

**Lewis & Clark Trail Research  
Presentation  
to  
Idaho Lewis & Clark Governor's  
Committee  
Powell Ranger Station, Idaho  
September 12, 2014**

**PRESENTER**

Steve F. Russell, PhD, PE  
26393 520th Ave  
Ames, Iowa 50014  
SFR@IASTATE.EDU

RESEARCHER IDENTIFICATION	
<small>The researcher named below has duly applied to use records administered by the National Archives of the United States.</small>	
NAME <i>Steve F. Russell</i>	CARD NO. <i>A85-228</i>
SIGNATURE <i>Steve F. Russell</i>	VALID THROUGH <i>8-5-87</i>
<small>The use of records is governed by published regulations (41 CFR 101-11.6) and is not subject to the provisions of this card.</small>	
ISSUED BY <i>John A. Dwyer</i>	DATE <i>8/5/85</i>

GENERAL SERVICES ADMIN. GSA FORM 3355 (REV. 11-80)

# Lewis & Clark National Historic Trail

## PRESENTER BACKGROUND

### Professional Career Highlights

#### Professional Degrees

- Ph.D. EE Iowa State University, 1978,  
Dissertation Title: *"Spectral Analysis Methods for Noisy Sampled-Data Systems."*
- M.S. EE Iowa State University, 1973,  
Thesis Title: *"Noise and Sensitivity-Measurement Theory for Receiving Systems and Circuits."*
- B.S. EE Montana State University, 1966

#### Work History

- 1966-1970 Collin Radio (RF Design Engineer), Cedar Rapids, Iowa. TACSATCOM first military tactical satellite communication system, low noise radio system development.
- 1970-1975 Iowa State University (Instructor, B-base), Ames, Iowa. Electrical Technology. ISU University Research Fellowship  
University of Iowa: Physics Research Center, research engineer  
Ruscom Engineering: Private Consultant
- 1976-1980 Rockwell-Collins (Engineer/Scientist V, NAVSTAR GPS Program, Avionics Advanced Technology), Cedar Rapids, Iowa.
- 1980-1984 King Radio: Principal Engineer and Head of Advanced Technology Group.
- 1984-2007 Iowa State University: Electrical and Computer Engineering Faculty, Communication Theory, Circuit Theory, Statistics, Discrete Mathematics, Computer Networking, Computer Security, Wireless Security. 5 patents, 37 MS & PhD students graduated, Warren Boast Teaching Excellence Award, chaired various committees, created PhD program in Communications and Digital Signal Processing. Retirement in Spring, 2007, granted Emeritus status.
- 2007-2014 Retirement  
Historic Trails Research  
Traditional Jazz Musician, Band Leader, Music Arranger

# Lewis & Clark National Historic Trail

## TRAIL RESEARCH HIGHLIGHTS

- 1985-2004 – Research on the Lewis & Clark NHT, Idaho & Montana
- 1986-1998 – Research on the Virginia & Lewiston Wagon Road (Bird-Truax Trail)
- 1978-2014 – Research on Historic Trails of Montana and Idaho: Lolo Trail NHL, Nez Perce National Historic Trail, Northern Nez Perces Trail, Southern Nez Perces Trail, Mullan Wagon Road 1854, John Work 1831, Carroll Trail 1875, Oregon-California Trail 1843, Old North Trail (prehistoric), Bozeman Trail, Snake River Expedition 1825, Clift Indian Trails 1869, Florence-Lewiston Wagon Road, 1825 Snake River Expedition, 1872\_WR\_Lewiston\_Mt\_Idaho, 1872\_WR\_Mt\_Idaho\_Lewiston, Boise & Kooskia Trail 1877, Boise & Silver City & California Trail, Boise & Camp Lyons Trail, Bozeman\_Trail\_to\_Virginia\_City, Camp Lewis & Fort Shaw Trail 1875, Carroll\_Trail\_Wagon\_Road\_Montana, Clearwater Battlefield Trail 1877, Clift Wagon Road Exploration 1869, Diamond City & Canyon Ferry Road 1869, Florence & Slate Creek Trail, Florence & Lewiston Wagon Road, Florence & Warren Trail, Fort Boise to Montana Road, Fort Hall North\_South Trail 1850, Freemont Explorations, Goodrich Trail (Idaho City & Rocky Bar), Idaho City & Lewiston Trail, Kelton State Road Idaho, Milner Trail Idaho 1862, Old North Trail (Ice Age), Oregon-California Military Road, Snake Expedition Kittson HBC 1825, Tongue River Road 1880s, Umatilla Road 1867 (Silver City)

# **Lewis & Clark National Historic Trail**

## **BOOKS, MONOGRAPHS, AND WEBSITES**

Geographical report on the Bird-Truax Trail: Its history and geography by Steve F. Russell. Historic Trails Research, Ames, Iowa (1988)

Lewis and Clark Across the Mountains: An Engineer Tracks the Trail by Steve F. Russell (1997-98). Idaho Public Television, (Website:)  
<http://idahoptv.org/lc/echoes/gps/LCengr.cfm>.

Echoes of a Bitter Crossing by Idaho Public Television, (one-hour DVD Video) Bruce Reichert, Producer (1999)

Echoes of a Bitter Crossing: Campfire Discussion by Idaho Public Television, (DVD Video) Bruce Reichert, Producer (1999) (Website:)  
<http://idahoptv.org/lc/echoes/campfire.cfm>

Mystery of Lost Trail Pass: A Quest for Lewis and Clark's Campsite of September 3, 1805, Edited by James R. Fazio, with authors: James R. Wolf, Hadley B. Roberts, Robert Bergantino, J. Wilmer Rigby, and Steve F. Russell. Lewis & Clark Trail Heritage Foundation, Great Falls, Montana. (2000) ISBN-13: 9780967888712

Across the Snowy Ranges: The Lewis and Clark Expedition in Idaho and Western Montana by James R. Fazio, Mike Venso and Steve F. Russell. Woodland Press (hardcover, 204 pages, photos, maps) 1st edition (April 1, 2001) ISBN-13: 978-0961503147

Virginia City and Lewiston Wagon Road Report: 1865-1870 by Steve F. Russell. Historic Trails Research, Ames, Iowa (2001) ISBN-13: 978-0-9676327-1-1

Hike Lewis and Clark's Idaho by Mary Aegerter and Steve F Russell. Caxton Press (2002). Distributed by the University of Nebraska Press for the University of Idaho Press. ISBN-13: 9780893012571

Ordway's Salmon River Fishing Expedition: Research Results for Summer 2002 by Steve F. Russell. Historic Trails Research, Ames, Iowa. (2003) HTR Technical Report No. 01A03

Ordway's Salmon River fishing Expedition, (Brochure) (c) Steve f. Russell. Idaho Department of Fish and Game, Lewiston, Idaho (2002)

Lewis and Clark : Lolo trail precision survey: summary of research results by Steve F. Russell. Historic Trails Research, Ames, Iowa (2005)

Lewis and Clark Across the Mountains: Mapping the Corps of Discovery in Idaho by Steve F. Russell, Idaho State Historical Society, Boise, Idaho (2007) ISBN-10: 0-931406-16-1

## **AND NUMEROUS PRESENTATIONS**



# Lewis & Clark National Historic Trail

## Echoes of a Bitter Crossing

Idaho Public Television



### CAMPFIRE DISCUSSION

Left to Right:

Steve F. Russell, Cort Conley, Norm Steadman,  
Chuck Raddon, Alan Pinkham



Steve F. Russell

### What is Your Greatest Concern for the Lewis & Clark Trail?

My greatest concern for this trail is that right now, it's in a condition that is as close to the condition it was in when Lewis and Clark passed as we can hope for or imagine. **My concern is that things will happen that will change the historic character of the trail so that we would no longer recognize it as an historic trail and no longer recognize this route and this land as what Lewis and Clark might recognize if they came through day.**

If Lewis and Clark came through today, particularly Smoking Place, Willow Ridge, Bold Butte, down into Hungry Creek, except for some vegetation changes, I think they would really see essentially the same country they saw when they passed. But I'm real concerned about what I would call development, in the sense that development would occur to where this route would become an established trail of campsites, and lose that historic wild character.

# **Lewis & Clark National Historic Trail**

**\*IDENTIFICATION**

**\*DOCUMENTATION**

**PRESERVATION**

**INTERPRETATION**

**\*By Steve F. Russell**

# **Lewis & Clark National Historic Trail**

## **Researchers on the Lewis and Clark Trail in Idaho**

### **HISTORICAL**

- 1814 – Nicholas Biddle & Paul Allen
- 1866 – George B. Nicholson
- 1893 – Elliot Coues
- 1898 – Olin D. Wheeler
- 1905 – Reuben G. Thwaites
- 1925 – Jack Harlan

### **CONTEMPORARY**

- c1964 – Ralph Space
- 1966 – John Peebles
- 1968 – Ralph Space
- c1969 – Andy Arvish & Ralph Space
- c1982 – Karl Roenke
- 1986 – Steve F. Russell
- 2000 – Martin Plamondon
- 2002 – Gene and Molly Eastman
- 2004 – Ted Hall
- 2005 – Gene and Molly Eastman
- 2007 – Steve F. Russell

# Lolo Trail National Historic Landmark

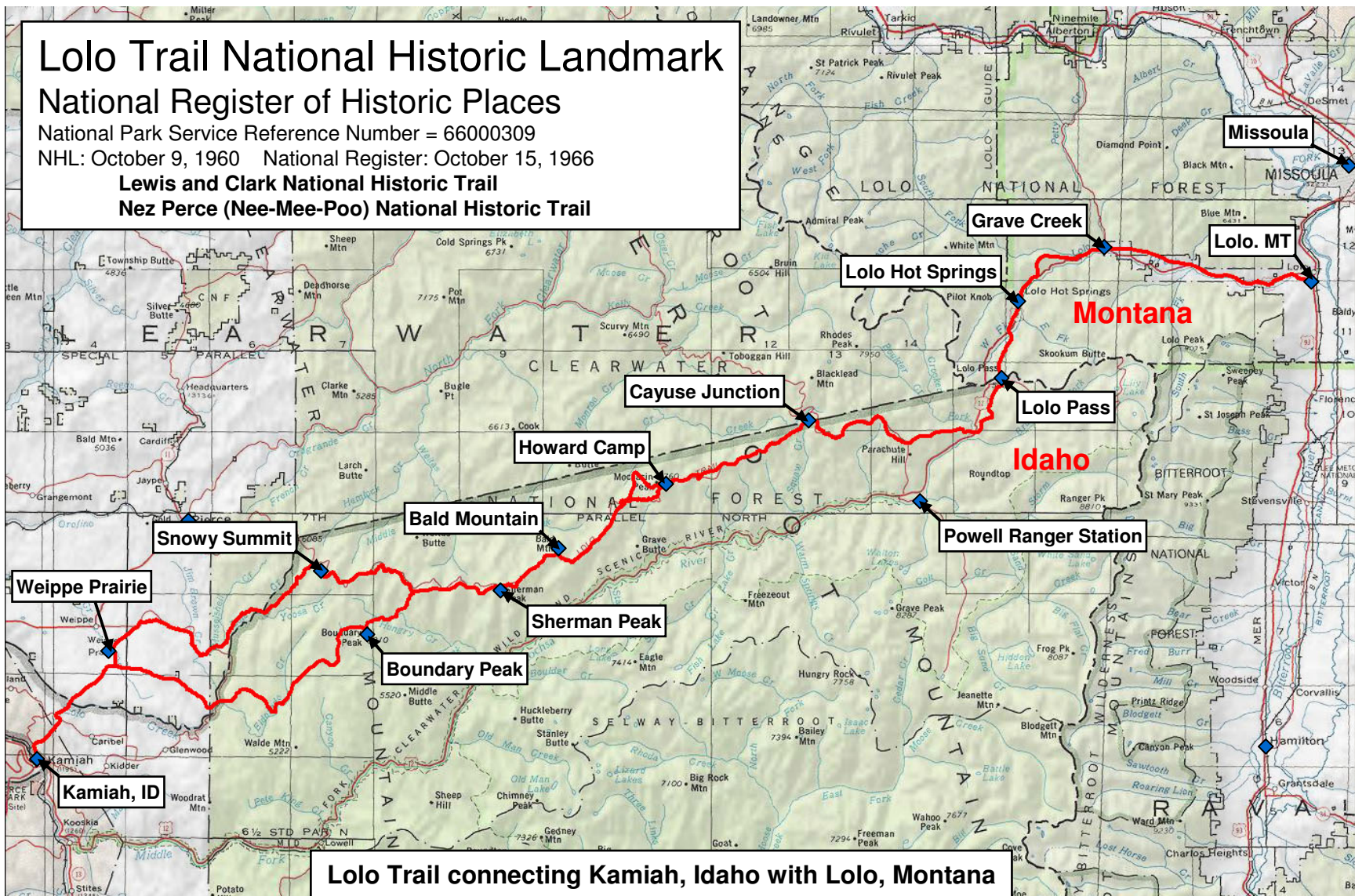
## National Register of Historic Places

National Park Service Reference Number = 66000309

NHL: October 9, 1960 National Register: October 15, 1966

**Lewis and Clark National Historic Trail**

**Nez Perce (Nee-Mee-Poo) National Historic Trail**



Steve F. Russell



## **Lewis & Clark National Historic Trail**

### **LEWIS & CLARK IN NORTH-CENTRAL IDAHO 1805-1806** **(83 Days and 369 trail miles in North-Central Idaho)**

Westbound: Crossed from Montana to Idaho, Lolo Pass, September 13, 1805  
Crossed from Idaho to Washington, Lewiston, October 10, 1805

Eastbound: Crossed from Washington to Idaho, Lewiston, May 5, 1806  
Crossed from Idaho to Montana, Lolo Pass, June 29, 1806

#### **Major Trail Segments**

104 TOTAL MILES; Lolo Pass to Weippe Prairie (Party); (Westbound), Sep 13 to Sep 22, 1805

65 TOTAL MILES; Weippe Prairie to Lewiston (Party); (Westbound), Sep 22 to Oct 10, 1805 (includes travel on water)

81 TOTAL MILES – Lewiston to Weippe Prairie (Party), (Eastbound), May 5 to Jun 10, 1806

134 TOTAL MILES – Kamiah to Snake River Canyon and Return (Ordway), May 27 to Jun 2, 1806

**I have hiked all the public land and whatever private land was available to me.**

# **Lewis & Clark National Historic Trail**

## **HIGHLIGHTS**

Preserving a Rare Heritage Resource of National Interest

1. There are 369 miles of Lewis & Clark Trail in North-Central Idaho.
2. Of these, approximately 149 miles are on public land and 220 miles are on private land.
3. Of the 149 miles on public land, about 116 miles are in prime condition and exhibit the characteristics of the old indigenous trails of the 1800s.
4. The remaining 33 miles have been impacted by logging, and road building.
5. The 116 miles of prime Lewis & Clark Trail represent a valuable national legacy for historic trails, as much as, if not more than, the Oregon Trail, Old Santa Fe Trail, or any of the other National Historic Trails such as the Nez Perce National Historic Trail.
7. What I ask for, from the State of Idaho, the Forest Service, the National Park Service, and all people in the Nation, is that we work together to protect this rare heritage resource from destruction by development, misguided and uninformed management, and any other potential agents of unwise change or outright destruction.

# **Lewis & Clark National Historic Trail**

## **HIGHLIGHTS (continued)**

### **Preserving a Rare Heritage Resource of National Interest**

8. By careful planning, management, and protection, this trail can be preserved for future generations, generations of stake holders who do not yet have a place at the table. It is up to the current generation to keep their ambitions and egos in check, and to act, in a selfless way, in the best interest of present and future trail enthusiasts.

9, My 27 years of scholarly research on historic trails, many of those devoted to the precise determination of the location of the Lewis & Clark trail treads and campsites, provides most of the necessary information to develop and implement a management plan that truly deserves the label of “Preserving a Rare Heritage Resource.”

10. Now, 2014, is the time to act and set in place management practices and protections for this trail. I have been struggling to make this happen since the early 1990s, but it is clear that many people across many organizations and groups are needed to make it happen -- not just one person.

## **Lewis & Clark National Historic Trail**

**PLEASE TAKE UP THE FLAG TODAY FOR  
PRESERVING THIS RARE AND  
REMARKABLE LEGACY OF WESTERN HISTORY**

***IDAHO'S GIFT TO THE NATION***



# Lewis & Clark National Historic Trail

## RESEARCH METHODOLOGY

### *INFERENCE*

*A conclusion reached on the basis of evidence  
and reasoning.*

- We all use inference in our private lives and in our work lives. Inference is everywhere! However, nobody is alive today that has any first-hand knowledge of Lewis and Clark and the trails they traveled. In this area of research, top-notch inference skills are essential.
- My inference skills are derived from a 43-year career in research and development using the highest quality academic research standards and the inference skills it requires.
- My trail research inference skills were obtained through 27 years of primitive camping and hiking the erosion traces of many trails and wagon roads. My skill in being able to identify the trail characteristics of, and the differences among, historic trails, Forest Service trails, wild game trails, cow trails, hunter trails, etc, It has taken years of on-the-ground experience.
- These inference skills were also strengthened by years of using logic and reasoning as well as using tools such as GPS, GIS and mathematical methods of data analysis.
- For the basis of my research, I use only original sources such as historic journals and maps, geographic clues, topography, satellite photos, and historic aerial photos.
- There is seldom an absolute truth that exists for things historical. It is no less true for historic trails. Trails researchers can engage in a heated argument that they are right and you are wrong but what they really are saying is the “My inference skills are better than yours.”

# Lewis & Clark National Historic Trail

## MANAGEMENT GUIDELINES AND DOCUMENTATION

The Clearwater National Forest Plan is currently in revision. If the Forest Service is receptive, this would be an excellent time to add historic trail management into the plan. Since the plan is broad, a short paragraph is all that is need to bring attention to this area. The paragraph can give an overview and then refer to an ancillary document entitled “Historic Trail Management and Maintenance Practices.”

This ancillary document can specify management goals for historic trails. It can define who is in control of, and responsible for, this management. It can also flesh out the details of how the trail is maintained. (Currently, trail crews maintain all trails to the same standards).

The number one priority of historic trail management should be to kept the indigenous nature of the trails. **The following practices are not acceptable** for management of an historic trail: 1) rerouting, 2) extending the length of switchbacks, 3) installing waterbars, 4) covering the natural surface with gravel, asphalt, or other non-natural material, 5) building modern trailheads.

## **Lewis & Clark National Historic Trail**

### **MANAGEMENT GUIDELINES AND DOCUMENTATION (Cont.)**

Selected small portions of these trails can be brushed out and interpreted for forest visitors. Brushing should only be done as wide as needed for foot and horse traffic – no wider. Small downfall less than 6 inches in diameter and less than 14 inches above the trail surface should be left in place to discourage motorcycle and mountain bike traffic. ATV use is a separate problem. I have seen where ATV users carry chain saws and cut out trails to fit them -- in defiance of Forest Service policy. If they decide to cut it out, windfalls are not a barrier.

It has been the practice of the Clearwater National Forest to manage the trails of the Lolo Trail corridor in such a way as to cater to the needs of a very small group of people, e.g. the Appaloosa Horse Club and the Idaho Outfitters and Guides who work the Lolo Motorway area. This preferential treatment has to stop. It is public land on a national scale and should be managed for everyone, not for just a few local influential groups.

**THE CLEARWATER NATIONAL FOREST DOES NOT SEEM TO  
UNDERSTAND THE MEANING OF THE WORD “NATIONAL”**

## Lewis & Clark National Historic Trail

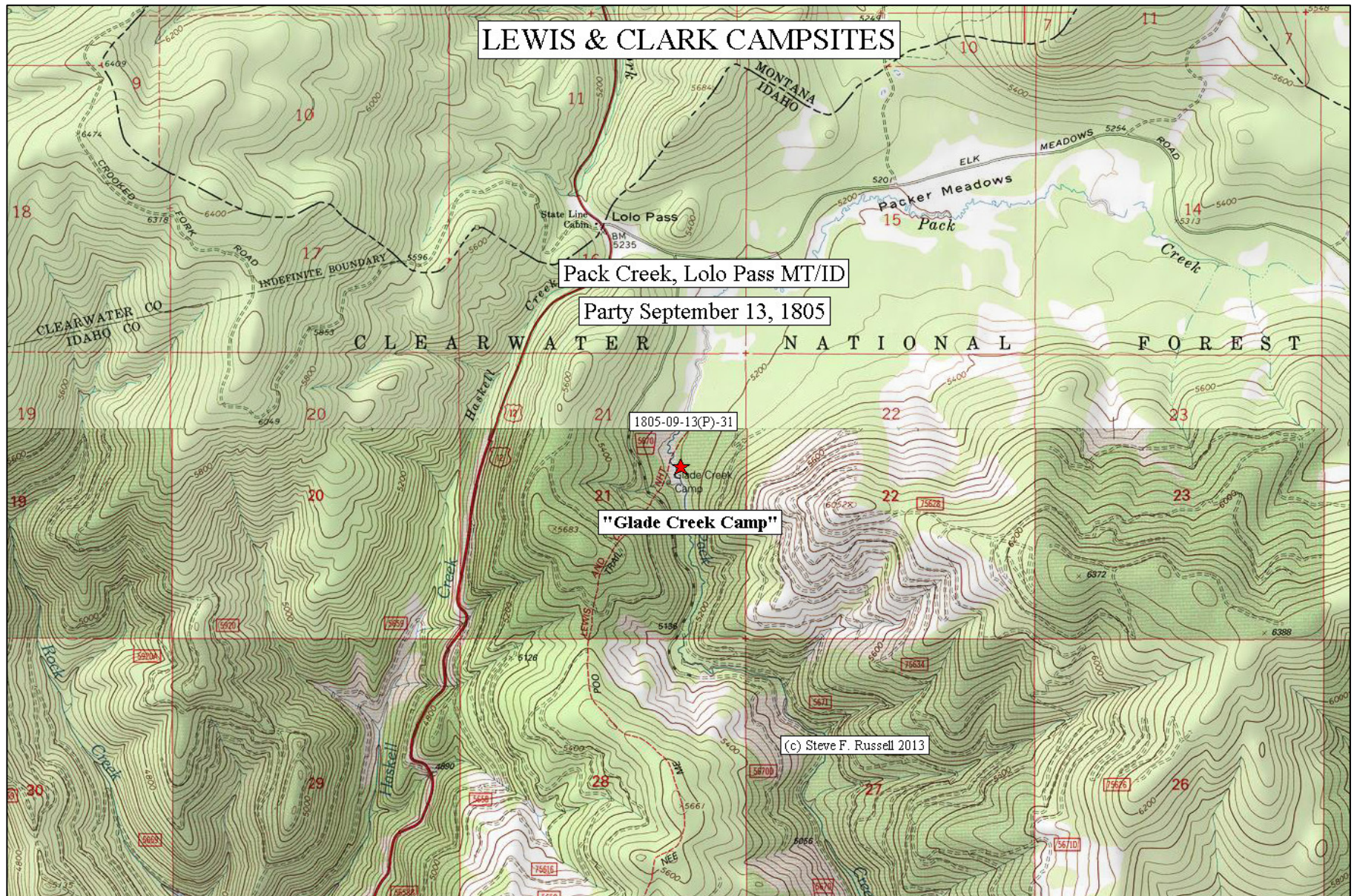


Steve F. Russell

Glade Creek Camp Sep 13, 1805  
Packer Meadows, Lolo Pass



# Lewis & Clark National Historic Trail



Steve F. Russell



## Lewis & Clark National Historic Trail

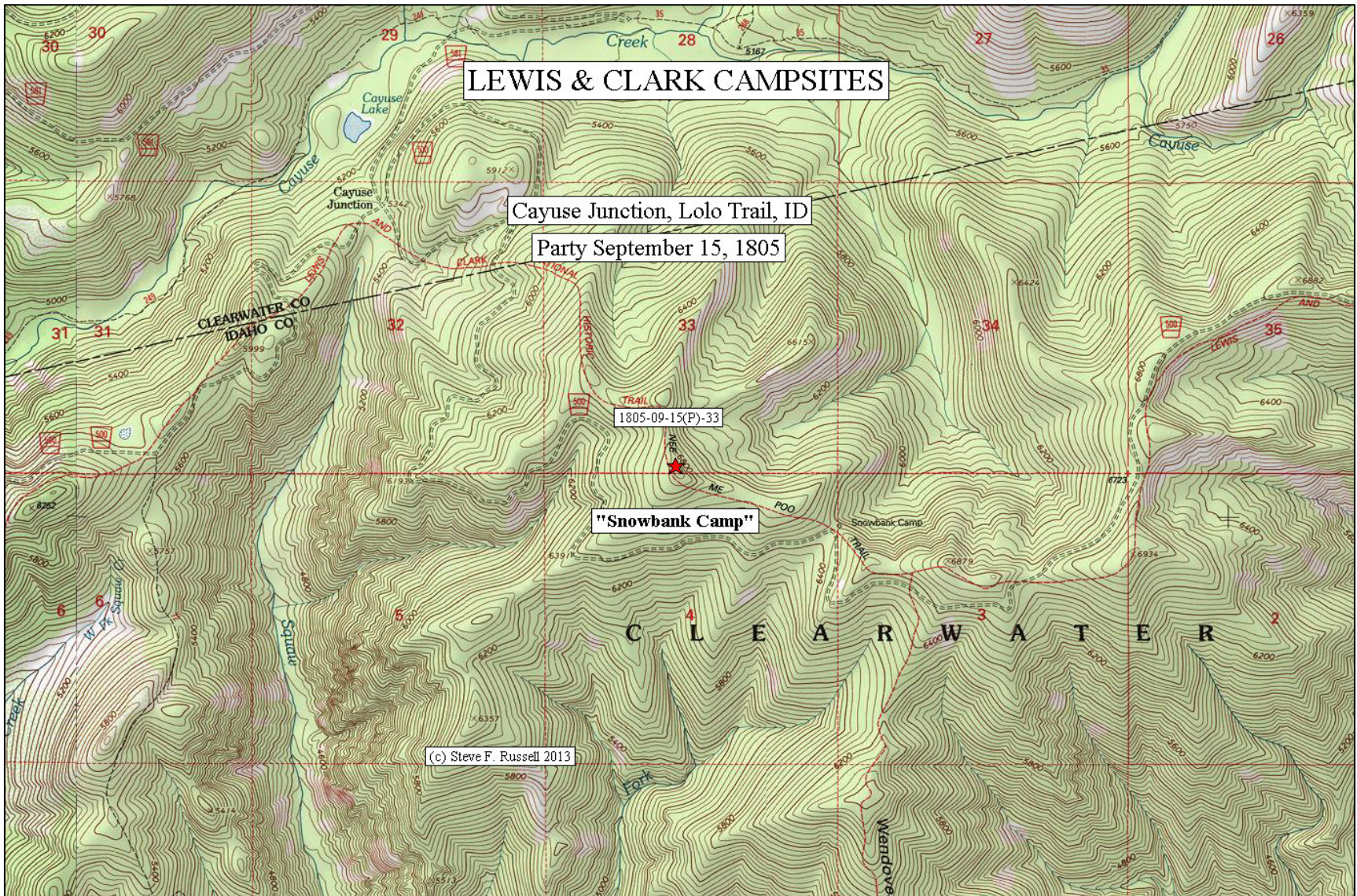


Steve F. Russell

Snowbank Camp Sep 15, 1805  
Lolo Trail east of Cayuse Junction



# Lewis & Clark National Historic Trail



**Steve F. Russell**



# Lewis & Clark National Historic Trail



Steve F. Russell

Snowbank Camp Sep 15, 1805  
Lolo Trail east of Cayuse Junction



## Lewis & Clark National Historic Trail

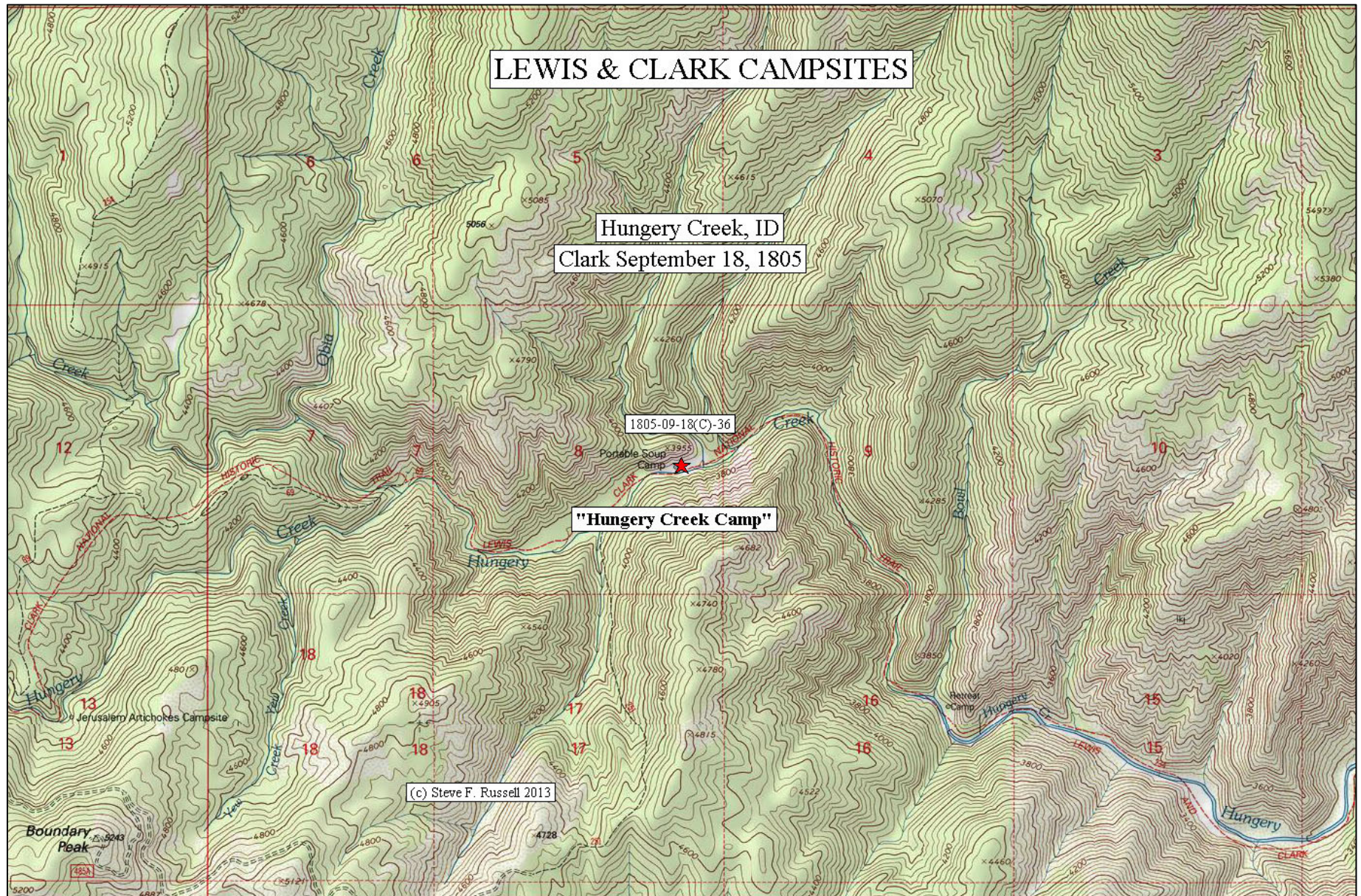
Steve F. Russell



Hungry Creek Camp (Clark) Sep 18, 1805  
Hungry Creek



# Lewis & Clark National Historic Trail



Steve F. Russell

© 2014 Steve F. Russell



## Lewis & Clark National Historic Trail

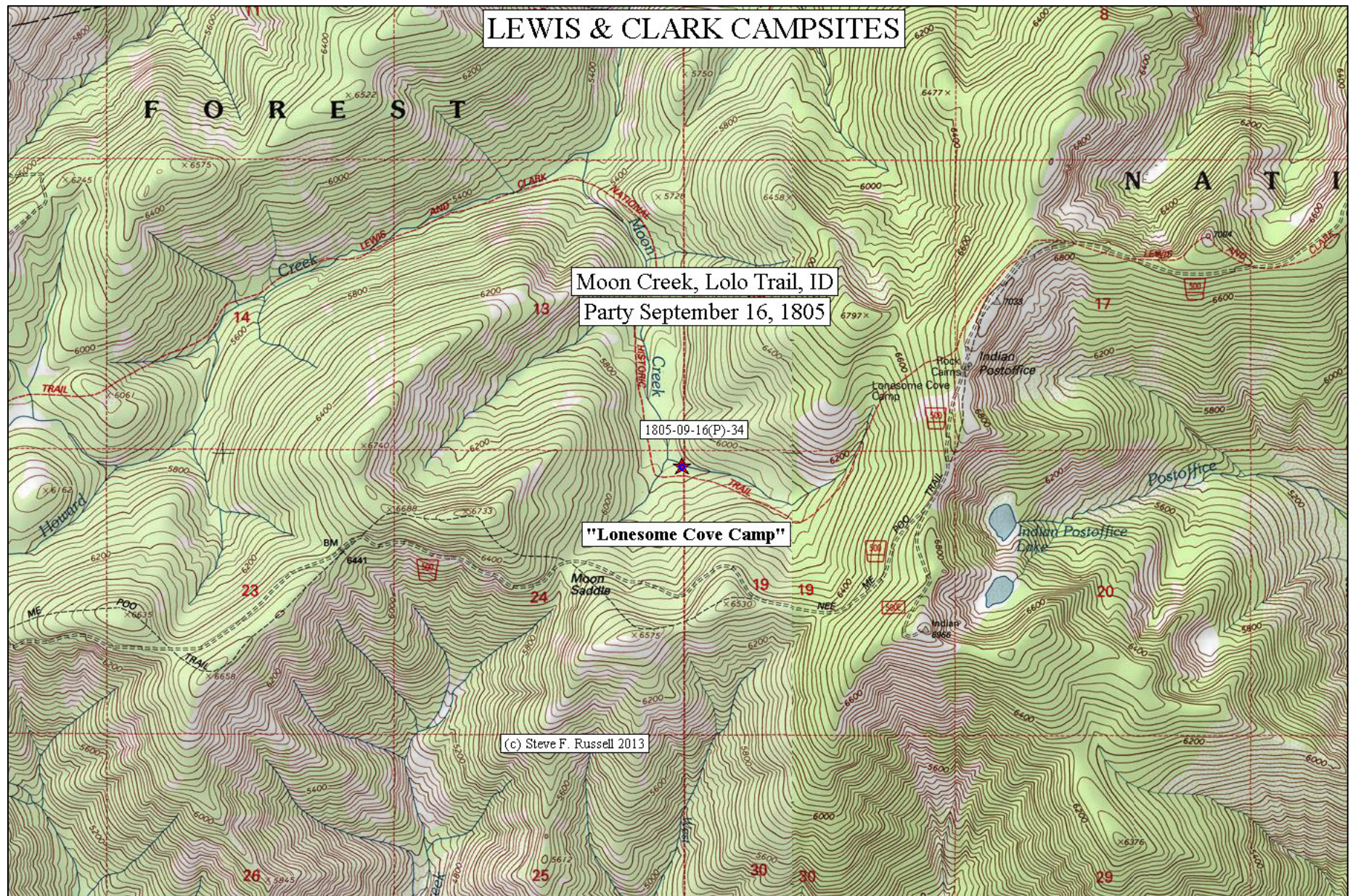


Steve F. Russell

Lonesome Cove Camp Sep 16, 1805  
Moon Creek



# Lewis & Clark National Historic Trail

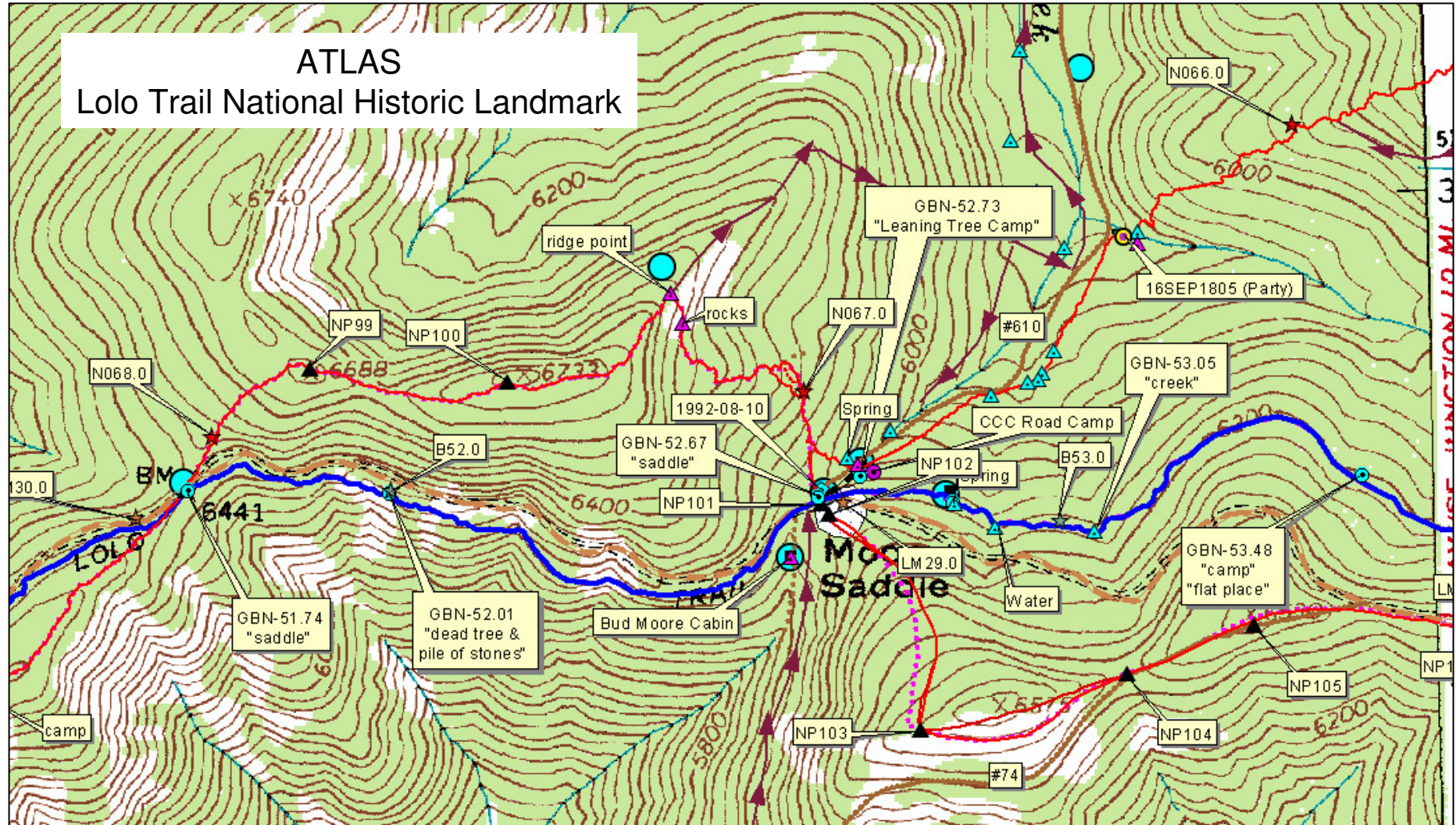


Steve F. Russell

© 2014 Steve F. Russell



# Lewis & Clark National Historic Trail



Steve F. Russell

Lonesome Cove Camp Sep 15, 1805  
Northeast of Moon Saddle



## Lewis & Clark National Historic Trail



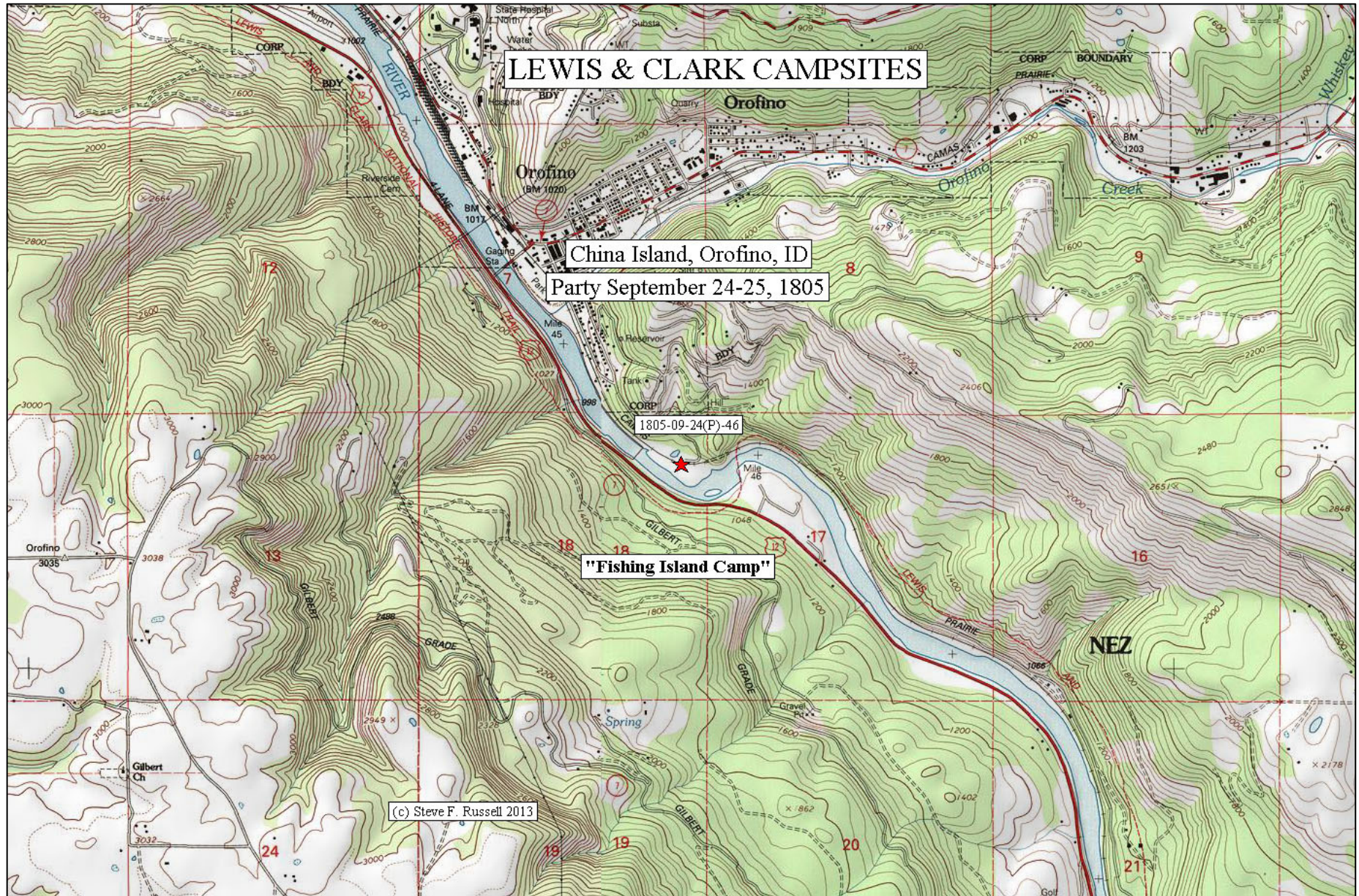
Steve F. Russell

Fishing Island Camp Sep 24, 1805  
China Island, Clearwater River above Orofino

© 2014 Steve F. Russell



# Lewis & Clark National Historic Trail

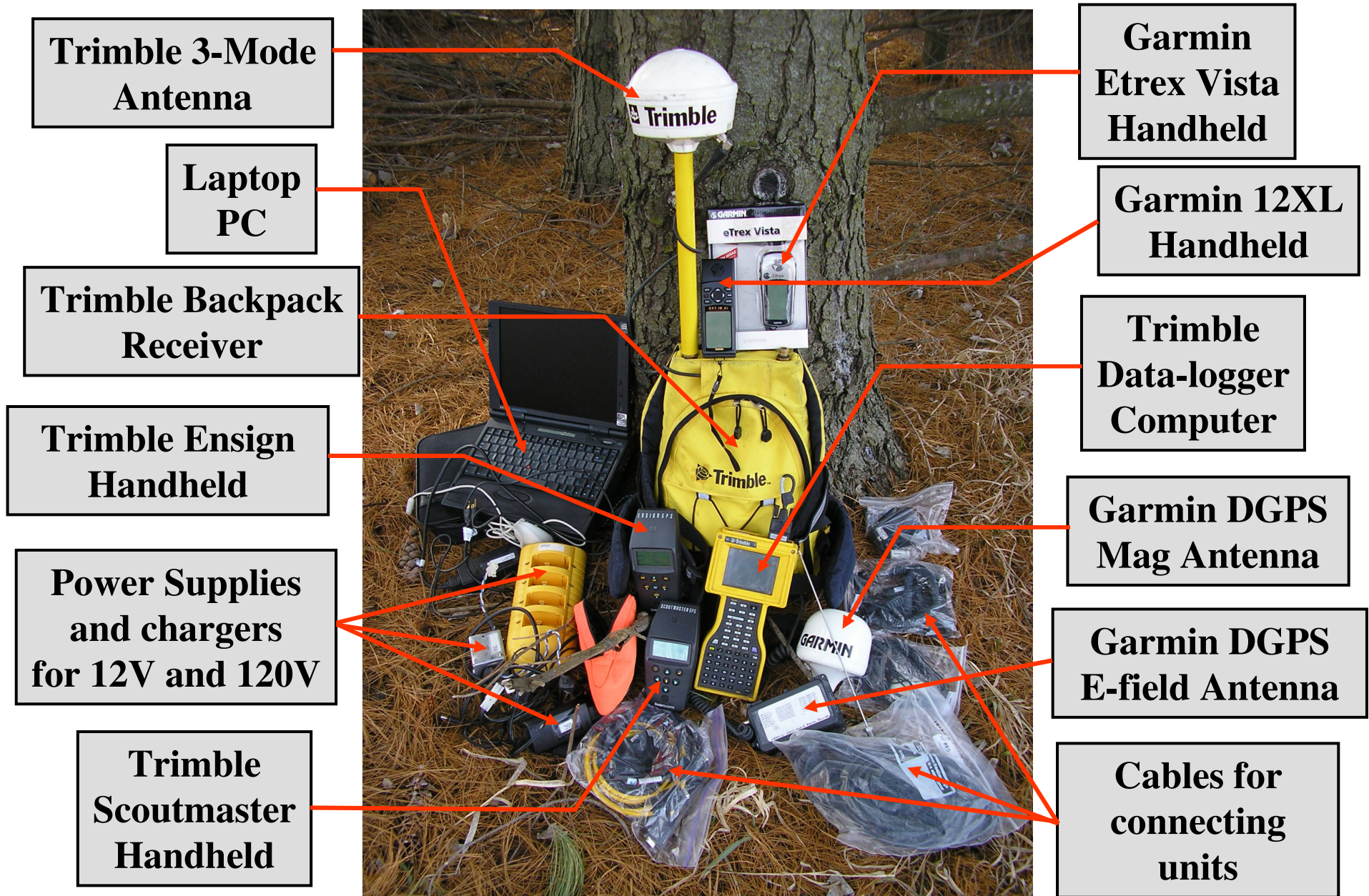


Steve F. Russell

© 2014 Steve F. Russell



# GPS Menagerie



Steve F. Russell



# Initial Processing of Data

*“A different kind of tailgating”*



Steve F. Russell

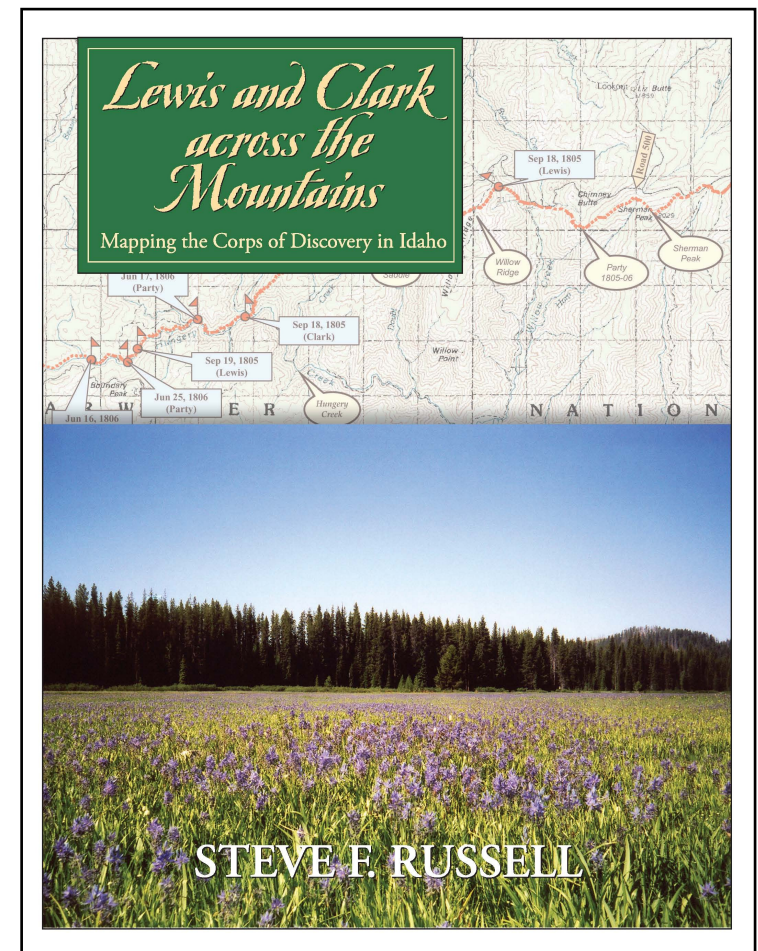
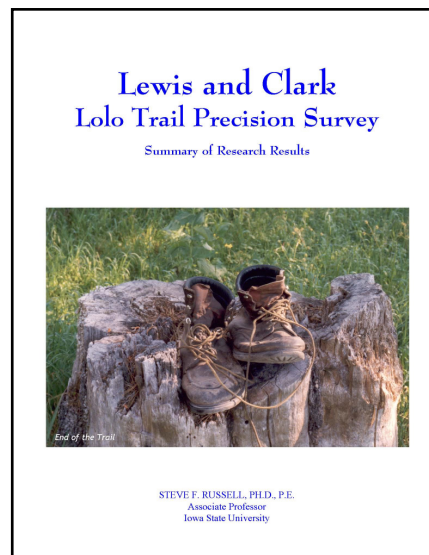
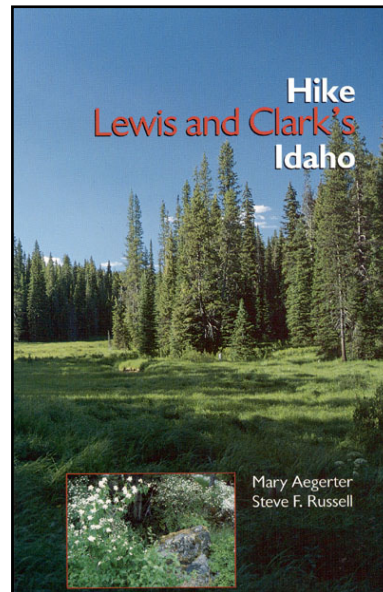
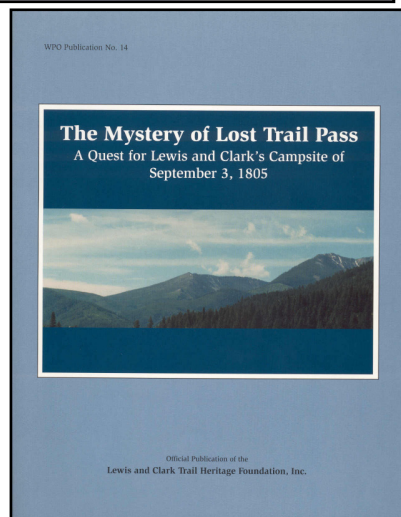
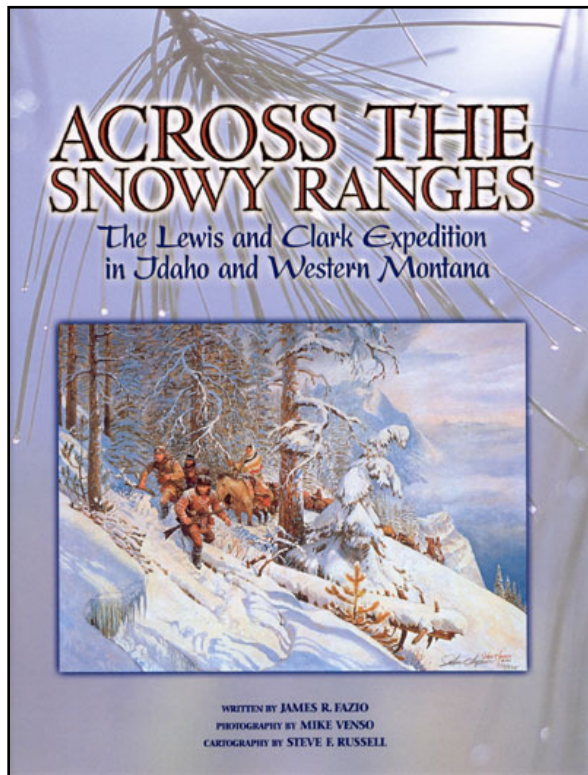
# Last surviving plaque put along the trail by Jack Harlan, 1935



Steve F. Russell



# Books & Monographs





# Websites



Program Description

The Interactive Journey

Historian Gary Moulton

A GPS Expert on the Trail ←

A Campfire Discussion

Dugout Canoes on the Clearwater

What If... The Salmon River

The Journey of Sacagawea

A Native American Perspective

The Return Trip

ECHOES OF A BITTER CROSSING  
**LEWIS &  
CLARK  
IN IDAHO**

Video Available      Watch the Show      Test Your Knowledge      Related Sites

**A Production of Idaho Public Television**

# Presentations

## *Fourth Annual Lewis and Clark Symposium*

*"Trails Through Time"*

*June 20-22, 2002*

*Lewis-Clark State College  
Lewiston, Idaho*

### ***Two Centuries, Two Peoples: A Confluence of Histories***

*The 2002 Symposium will focus on mapping, studying, and retracing a part of the trail of the Corps of Discovery through the land of the Nez Perce. Speakers will present more specific views of culture, preservation, protection and the interaction of the two peoples:*

*The Nez Perce Tribe and the  
Lewis and Clark Corps of Discovery*

*"...this hi Mountain is covered with Spruce & Pitch  
pine fir..." Capt. Clark, September 13, 1805  
(Lolo Summit)*

# Presentations

## *Welcome to a preview of the Lewis and Clark Symposium Presenters:*

**Joseph Mussulman**



Dr. Joseph Mussulman, featured speaker, noted teacher, humanist, and author, has gained a nationwide reputation as a serious student of the Lewis and Clark expedition. He has written several articles and created maps of the expedition's route for several books, including *Along the Trail with Lewis and Clark*. He is also the producer and principal writer for the encyclopedic web site, *Discovering Lewis & Clark* ([www.lewis-clark.org](http://www.lewis-clark.org)), which currently exceeds 1,300 pages. Dr. Mussulman will present the program, "Filling in the Zeros: Space, Pace, and Place on the Lewis & Clark Trail" on June 20, and "Men in High Spirits: Humor on the Lewis & Clark Trail" on June 21. Dr. Mussulman will also be performing music of the time of Lewis & Clark – In Greatest Harmony: "Medicine Songs" on the Lewis & Clark Trail at Brackenbury Square on Main St., Lewiston, Idaho.

**Ron Craig**



Ron Craig, filmmaker-author, has made a one-hour documentary on "Who was York?" York was the only African-American member of the 1803-06 Corp of Discovery's expedition to the Northwest. Ron will present his program on June 20 entitled, "Who was York? A New Look at the Lewis and Clark Expedition."

**Ken Karsmizki**



Ken Karsmizki, noted archeologist, works with NASA combining airborne and satellite imagery with historic maps and Lewis & Clark journals to locate sites along the trail. On June 21, Ken will discuss the use of satellite remote sensing equipment in location and analysis of Lewis and Clark campsites.

**Steve Russell**



Steve Russell, Associate Professor, Iowa State University, has researched the historic trails of the Lolo Trail corridor. His methods include the study of old maps, early aerial photos, pioneer survey notes, National Archive records and the journals of the expedition of Lewis and Clark. On June 21, Steve will present his program entitled, "Ordway's Salmon Fishing Excursion," and participate in a panel discussion of the study on the trail. He will also be involved in a book signing event at the Lewis-Clark Center for Arts and History on June 21. Steve will provide participants with historical overviews and interpretations on the bus tour to the Salmon Trout Camp



# Newspapers

**SUNDAY**  
February 27, 2000

# GREAT FALLS TRIBUNE

---

## High-tech equipment used to plot Lewis

Satellites, journals aid professor as he traces historic trail

By DAN GALLAGHER  
Associated Press Writer

BOISE, Idaho — For 15 summers, Iowa State University engineering professor Steve Russell has scrambled along the same forest deadfall and rocky hillsides that Meriwether Lewis and William Clark's Corps of Discovery encountered in Idaho's mountains two centuries ago.

But instead of a flintlock rifle and trade beads, Russell carries state-of-the-art mapping equipment to pinpoint within several feet the actual ground the expedition crossed as it went west over the treacherous Bitterroot Mountains in 1805 to reach the Lewiston area and the Nez Perce Tribe who acted as Samaritans to the starved and weary explorers.

"The Lolo Trail spans a land of history, exploration, courage, and danger," Russell said. "It is regrettable that we will never be able to fully learn about its early history but



Iowa State University engineering professor Steve Russell looks at a pasture near Ross' Hole, Mont., in July, where Lewis and Clark met the Salish Tribe before crossing Montana's Bitterroot Mountains.

began. The route is largely untouched from the time it served as changed so much. The mountain-scene doesn't change," Russell the North and Middle Forks of the

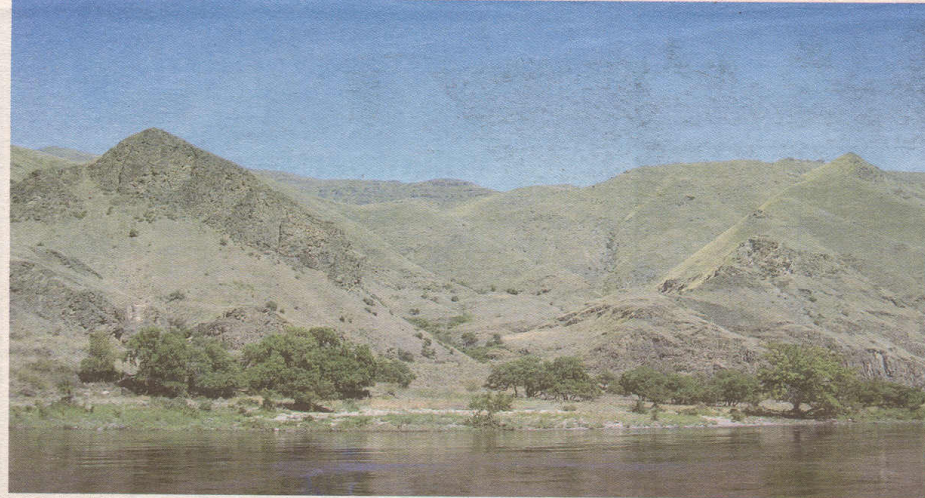


# “The Latest News”

## Lewis & Clark Expedition Site Discovery

- Discovered in 2000
- Research Monograph published in 2003
- Archaeologist surveys in 2006 & 2007
- Eligible for **National Historic Landmark status**

6 – THE MEAGHER COUNTY NEWS Thursday, July 26, 2007



THE VIEW from the Snake River looking northeast toward Cougar Rapids Bar shows where Steve Russell spotted found the site of an Native American longhouse near Lewiston, Idaho.

### Steve Russell Locates Lewis and Clark Expedition Site

Archaeologists believe they have found the Nez Perce Indian village where three members of the Lewis and Clark expedition spent two nights and one day on an ill-fated fishing expedition.

In the spring of 1806, while expedition members were camped along the Clearwater River waiting for mountain snows to melt, Sgt. Ordway was dispatched to fetch salmon from the nearby Salmon River. Historians have speculated over the route that Ordway and Pmts. Robert Frazer and Peter Weise took. But until recently, historians didn't know exactly where the men descended into the lower Salmon River gorge and Hells Canyon or precisely

Cottonwood Creek. From there, he says, they dropped down to Big Cougar Bar.

The topography there matches that described by Ordway in his journal. When Russell flew over the site a few years ago he noticed some depressions on a bench above the bar. He figured that is where the longhouse, also described by Ordway, stood.

This year the archaeologists, led by Ken Reid of the State Historical Preservation Office at Boise, conducted a dig there. They uncovered clues that a longhouse did stand at the site and it was there in the right time frame to match the Ordway trip.

"The dimensions match what

Service.

None of the artifacts can be directly linked to Ordway. But Reid points out Ordway and his men only spent two nights and one day there. And during this part of their cross-country journey the men were wearing pants and shirts made of buckskin.

"There were no uniform pieces or buttons to lose," he said.

Before Reid and his colleagues unearthed a single scoop of dirt the historians used high-tech equipment to map the small bench where they believed the longhouse once stood. The map allowed them to surgically excavate the site while leaving most of it undisturbed.





March 3-4, 2005  
Benton Convention Center  
Winston-Salem, North Carolina

## **Invited Speaker Lewis & Clark Corps of Discovery**

**Steve F. Russell  
Associate Professor  
Iowa State University  
[sfr@iastate.edu](mailto:sfr@iastate.edu)**

**Thursday, March 3, 2005, 10:45-11:30am**

# Deer Creek Salmon River Canyon in Idaho



Steve F. Russell

NC 2005 GIS Conference, Winston-Salem, NC, March 3, 2005, Steve F. Russell, Iowa State University



# Camping With the Nez Perce



Steve F. Russell

The  
End



# Lava Springs Valley, Soda Springs, Idaho

Steve F. Russell



**Octagon Spring (Carbonated) 2014  
Soda Springs, Idaho**

Steve F. Russell



**Carbon Dioxide Powered Travertine Spring Cone  
Soda Springs, Idaho**

Steve F. Russell



**Soda Springs Captive Geyser  
Soda Springs, Idaho**

Steve F. Russell



**Iron Spring Pool  
Soda Springs, Idaho**