

**HISTORIC TRAIL MAPPING
IN SIERRA NEVADA MOUNTAINS OF NORTHERN CALIFORNIA**
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ABSTRACT: A pedagogical technique that can be generalized for use with other students, GPS and GIS are used for teaching cartography, projections and spatial concepts as they relate to a historic firebreak and transportation route called Ponderosa Way in northern California. Ponderosa Way was an 800 mile long firebreak planned to protect the big timber at high elevations from brush fires started in the foothills. Constructed by the Civilian Conservation Corps (CCC) during the Depression, the U.S. Army became interested in Ponderosa Way during World War II as an alternate transportation route for tanks in the event of a west coast invasion by Japanese. Undergraduate students during August 2010 explored a 57 mile stretch of the firebreak using GPS and located four drainage basin crossings on digital topographic maps. Photos, maps and local knowledge help us understand the historical significance of this rugged route that passes through private and public lands.

BACKGROUND

Located on the western slopes of the foothills of the Sierra Nevada Mountains of California, Ponderosa Way was an 800 mile long firebreak planned to protect the valuable timber at high elevations from naturally occurring brush fires spreading from the valley and hills below. Constructed by the Civilian Conservation Corps (CCC) during the Depression years, the U.S. Army became interested in Ponderosa Way during World War II as an alternate north-south transportation route for tanks in the event of a west coast invasion by Japanese. The purpose of a larger research project is to clarify the present location and condition of the Ponderosa Way firebreak/truck trail and to understand the historical and current implications of its construction. The purpose of the present field project was to identify and map a 57 miles segment of Ponderosa Way in August 2010.

There is a surprising lack of published information and local knowledge regarding this historic firebreak and transportation route. It is believed that a number of substantial bridges were constructed by the Army or by contract with California agencies for the purpose of transporting heavy equipment during and prior to World War II. It seems that some segments of Ponderosa Way became dirt, gravel or paved roads, some segments are known today by a different name, while other sections are trails or simply do not exist. Some creeks are crossed by substantial steel bridges while the route simply stops at the brink of other creeks or canyons. This is an ideal project for geographers to map and conduct field work to find answers to these puzzling questions.

HISTORIC TRAILS AND STUDENT LEARNING

This mapping activity is part of a long term project involving students doing fieldwork and preparing maps in the Department of Geology and Geography GIScience Lab for various segments of the 800 mile long Ponderosa Way. In August 2010 two geography

majors and I spent a week doing field work over a 57 mile stretch of Ponderosa Way and visiting local museums and historical societies. U.S. Geologic Society topographic maps and GPS were used to identify intersections of Ponderosa Way with five drainage basins from Plum Creek not far from the south entrance to Lassen National Park southward to the town of Cohasset located just north of Chico, California. The students were able to have an exceptional educational adventure and integrated learning experience for less than \$500 each and the cost of a plane ticket from Midway Airport to Reno. The project lends itself to multiple field experiences with students studying specific segments of the 800 mile long firebreak/ transportation route.

The area of study has an abundance of Ponderosa Pine trees and a long history of logging and sawmills. Early settlers came to the region by way of the California Trail after traveling the Oregon Trail from Independence, Missouri. Historic towns and cemeteries are visible on the landscape, e.g., the Lyonsville cemetery. This 57-mile segment of Ponderosa Way is located in Tehama and Butte County and passes by the Ishi Wilderness Reserve and the Black Rock area. Evidence of past forest fires and logging activities can be observed.

Students recorded coordinates for 19 points in Lat-Long degrees, minutes, and seconds as well as the Universal Transverse Mercator (UTM) System, Zone 10. Digital topographic maps and imagery were downloaded and pertinent maps printed for use in the field. ArcGIS 10 was used to prepare the final map.

Location	Lat			Long		
DAY 1	degrees	minutes	seconds	degrees	minutes	seconds
Lassen Park Visitor Center	40	26	13.00	121	32	0.30
Ponderosa @ Navion	40	20	34.40	121	46	47.80
Paynes Creek	40	20	20.50	121	46	8.80
Chapman Gulch	40	19	39.20	121	46	34.60
Plum Creek	40	18	44.60	121	47	33.00
Carter Creek	40	17	33.40	121	48	2.30
N Fork Antelope Creek	40	16	51.50	121	45	52.70
Plum Creek Rd@ Ponderosa #1	40	18	6.80	121	47	45.30
DAY 2						
Plum Creek Rd@ Ponderosa #2	40	17	51.90	121	48	0.48
Middle Fork Antelope Creek	40	16	2.80	121	46	28.10
South Fork Antelope Creek	40	15	7.00	121	45	26.40
Peligreen Jeep Trail@Ponderosa	40	14	3.60	121	46	33.30
Mill Creek	40	11	0.40	121	42	40.30
McCarthy Lookout @Ponderosa	40	10	11.70	121	39	56.80
Beaver Creek	40	5	9.90	121	41	51.40
Deer Creek	40	4	13.30	121	42	17.10
Devils Kitchen Lookout	40	3	46.30	121	42	25.52
Lassen Lookout	40	2	20.90	121	43	3.70
Cohasset	39	56	58.70	121	43	10.60

FIGURE 1. Global Positioning System (GPS) coordinates taken August 2010



FIGURE 2. Ponderosa Way from Paynes Creek to Cohasset
(Map prepared by students Greg Weber and Craig Westendorf)

CONCLUSIONS

Meaningful integrated learning objectives of the Department of Geology and Geography, College of Sciences and Eastern Illinois University are being met by involving geography and geology majors and future teachers with social science concentration in several levels

of this project, e.g., field work in the Sierra Nevada Mountains of California, independent studies, supervised research, preparation of student posters for the annual College of Sciences Science fest poster event and papers for student sessions at conferences. Photos, maps, GIS, GPS and local knowledge were integrated and analyzed in the GIScience Lab to help understand the historic significance of this rugged route that passes through private and public lands. The university and wider scholarly and professional community benefits from the creation of new knowledge and the increased preparedness of EIU graduates doing applied geography in the workplace. The Ponderosa Way project contributes to the university mission by providing an integrated learning framework. Students are empowered by learning and using appropriate GIS and GPS technological tools in the field and in the GIScience Lab and future EIU GIScience Center. The project affords an opportunity to make connections among seemingly disparate facts, theories and contexts as we bring together new information, create new knowledge, and make spatial connections through GIScience analysis to solve the mystery of Ponderosa Way.

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