK ROADS & BRIDGES, HAER NO. TN-35-I NORTHSHORE ROAD (data pages). One per group of four, or fewer, students. Available online at: <http://cdn.loc.gov/master/pnp/habshaer/tn/tn0200/tn0286/data/tn0286data.pdf>

Primary Source Analysis Tool (One per student).

Available online at: <http://www.loc.gov/teachers/primary-source-analysis-tool/>
or Printable http://www.loc.gov/teachers/usingprimarysources/resources/Primary_Source_Analysis_Tool.pdf.

Optional: Computers, so that students can zoom in on various features of the maps.

RESOURCES

Background for the activity:

The teacher should read and become familiar with GREAT SMOKY MOUNTAINS NATIONAL PARK ROADS & BRIDGES, HAER NO. TN-35-I NORTHSHORE ROAD (data pages).

Available online at: <http://cdn.loc.gov/master/pnp/habshaer/tn/tn0200/tn0286/data/tn0286data.pdf> .

PROCEDURE

ACTIVITY

Investigation:

1. Circulate image 1 (Opposition sign posted on private property at the entrance to the road looking NW. Available online at: <http://www.loc.gov/pictures/item/tn0286.photos.365970p/>) and ask each student to complete a Primary Source Analysis Tool <http://www.loc.gov/teachers/primary-source-analysis-tool/>. Select questions from the Teacher's Guide: Analyzing Photographs and Prints <http://www.loc.gov/teachers/usingprimarysources/guides.html> to focus and support their analysis.
2. When they have completed their individual analysis tools, ask them to discuss in small groups: What are the issues raised by this picture? What details can they pick out to help determine what has happened in the past, and what is still being debated? What questions do they have that might be answered with further study? Ask each group to share some of the questions generated in their groups with the rest of the class.
3. Explain to students that they will be learning more about the arguments for and against the North Shore Road development, and that eventually they will need to choose a side and debate its merits. To prepare, as they analyze primary sources, they should continually record evidence for both sides of the debate in their notebooks.
4. Ask students to read the first paragraph of page 3, and pages 14 and 15 of the National Park Services report on the Northshore Road. (Available online at: <http://cdn.loc.gov/master/pnp/habshaer/tn/tn0200/tn0286/data/tn0286data.pdf>.) While students read the data pages, encourage them to use the Great Smoky Mountains National Park map from 1951 (Available online at: <http://www.loc.gov/item/99446162/>) to place the reading in context. If time permits, students can skim the rest of the report, highlighting arguments for and against the road.
5. In small groups, students should discuss what they have learned about the arguments supporting and opposing the road development project. Why were some in favor of the road project, while others were opposed? What details emerge from the reading of the data pages that enhance their understanding of the debate? Students should record arguments and evidence supporting and opposing the road development in their notebooks.
6. Circulate images 2, 3, 4, 5, and 6 of North Shore Road. Ask students to work in small groups to describe the various ways that the environment has been affected – or not affected -- by construction in these images. Students should update their notebooks to reflect what they learn from this analysis.
7. Finally, ask the student groups to return to the 1951 map of the park. What roads are located in this area? Where is the proposed North Shore Road? How does the construction of North Shore Road affect the conservation of the southwest section of the park? Again, students should update their notebooks with arguments supporting and opposing the road development.

Synthesis:

Divide the class into two groups and facilitate a debate on the construction of the road. In constructing their arguments, students should incorporate the information they learned during primary source analysis. As an option, students may also conduct additional research – including research using secondary sources – to further develop their arguments.

In addition to the oral debate, students can also write an essay taking a position and supporting it with evidence from their analyses of the primary sources.

EXTENSION

- Ask students to research how this debate was resolved and write a letter to the editor either in favor of or opposed to the resolution.
- Ask students to compare and contrast the 1980 map of the Great Smoky Mountain National Park, available online at: <http://www.loc.gov/item/82696147/> with the 1926 map of the proposed area for the park, available online at: <http://hdl.loc.gov/loc.gmd/g3902g.np000172>. How was the landscape changed by the construction of Fontana Dam? Then ask students to research the benefits and draw-backs of the dam.

EVALUATION

Teachers can use student debate notes and performance to evaluate students' ability to analyze primary sources and synthesize the information to take an informed position on an environmental issue. Teachers might evaluate the quality of:

- A clearly defined position regarding the North Shore Road, supported with evidence from the primary sources.
- A well-structured argument designed to persuade others that their position is correct.



1. Opposition sign posted on private property at the entrance to the road looking NW. - Great Smoky Mountains National Park Roads & Bridges, Northshore Road, 1 mile spur at Fontana Dam & Bryson City to Noland Creek, Gatlinburg, Sevier County, TN. <http://www.loc.gov/item/tn0286/>



2. Northshore Road, view of rock cut along road. - Great Smoky Mountains National Park Roads & Bridges, Northshore Road, 1 mile spur at Fontana Dam & Bryson City to Noland Creek, Gatlinburg, Sevier County, TN <http://www.loc.gov/pictures/item/tn0286.photos.365971p/>



3. Northshore Road, bridge before tunnel, deck view. - Great Smoky Mountains National Park Roads & Bridges, Northshore Road, 1 mile spur at Fontana Dam & Bryson City to Noland Creek, Gatlinburg, Sevier County, TN. Available online at: <http://www.loc.gov/pictures/item/tn0286.photos.365975p/>



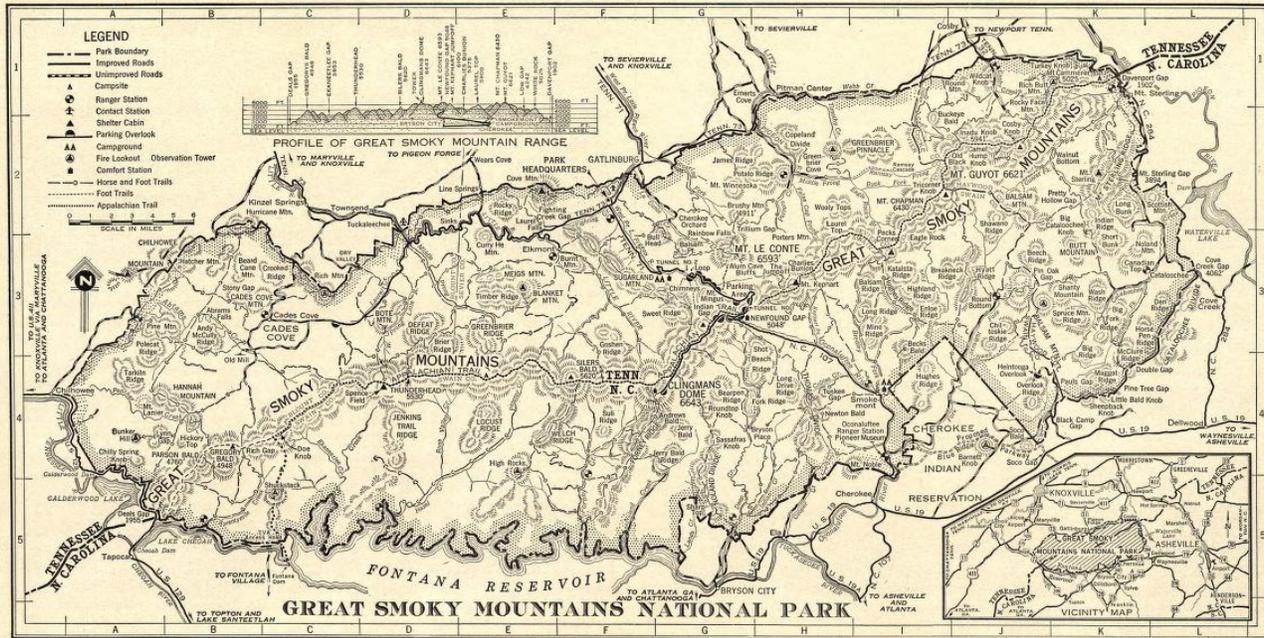
4. Northshore Road, tunnel portal - Great Smoky Mountains National Park Roads & Bridges, Northshore Road, 1 mile spur at Fontana Dam & Bryson City to Noland Creek, Gatlinburg, Sevier County, TN
<http://www.loc.gov/pictures/item/tn0286.photos.365976p/>



5. End of road from inside tunnel looking NW. - Great Smoky Mountains National Park Roads & Bridges, Northshore Road, 1 mile spur at Fontana Dam & Bryson City to Noland Creek, Gatlinburg, Sevier County, TN <http://www.loc.gov/pictures/item/tn0286.photos.365977p/>



6. Roadway and Fontana Dam looking N. - Great Smoky Mountains National Park Roads & Bridges, Northshore Road, 1 mile spur at Fontana Dam & Bryson City to Noland Creek, Gatlinburg, Sevier County, TN <http://www.loc.gov/pictures/item/tn0286.photos.365978p/>



ROAD DISTANCES

To--	From--			Remarks	Map index
	Gatlinburg entrance	Cherokee entrance	Elevation		
	Miles	Miles	Feet		
Park Headquarters	1.5	28.3	1,463	Office of superintendent	F-2
Ocumatchee Ranger Station	27.9	23.9	2,023	Office of assistant chief ranger	F-4
Chimney Campground	6.5	23.6	2,120	In Tennessee section on transmountain highway	G-3
Smokemont Campground	24.6	5.2	2,198	In North Carolina section on transmountain highway	I-4
Chimney Cove Bridge	8.7	21.1	3,550	Parking area above lower tunnel	G-3
Alum Cave Parking Area	10.5	19.3	3,830	Start of trail to Arch Rock, Alum Cave Bluffs, and Mount Le Conte	G-3
Cherokee Orchard	4.7	35.5	2,550	Start of trails to Mount Le Conte and Rainbow Falls	G-2
Newfound Gap	15.0	14.8	5,048	Highest point on transmountain highway. Start of Clingmans Dome Highway, trail to Mount Le Conte and points east on Appalachian Trail	G-3
Indian Gap	16.3	16.1	5,266	Historic pass through Smokies used by Indians, early settlers, and armies during War Between the States	G-3
Forney Ridge Parking Area	22.5	22.5	6,311	Highest point on higher highway in East. Start of trail to Clingmans Dome Tower, Andrews Bald, and points west along Appalachian Trail	G-4
Fighting Creek Gap	4.6	31.4	2,320	Start of trail to Laurel Falls and Cove Mountain fire tower	F-2
Cherokee Indian Reservation	31.3	1.5	1,000	Cherokee tribal customs preserved here	G-1
Little River Gorge	5.75	32.5	2,000	View of Mount Le Conte from Inspiration Point, drive down scenic Little River Gorge to Townsend and return	E-2 & D-2
Cades Cove	36.0	73.0	1,807	Extensive level area surrounded by towering mountains. Road is narrow. Unobstructed views from nearby peaks	C-3
Tremont	18.2	45.0	1,147	One-half day drive	D-3
Greenbrier	13.0	45.0	1,680	Beautiful stream flowing through virgin forests are within short hiking distance	H-2
Cooly	25.1	52.0	2,459	One-half day drive	J-1
Cataloochee	30.4	60.5	2,063	One-day drive	K-3
Loop trip around western end of park	200	200		One-day drive. Route follows Gatlinburg to park headquarters, to Elkmore, Townsend, Maryville, Tapoco, Topono, Bryson City, Cherokee, Gatlinburg. The most popular one-day drive	

TRAIL DISTANCES

Name	Trail starts	Elevation	Distance round trip	Remarks	Map index
Laurel Falls Trail	Fighting Creek Gap (see Road Distances)	2,500	2.5	One of the most popular hiking trips	E-2
Clingmans Dome Summit	Forney Ridge Parking Area	6,643	1.0	One-half mile paved trail leads to one of the highest peaks in East; highest in park	G-4
Andrews Bald	Forney Ridge Parking Area	5,860	4.0	One of the most popular hikes in park	G-4
Alum Cave Bluffs	Alum Cave Parking Area (see Road Distances)	4,000	5.0	Easy trail, fine views. Best for rose-purple rhododendron in mid-June. Alum Cave Bluffs	G-3
Mount Le Conte: via Alum Cave Bluffs	Alum Cave Parking Area (see Road Distances)	6,593	10.4	Shorecut way to Mount Le Conte and very spectacular. Foot trail only	G-3
via Boulevard	Newfound Gap (see Road Distances)	6,593	16.0	Follows Appalachian Trail to Mount Kephart and thence along Boulevard Trail to Le Conte	G-3
via Cherokee Orchard	Cherokee Orchard via Rainbow Falls	6,593	13.4	Trail passes Rainbow Falls and around Rocky Spur	G-3
via Roaring Fork	Cherokee Orchard via Bullhead	6,593	14.4	Trail passes around Bullhead	G-3
via the Jumpoff	Cherokee Orchard via Trillium Gap	6,593	16.8	Good horse trail	G-3
Charles Button	Gatlinburg and Trillium Gap	6,593	22.4	Longest trip, but very interesting	G-3
Gregorys Bald	Newfound Gap	6,100	6.5	Jagged mountain peaks	H-3
Chimney Tops	Newfound Gap	5,375	8.6	Reminiscent of the rugged Rockies	H-3
Appalachian Trail: Eastern Half	Cades Cove	4,948	11.0	Best display of wild azalea in mid-June	B-4
	Chimney Tops	4,755	3.0	For the experienced hiker. 3 hours, round trip	G-3
	Davenport Gap or Newfound Gap	One Way	51.0	Trail commences at Davenport Gap and follows through 31 miles of absolute wilderness. Trailside shelters are spaced for one-day hikes	K-1, J-2, I-3, H-3, G-3, F-4, E-4, D-4, C-4, B-4, A-5
Western Half	Newfound Gap (or drive the 7.5 miles along highway and start at Forney Ridge Parking Area) or Deals Gap	One Way	40.0	A continuation of the above. The most popular wilderness hikes in the park, following the ridge of the Smokies for 71 miles. Trail is mostly over 5,000 feet in elevation	K-1, J-2, I-3, H-3, G-3, F-4, E-4, D-4, C-4, B-4, A-5
Mount Cammerer	Davenport Gap	5,025	12.0	Fine view of valleys and mountains	K-1
Ramsey Cascades	Greenbrier	4,750	12.0	Large cascades; stands of virgin hardwoods	I-2
Raven Fork Wilderness	Smokemont	4,202	16.0	Largest stand of virgin red spruce and balsam	J-3
Mount Sterling	Mount Sterling Gap	2,835	5.2	Accessible tree cover	K-2
Sharp Top on Noland Divide	Bryson City (at park line)	3,430	4.0	Interesting hike	G-5
Bryson Place	Bryson City	2,411	20.0	Follows Deep Creek to Bryson Place, and Nettle Creek into the fine stand of virgin hardwoods	H-4

The Seasons

Summer days are usually warm or hot in the lowland areas and cool in the higher mountains; the nights are cool. By retreating to the mountains one may invariably find relief from the heat.

Spring arrives early in the lowland areas and progressively later at higher elevations. Weather conditions are particularly favorable in autumn, with less rainfall at that season. Winters are variable, both as to severity and length, but they normally are mild in the lowlands.

Rain, snow, and fog often are encountered in the mountains during the winter. Roads are kept open all year, but the transmountain highway sometimes is closed for a few hours during heavy snow or sleet storms when snowplows cannot keep it open. Snows are infrequent in the park, but persons planning to drive through in winter should take chains. Roads are posted if driving conditions are unfavorable.

For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.—Price \$2.75 per 100 copies

How To Reach the Park

Paved highways from all States converge at Knoxville, Tenn., and Asheville, N. C. Bus lines maintain service to both cities. The Southern Railway and the Louisville & Nashville Railroad serve Knoxville; the former also serves Asheville. Knoxville may also be reached by American, Capital (PCA), and Delta Airlines; Asheville, by Capital (PCA), Delta, and Piedmont Airlines. Buses make seven trips each way, daily, between Knoxville and Asheville, going through the park via Gatlinburg and Cherokee. North Carolina towns bordering the park may be reached by direct buses from Atlanta and Chattanooga. Excursions by bus also may be made from Knoxville, stopping overnight at Gatlinburg and continuing to Knoxville via Maryville, Tenn. Smoky Mountain Tours, Inc., with offices in both Knoxville and Asheville, operate personally conducted sightseeing stages through the park between the two cities frequently during the summer months. The Southern Railway offers both one-way and round-trip tickets, providing travel by stage through the park between Knoxville and Asheville.

Roads and Trails

There are 66 miles of high standard roads in the park including the transmountain highway from Gatlinburg, Tenn., to Cherokee, N. C. Clingmans Dome Highway reaches an altitude of 6,311 feet, the highest highway in the East. Seventy miles of secondary roads and 653 miles of horse and foot trails are open to the public for hiking and riding.

The park highways offer exceptional opportunities to view the grandeur of the Great Smokies. The transpark highway crosses the mountain range, and spur roads and trails lead to many points of interest.

There are trails of all types to suit the individual requirements of park visitors. Some are 4 feet wide on easy gradients; some are improved footpaths; others merely a track through the forest. All improved trails are marked with directional signs. Hikers using graded trails need not wear any special hiking clothes, since well-traveled trails are maintained clear of brush and are drained. However, stout low-heeled shoes are recommended.

Trailside Shelters and Campsites

There are seven trailside shelters and three trailside campsites along the 71-mile section of the Appalachian Trail in this park from Davenport Gap to Newfound Gap (31 miles) and Newfound Gap to Fontana Dam (40 miles). These are nearly equally spaced for 1-day hiking trips. Shelters are closed on three sides and provide simple bunk accommodations for six persons. A fireplace is in front and water is available nearby. No shelter is provided at the three campsites. Use of the shelters is normally restricted to one night. Camping is permitted along the trail only at the above points and a camping permit for each trip is required. (See Rules and Regulations.) Because of the scarcity of fuel at these sites, hikers are advised to carry primus type stoves.

Horses, Pack Animals, and Guide Service

Horses and pack animals can be rented by the hour, day, or for longer periods in some of the towns bordering the park. Guide service is also available in these towns.

Gift: Chas. B. Peterson III

Great Smoky Mountains National Park. (1951)
<http://www.loc.gov/item/99446162/>