To commemorate the 200th anniversary of the Lewis and Clark Corps of Discovery expedition from 1804-1806 and the 125th anniversary of the United States Geological Survey (USGS), the USGS Earth Resources Observation and Science (EROS) Data Center assembled a collection of satellite images tracing the route Lewis and Clark took from St. Louis, Missouri, to the Pacific Coast.

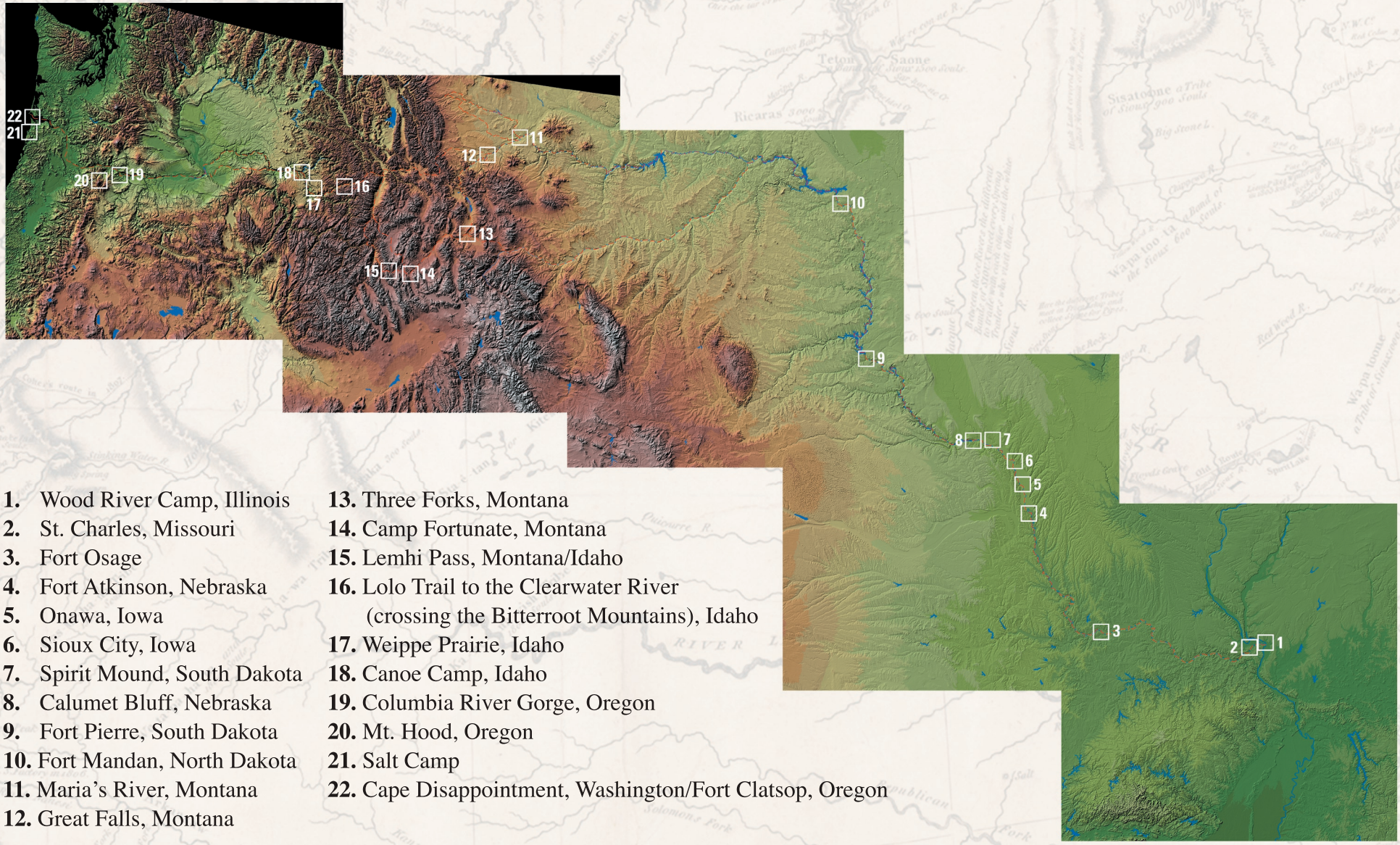
The expedition's entire route is shown in topographic relief on a map of the United States. The map was created using digital elevation model (DEM) data from ***The National Map***. Elevation is shown as a range of colors, from dark green for low elevations to white for high elevations. The map gives a sense of the vast and increasingly rugged terrain Lewis and Clark encountered on their two-year journey.

Individual images in the collection are Landsat 7 satellite scenes that highlight significant points of interest along the route. These detailed images were acquired by Enhanced Thematic Mapper-plus (ETM+) sensors carried aboard this Earth-orbiting satellite. The sensors record waves of light energy reflected from the Earth's surface. In the images, healthy vegetation appears in shades of green. Rivers, lakes, and streams are various shades of blue. Bare soil and geologic rock formations range from tan to brown.

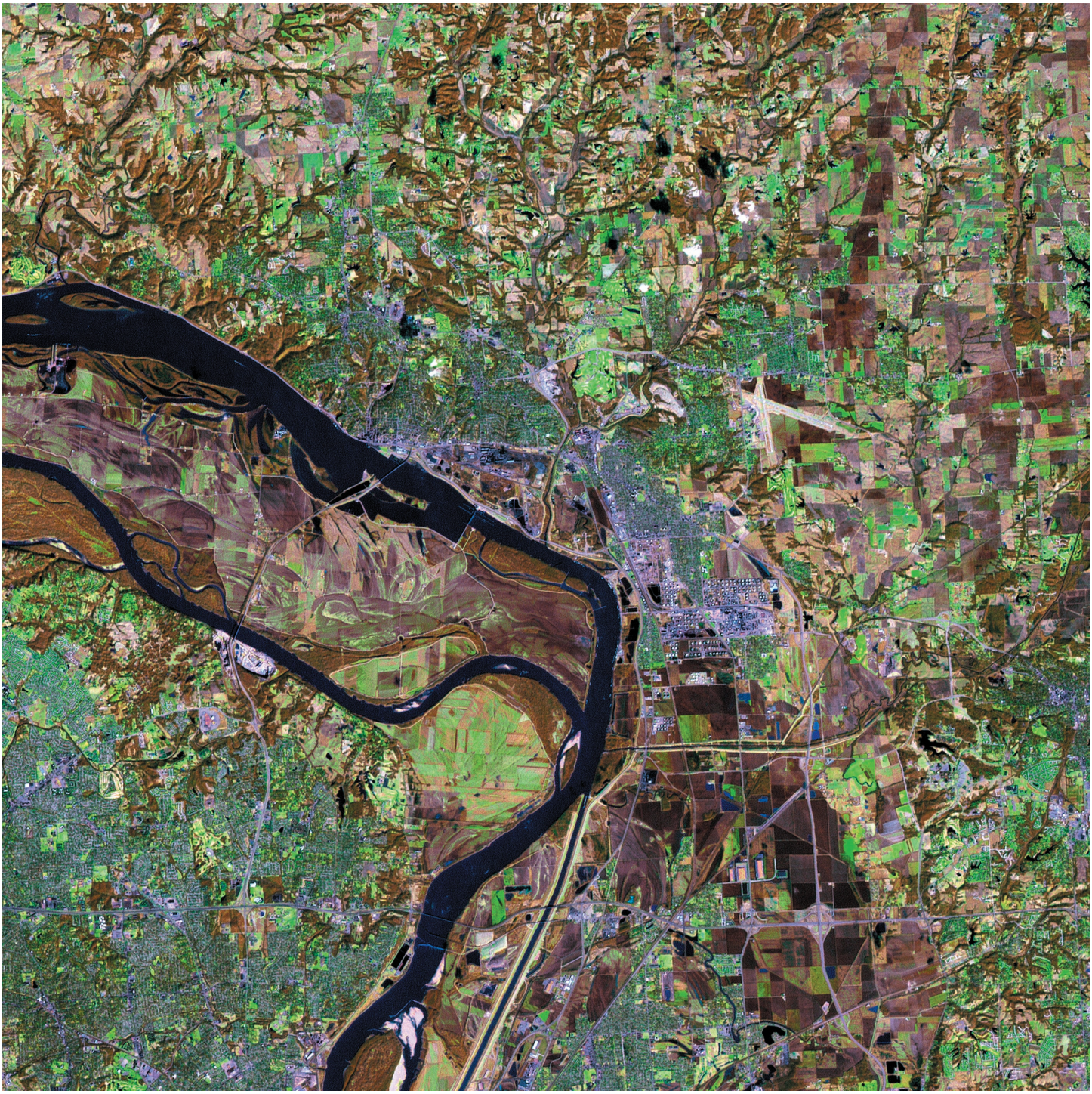
Modern scientific data-gathering instruments, such as satellite sensors, are far more sophisticated than any tool used by members of the Lewis and Clark expedition. But their spirit of dedication and sense of discovery remain alive and well in their contemporary counterparts. USGS scientists use satellite images and many other types of data to learn more about changes taking place in the Midwest, across America, and worldwide. The USGS continues what Lewis and Clark began.

The images in this collection were taken from the extensive satellite image archives at the EROS Data Center near Sioux Falls, South Dakota. For more information about the USGS, the EROS Data Center, and ***The National Map****, please visit the following websites: http://www.usgs.gov, http://edc.usgs.gov, http://nationalmap.usgs.gov.*

The Voyage of Discovery Continues:
View of the Journey of Lewis and Clark from Space



1. Wood River Camp, Illinois
2. St. Charles, Missouri
3. Fort Osage
4. Fort Atkinson, Nebraska
5. Onawa, Iowa
6. Sioux City, Iowa
7. Spirit Mound, South Dakota
8. Calumet Bluff, Nebraska
9. Fort Pierre, South Dakota
10. Fort Mandan, North Dakota
11. Maria's River, Montana
12. Great Falls, Montana
13. Three Forks, Montana
14. Camp Fortunate, Montana
15. Lemhi Pass, Montana/Idaho
16. Lolo Trail to the Clearwater River (crossing the Bitterroot Mountains), Idaho
17. Weippe Prairie, Idaho
18. Canoe Camp, Idaho
19. Columbia River Gorge, Oregon
20. Mt. Hood, Oregon
21. Salt Camp
22. Cape Disappointment, Washington/Fort Clatsop, Oregon



1 Wood River Camp, Illinois

December 1803-May 14, 1804

The Corps of Discovery expedition established Wood River Camp (also called Fort Dubois) where the Wood River of Illinois joins the Mississippi. Here, men were trained, supplies were gathered, and the expedition was organized. On May 14, 1804, the expedition began its long trip to the Pacific Ocean from this site, first traveling down the Mississippi for a short distance, and then heading northwest up the Missouri.

Image acquisition date: February 9, 2002

2 St. Charles, Missouri

May 16-21, 1804

In St. Charles, the expedition stopped to make final preparations for the expedition's journey up the Missouri. They stored gear and supplies in a keelboat and two pirogues, and made last-minute purchases while waiting for Lewis to arrive from St. Louis. Residents of St. Charles made the men welcome during their stay, inviting them to dinners, dances, and church services. Some of the men had such a good time, in fact, that one evening's festivities were followed by court martial proceedings the next day for such offenses as being absent without leave or "behave[e]ing in an unbecom[e]ing manner at the ball last night." When Lewis did arrive, he was accompanied by a group of well-wishers from St. Louis who joined with those in St. Charles in giving the expedition a hearty send-off.

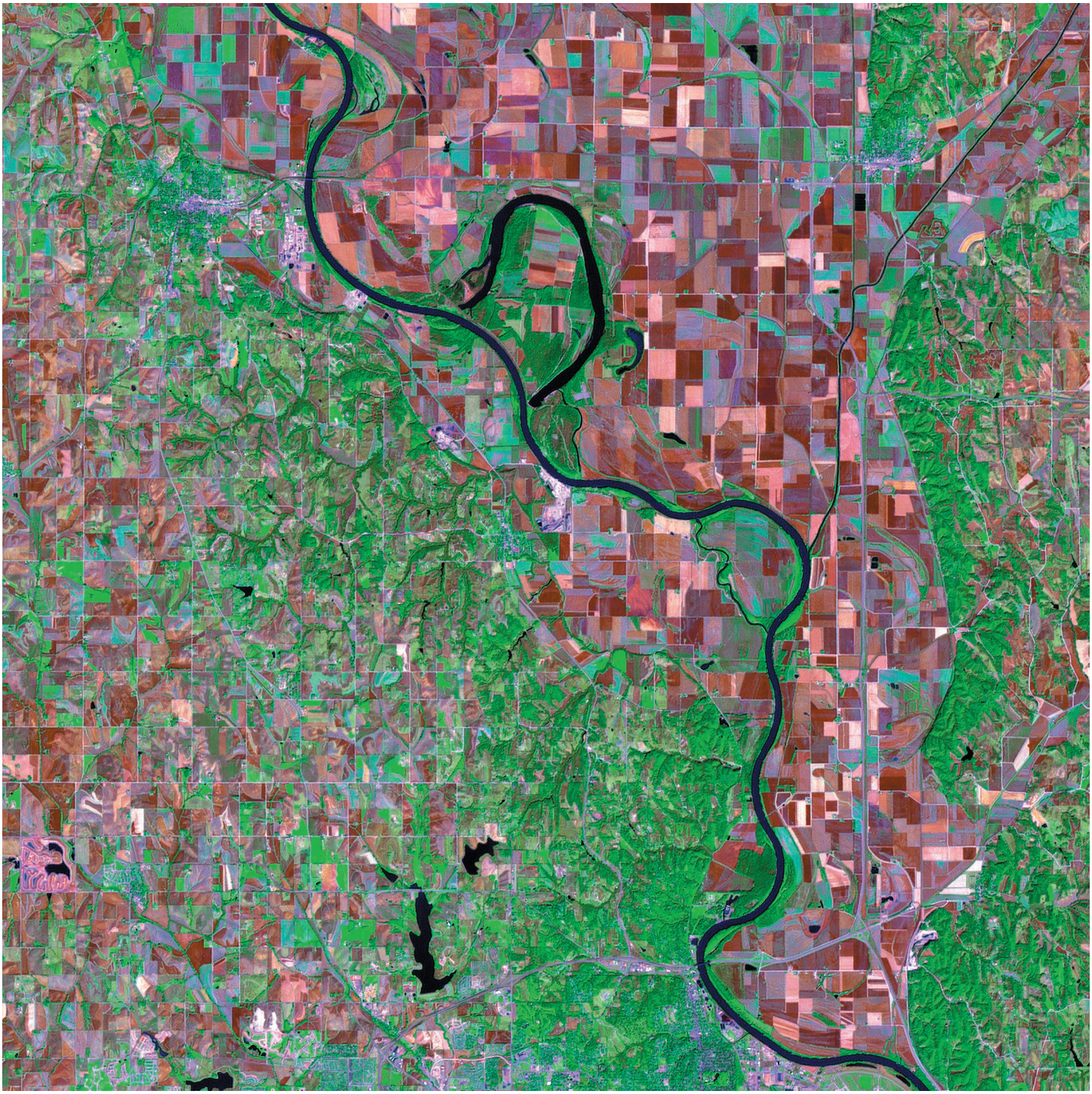
Image acquisition date: February 9, 2002

3 Fort Osage

June 23, 1804

On June 23, 1804, the expedition passed a spot along the Missouri that overlooked the rivers bends and currents for some distance in either direction. To Clark, it seemed a strategically ideal site for a fort. Four years later, in 1808, Clark returned with 80 men and oversaw the construction of Fort Osage, named for the neighboring Osage tribe. The Fort served as an outpost for the military, a major trading post, and a staging point for settlers venturing westward until 1827.

Image acquisition date: October 2, 2001

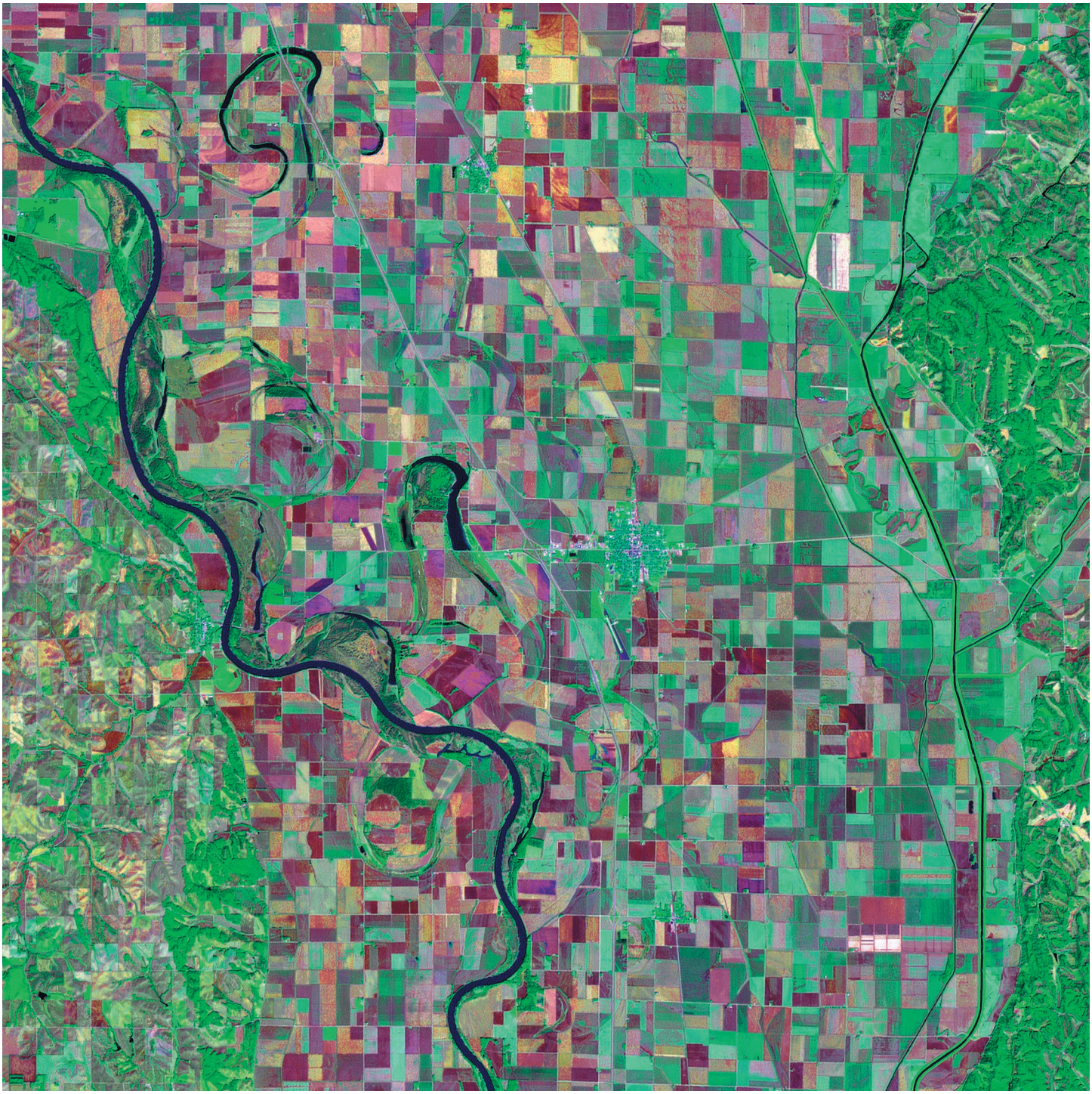


4 Fort Atkinson, Nebraska

August 3, 1804

At this site in Nebraska, the expedition held its first council with Native Americans, a critical encounter with members of the Otto and Missouri tribes. Lewis and Clark knew that much depended on the outcome of this meeting. If it went well, news would travel quickly and the expedition was likely to be treated well by other tribes they would meet along the way. If it went badly, the expedition would have to face the journey without the aid and vast knowledge of the Native American population. The meetings did go well, and this site was recorded in the journals of both Lewis and Clark as “Council Bluff.”

Image acquisition date: September 30, 2001

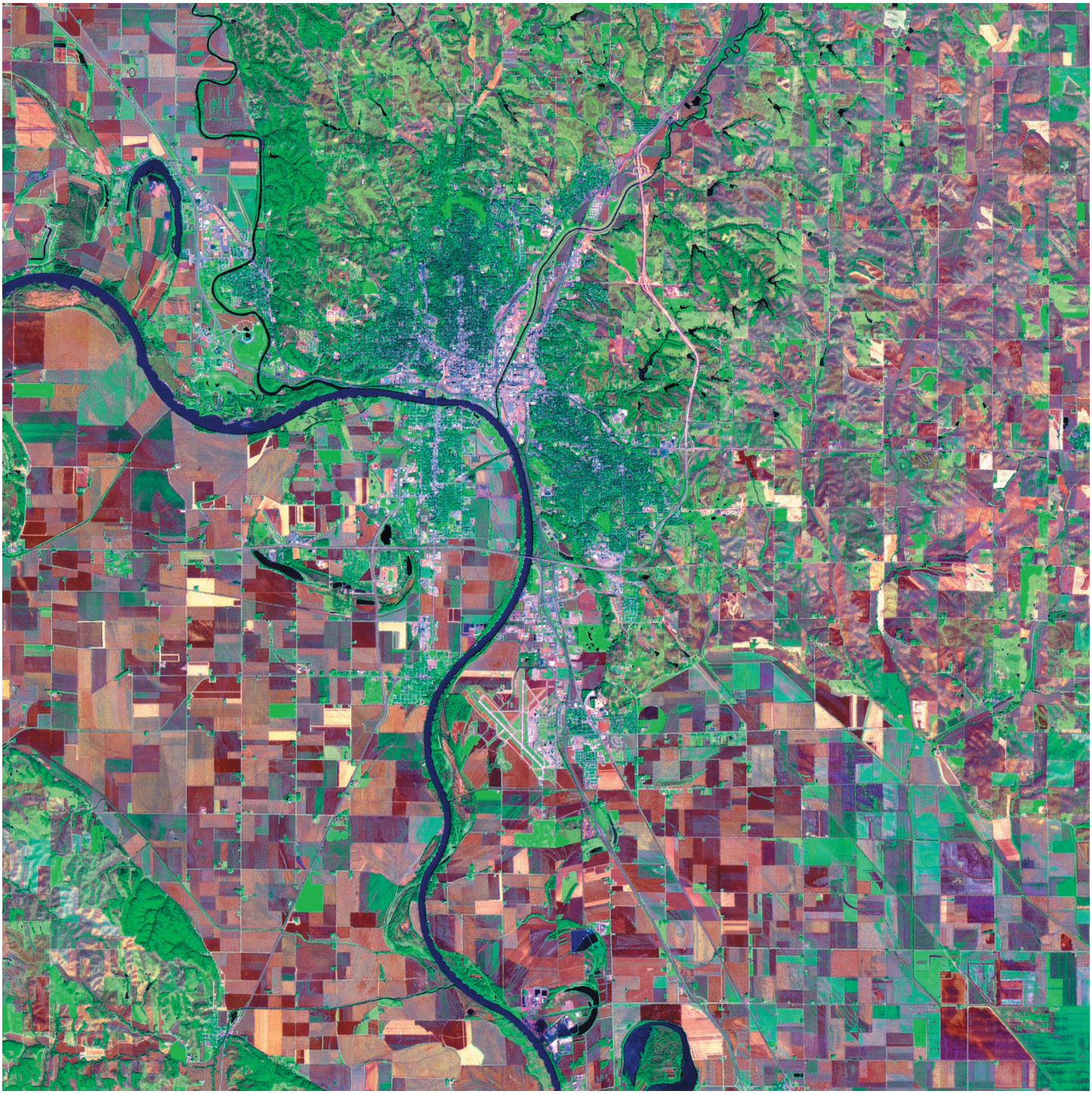


5 Onawa, Iowa

August 9-10, 1804

While camping near the present site of the town of Onawa, Lewis and Clark visited the grave of Blackbird, a former chief of the Mahas, who had died along with many of his people during a smallpox epidemic four years earlier.

Image acquisition date: September 30, 2001

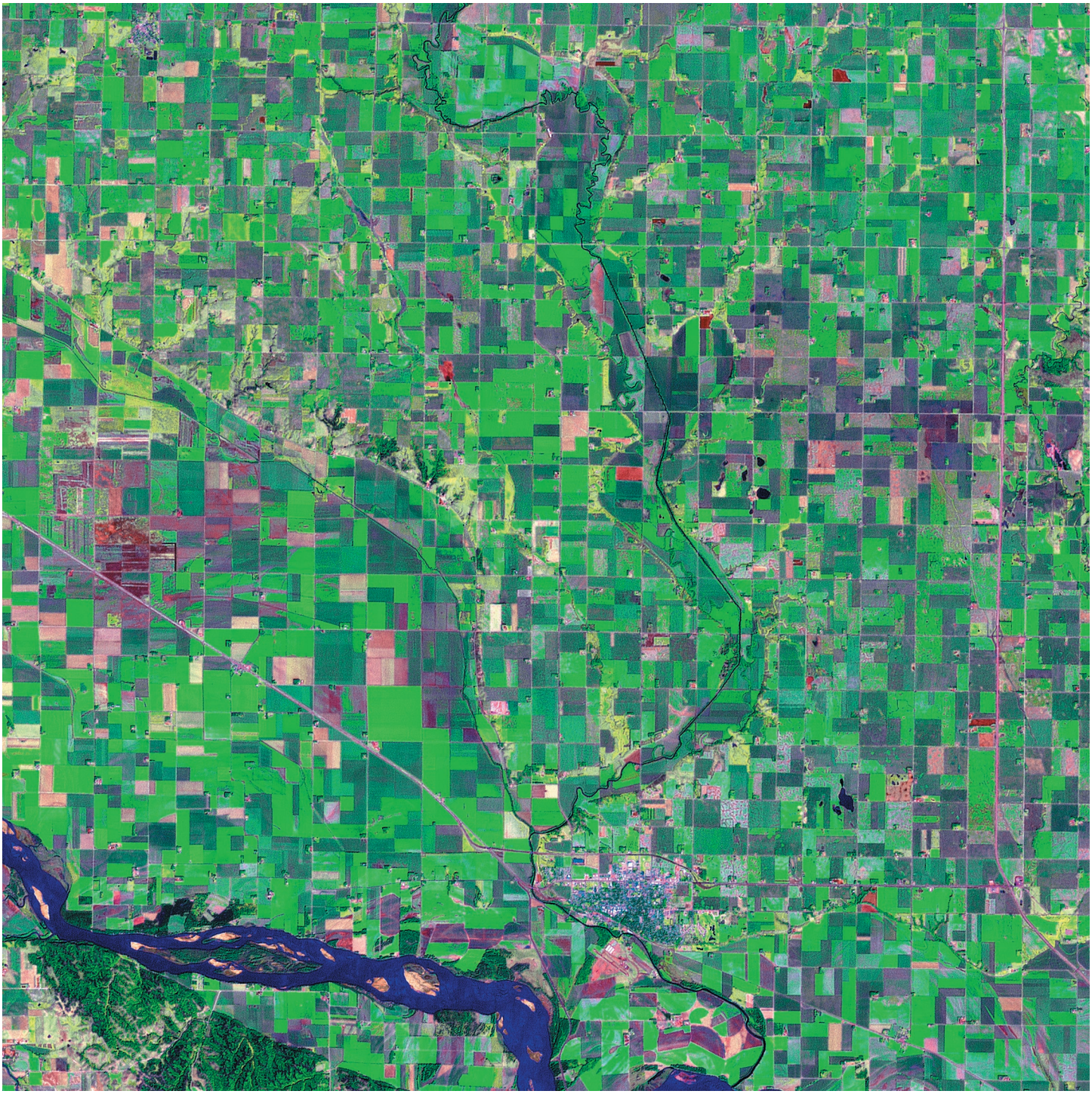


6 Sioux City, Iowa

August 20, 1804

Sergeant Charles Floyd, Jr., who had been seriously ill for several days, died here of what is generally thought to be infection from a ruptured appendix. He was the expedition's only fatality. Floyd was buried on a high bluff on the east bank of the Missouri, overlooking the mouth of a river than now bears his name. The spot is now marked by a 100-foot-tall sandstone obelisk completed in 1901. In 1960 the monument became the first historic landmark established by the U.S. Department of the Interior.

Image acquisition date: September 8, 2002

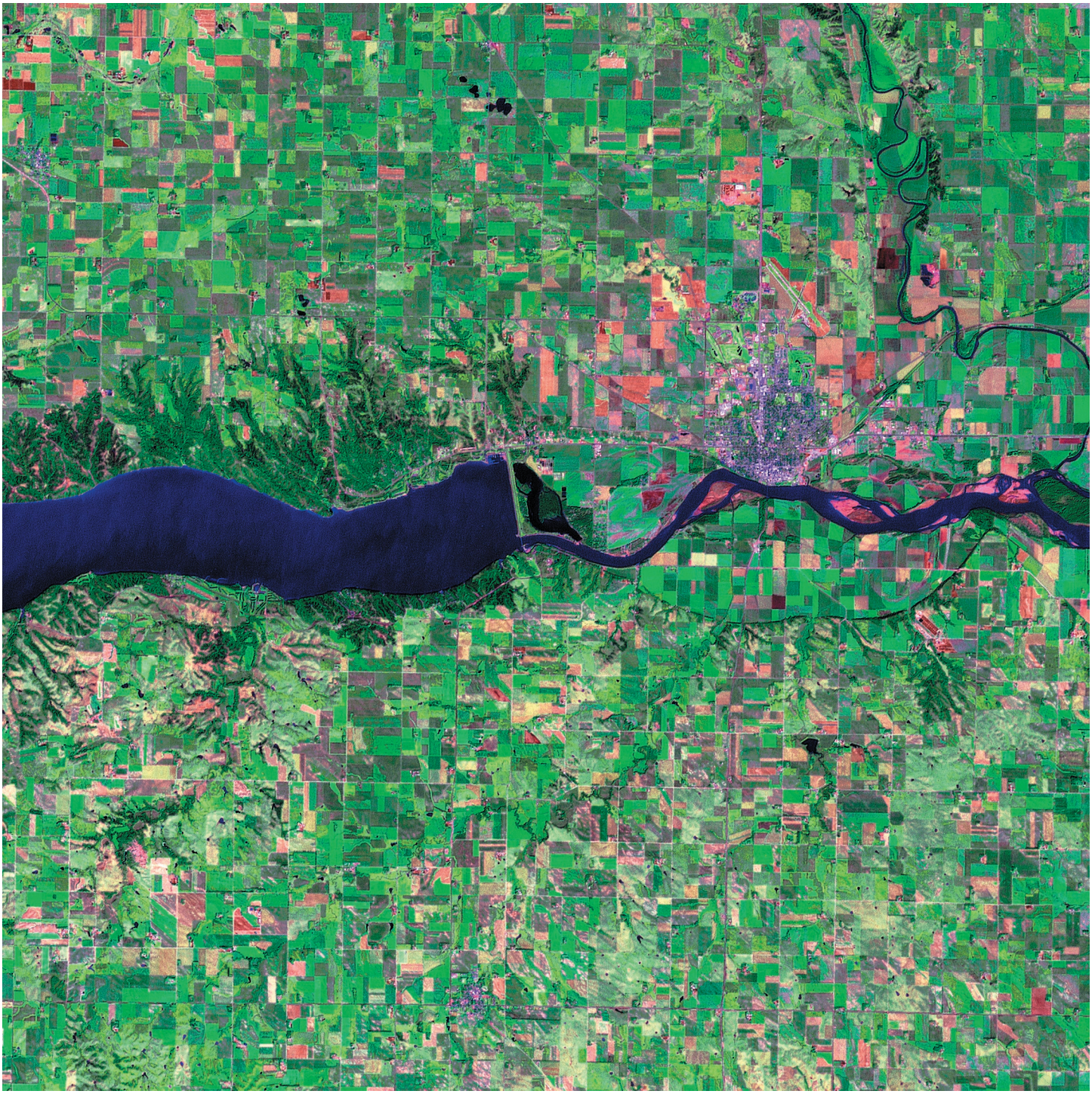


7 Spirit Mound, South Dakota

August 25, 1804

On this very hot day, Lewis, Clark, and ten other expedition members traveled north roughly 9 miles from the mouth of the Vermillion River to visit a solitary hill said by local tribes to be inhabited by, in Clark's word, "deavels in humon form with remarkable large heads armed wit Sharp arrows." The men saw no devils, but did see large herds of bison.

Image acquisition date: September 8, 2002

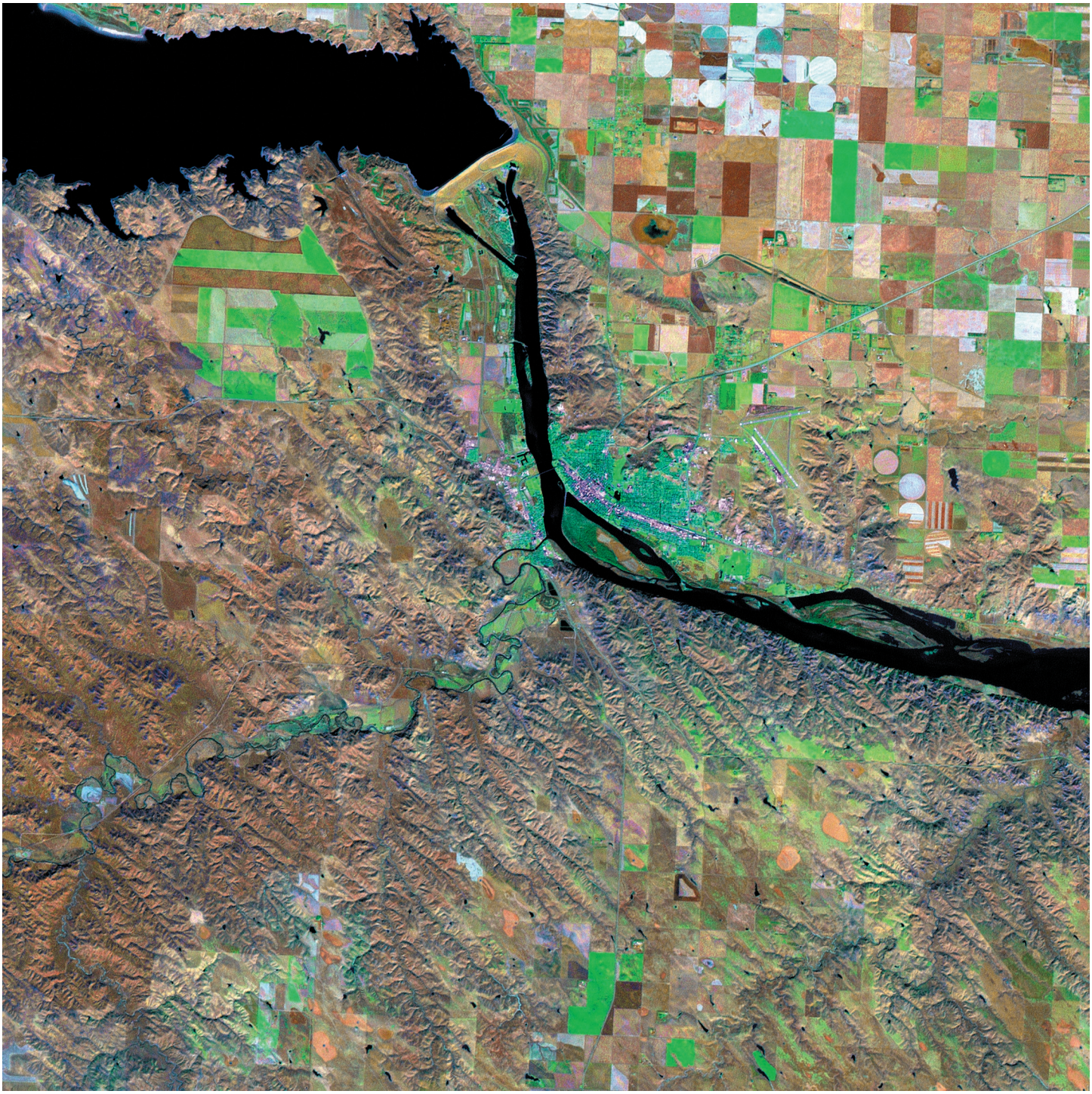


8 Calumet Bluff, Nebraska

August 30-31, 1804

Near the current location of Gavin's Point dam at the base of Calumet Bluff, expedition members met with local tribal leaders in a ceremonial council under a large oak tree. The council lasted two days and was described in Clark's journal as rather an elaborate affair.

Image acquisition date: September 8, 2002

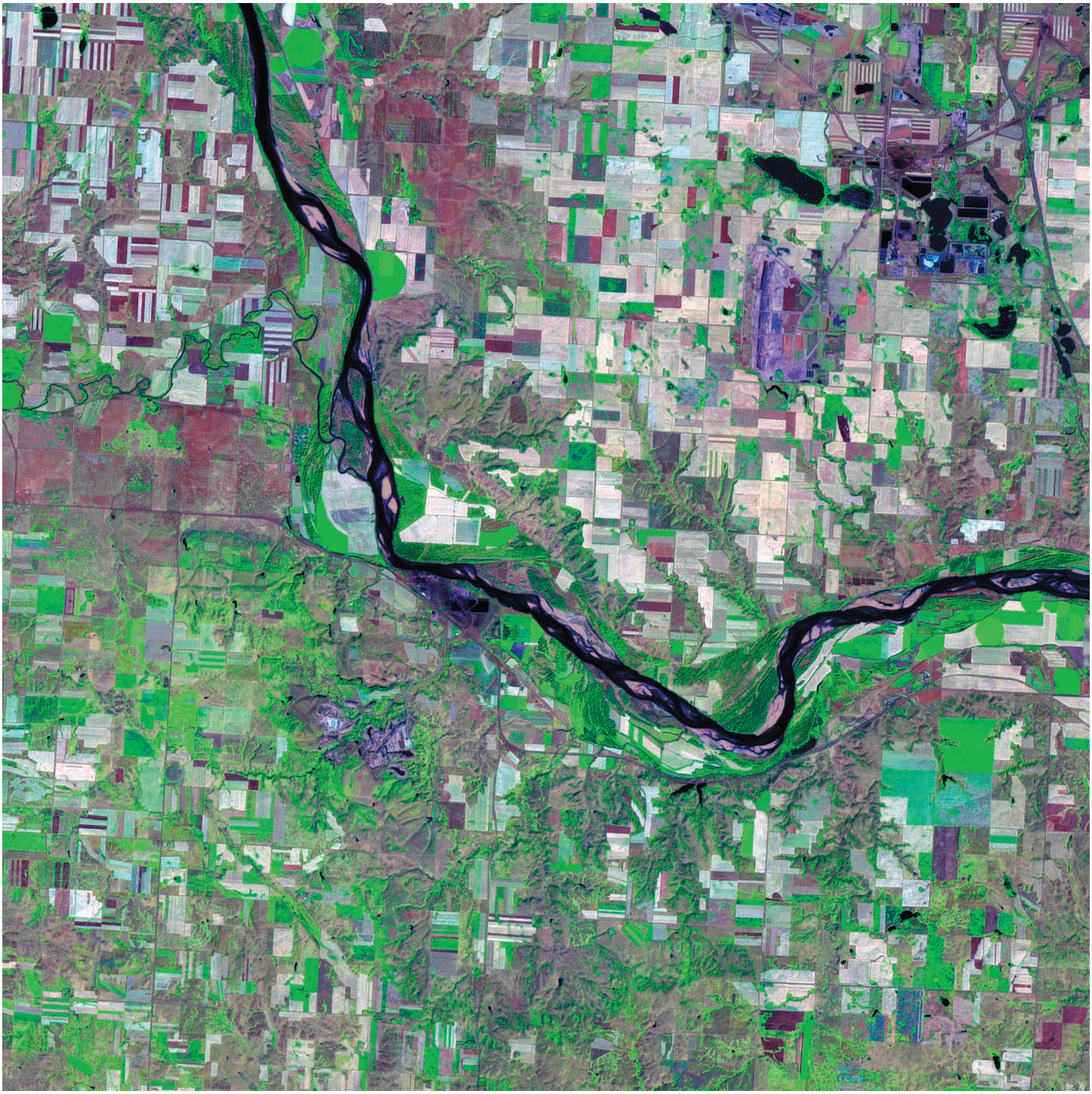


9 Fort Pierre, South Dakota

September 25-30, 1804

It was near the present location of Fort Pierre that the Corps of Discovery first encountered a group of Teton Sioux at the mouth of the Bad River. Unlike their meetings with other Indian tribes, this encounter, and several that followed over the next few days, was somewhat strained and confrontational.

Image acquisition date: November 6, 2001

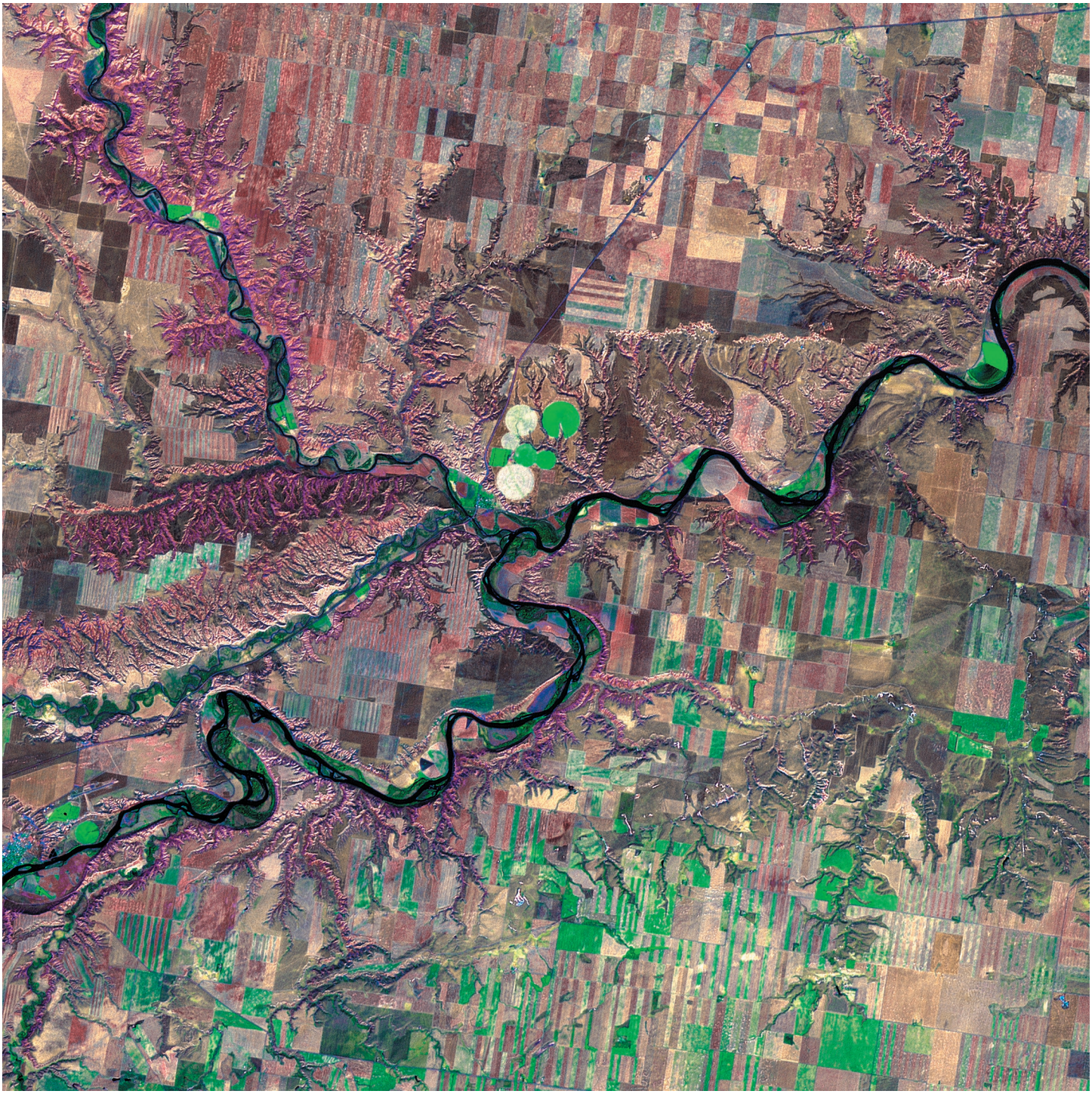


10 Fort Mandan, North Dakota

October 26, 1804-April 7, 1805

Fort Mandan was the site of the expedition's first winter camp. They stayed for five months, often visited by neighboring Mandan and Hidatsa tribes. It was here that Lewis and Clark met Charbonneau, a Frenchman who lived with the Hidatsa and had two Shoshone wives. Charbonneau joined the expedition as translator and his wife, Sacagawea, also agreed to come as a guide. During the winter, Sacagawea gave birth to her first child, Jean Baptiste. It was from this camp that the explorers also sent the keelboat and several expedition members back down the river.

Image acquisition date: September 1, 2001

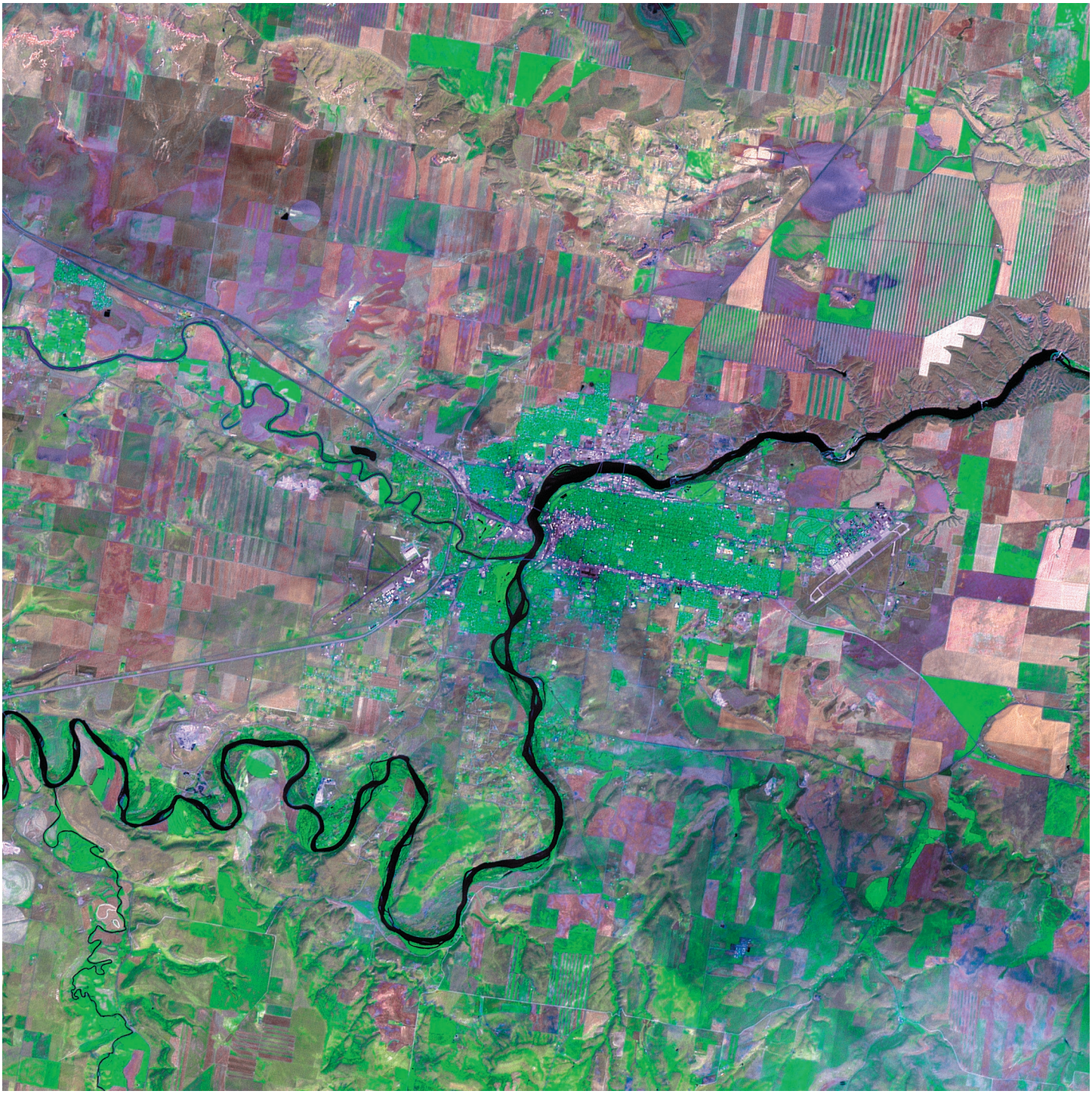


11 Maria's River, Montana

June 3-10, 1805

Here it was very important to select the correct stream at a fork of two rivers, one headed in a Northern direction and another headed in a Southerly direction. Both directions offered a stream of about equal size and Lewis and Clark had to select which was actually the Missouri and which was a tributary river that would lead them astray. Exploration parties were sent up both streams and, after several days of scouting, Lewis finally determined correctly that the Missouri must be the less silty stream that branched to the South. He then named the stream that entered from the North after his cousin Maria Wood and directed the expedition to proceed up the stream headed to the South.

Image acquisition date: May 22, 2001



12 Great Falls, Montana

June 16-July 14, 1805

As the expedition neared the source of the Missouri River, they came up against a daunting collection of rapids and waterfalls. Since the waterway was impassable, a long portage lay ahead. The men were forced to carry the boats and all their remaining equipment and supplies roughly 18 miles overland, skirting five waterfalls along the way. The portage took nearly a month.

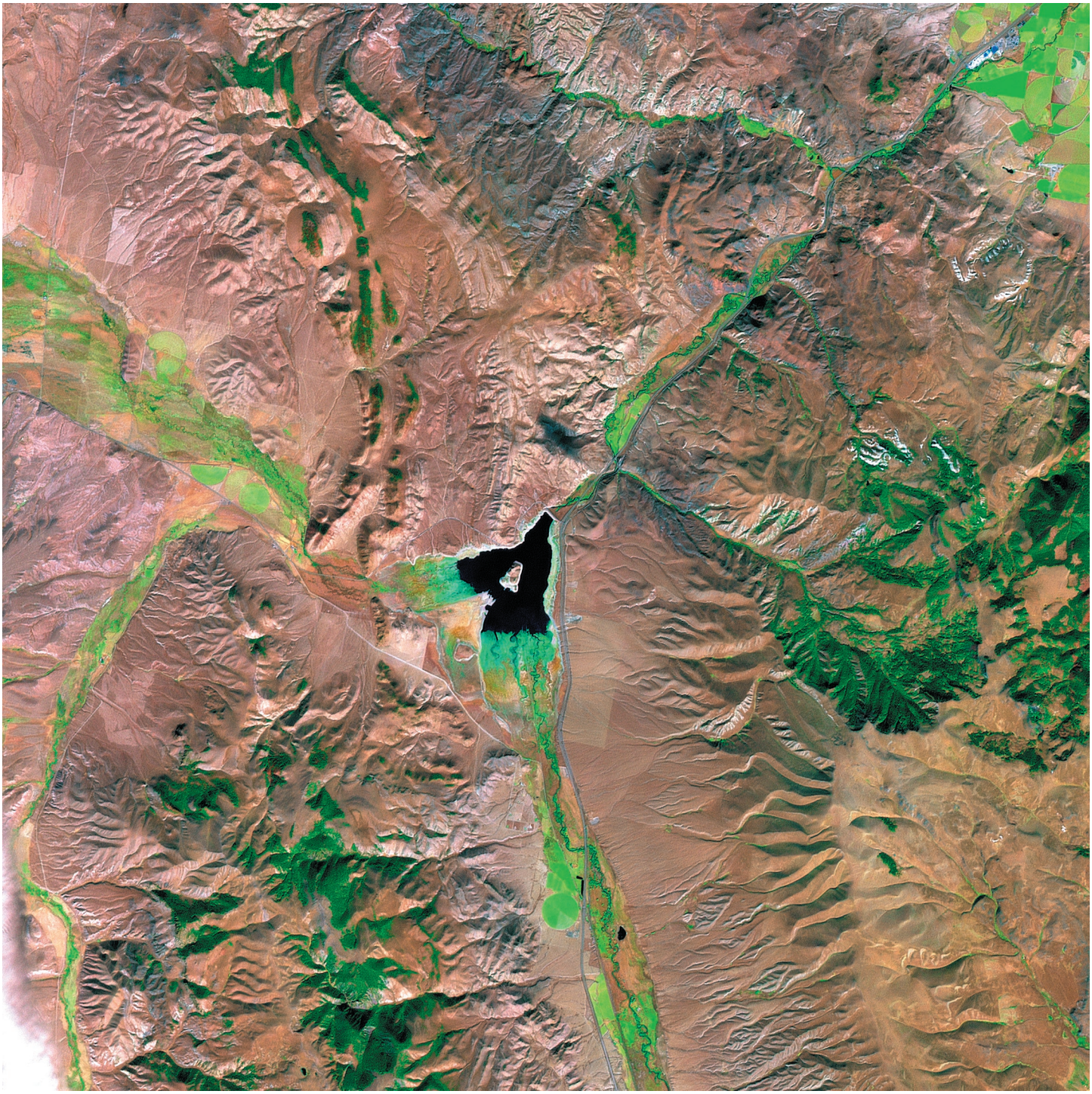
Image acquisition date: May 22, 2001

13 Three Forks, Montana

July 27, 1805

Sacagawea led the expedition to this site where three tributaries converge to form the Missouri River. Ironically, this was also the place where Sacagawea had been kidnapped five years earlier by the Hidatsa. The three rivers were given the names of Madison, Gallatin, and Jefferson. After some reconnaissance and much discussion, the two leaders decided that the Jefferson River was the most likely to lead directly to the continental divide.

Image acquisition date: August 13, 2002

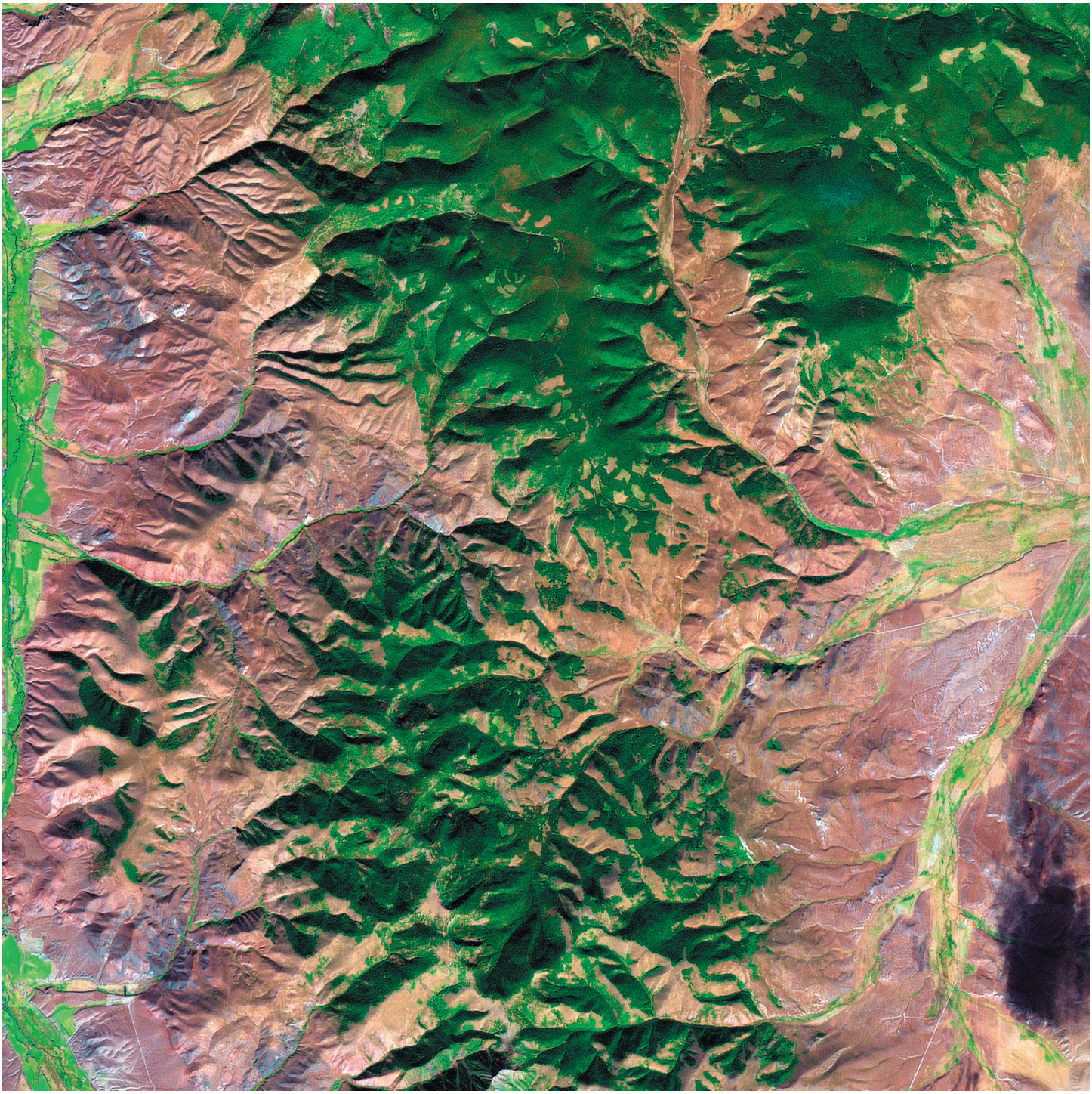


14 Camp Fortunate, Montana

August 17, 1805

Lewis and Clark were reunited at this site after parting company near the Big Hole and Jefferson Rivers. Lewis arrived first and lodged with a band of Shoshone. When the Indians began preparing to head east to their buffalo hunting grounds, Lewis persuaded them to wait for Clark's return. When at last Clark arrived with Sacagawea, she recognized the leader of the Shoshone as her brother. It was in part this fortunate twist of fate that led to the Shoshone agreeing to help the expedition cross the continental divide—and gave the camp its name.

Image acquisition date: October 7, 2002

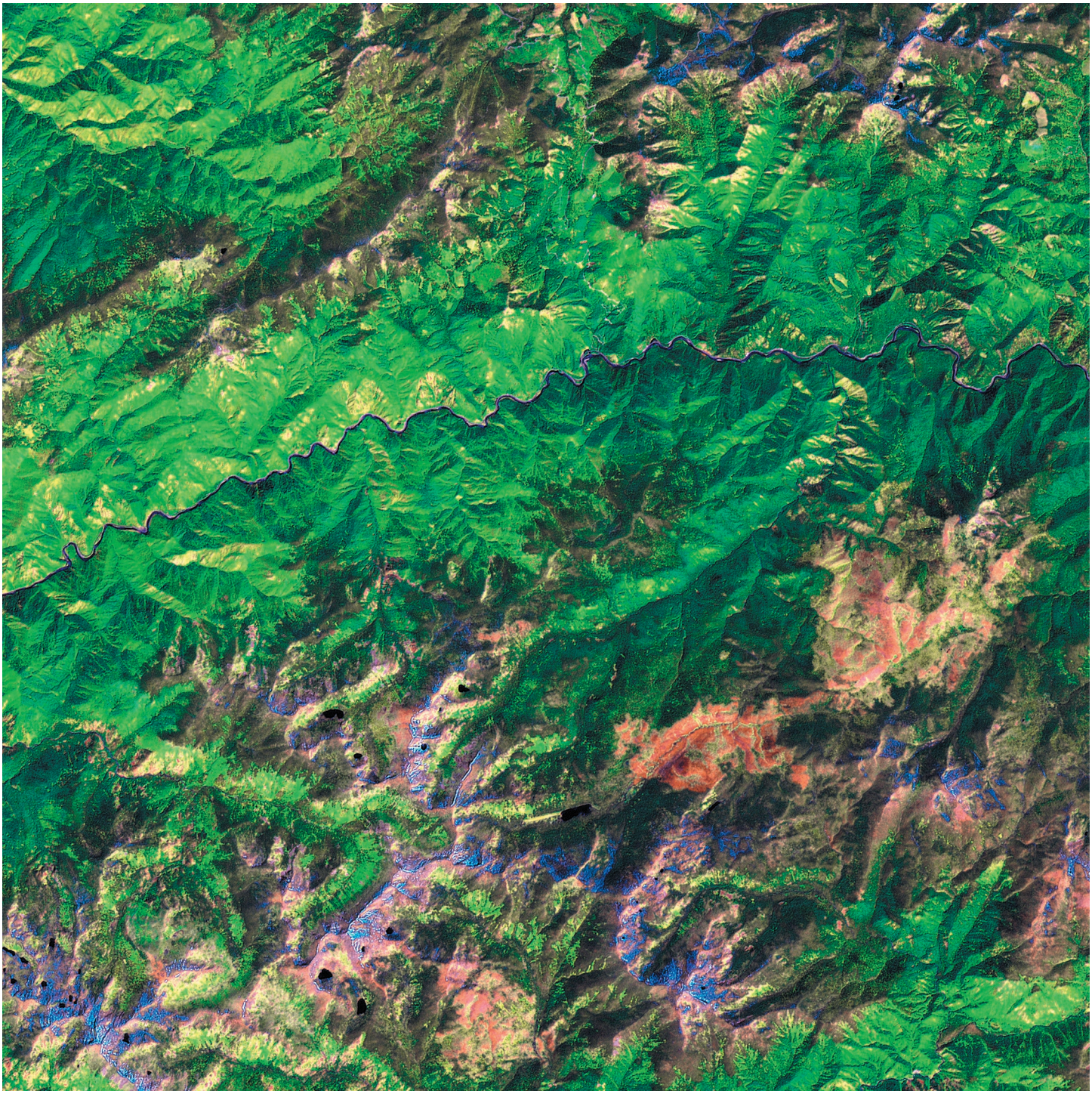


15 Lemhi Pass, Montana/Idaho

August 12, 1805

At this point, the Corps of Discovery crossed the continental divide and entered the Pacific Ocean drainage system. They also left territory that belonged to the United States. All that could be seen to the west from Lemhi Pass were jagged mountain peaks that stretched to the horizon. It was now obvious that there was no practical Northwest Passage to the Pacific.

Image acquisition date: October 7, 2002

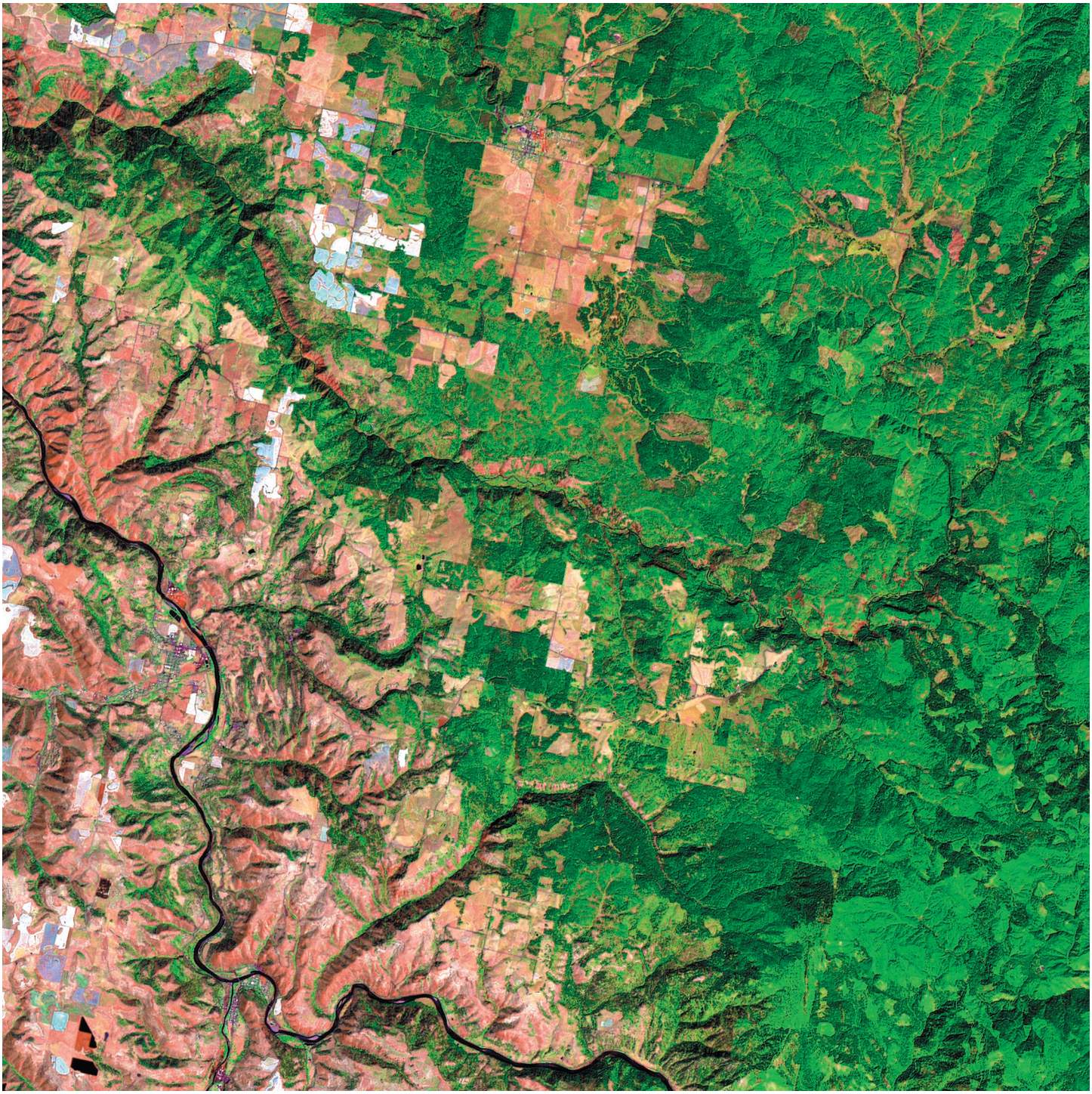


16 Lolo Trail to the Clearwater River, Idaho (crossing the Bitterroot Mountains)

September 12-21, 1805

The Shoshone provided the expedition with horses, a guide, and sound advice to help them through what was probably the most dangerous and difficult portion of their journey. The trail they followed across the divide and through the Bitterroot Mountains was extremely difficult. Game was scarce, which made the situation even more difficult for the explorers.

Image acquisition date: July 10, 2002



17 Weippe Prairie, Idaho

September 20, 1805

It was in this region that Lewis and Clark first encountered the Nez Percé, a very helpful and hospitable tribe. The Indians came to the aid of the explorers, who were in generally terrible shape after the long crossing through the Bitterroot Mountains.

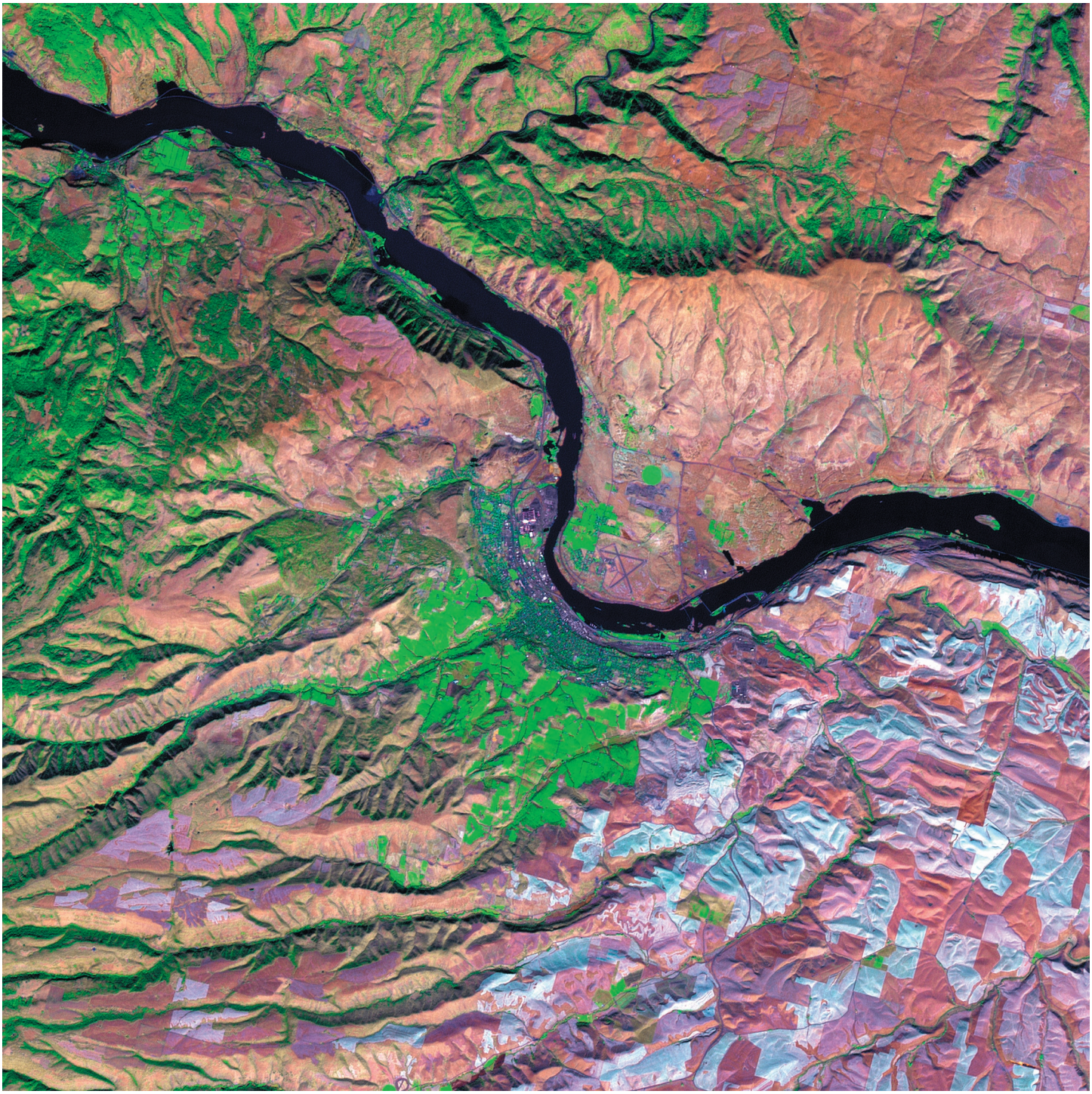
Image acquisition date: August 18, 2002

18 Canoe Camp, Idaho

September 26-October 17, 1805

Finding good timber along the Clearwater River, the expedition camped here for several days, building dugout canoes and preparing for the downstream journey - quite a luxury after paddling up the entire length of the Missouri. This stopover allowed members of the expedition to recover from the cold and near starvation they experienced while crossing the Rockies. However, too much food and an abrupt change in diet (red meat to salmon and roots) makes several members ill. Lewis is especially sick, not able to “walk about a little” until October 4.

Image acquisition date: August 18, 2002

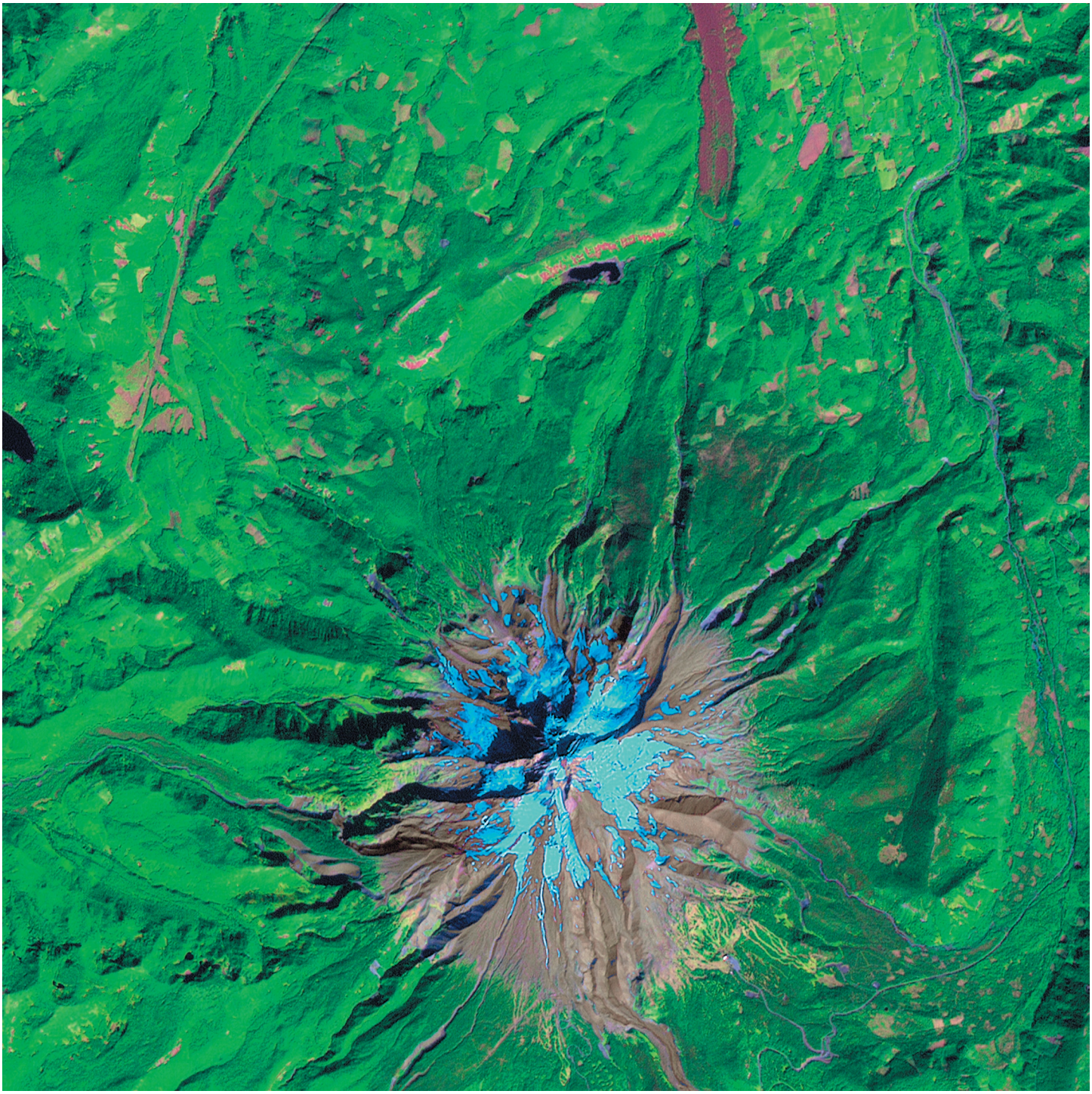


19 Columbia River Gorge, Oregon

October 24, 1805

The Columbia River presented special challenges, not the least of which was a very narrow gorge and extremely dangerous rapids. Without faltering, the members of the expedition negotiated canoes and cargo through the gorge and chaotic rapids beyond without a major mishap. The men enjoyed a few days of relatively tranquil travel on the river before encountering more rapids along the Cascades portion of the Columbia. Gear and supplies were portaged across this section, but the canoes were sent racing down the river. They emerged from the foaming water unharmed.

Image acquisition date: October 4, 2000



20 Mt. Hood, Oregon

October 18, 1805

When towering Mt. Hood came into view, Lewis and Clark were able to place themselves on a map for the first time since leaving North Dakota. Over a decade earlier, the British navigator George Vancouver had mapped the coast of the Pacific Northwest, including the landmark of Mt. Hood. At this point the members of the Corps of Discovery were able to estimate with considerable accuracy their proximity to the Pacific Ocean.

Image acquisition date: October 4, 2000

21 Salt Camp

December 7, 1805 - March 23, 1806

Without ships to carry them home, the expedition had to make their way back overland. But they could not set out immediately, as winter was fast approaching. The members of the expedition voted to set up camp seven miles inland from the coast, along the Columbia River and near the home of the Clatsop Indians. The expedition spent a miserable winter here, as the sun shone only six days and the rain stopped for only twelve. The time was used productively, however, in sewing clothes, drying meat, and making other preparations for the long journey home. They also made salt. Three men at a time spent fifty days boiling ocean water along the shore in a kettle to collect about four bushels of pure salt. The salt was a valuable seasoning and an equally valuable trading commodity for the trip home. The expedition began their return journey on March 23 and arrived in St. Louis on September 23, 1806.kettle to collect about four bushels of pure salt. The salt was a valuable seasoning and an equally valuable trading commodity for the trip home. The expedition began their return journey on March 23 and arrived in St. Louis on September 23, 1806.

Image acquisition date: February 26, 2002

22 Cape Disappointment, Washington/Fort Clatsop, Oregon

November 18, 1805- March 23, 1806

After a journey of more than 2,000 miles, the Corps of Discovery reached the Pacific Ocean. It must have been a thrilling moment. Yet Lewis and Clark reportedly dubbed the nearby cape “disappointment” in light of the fact that they had hoped there might be ships waiting that would spare them the long return journey.

Image acquisition date: February 26, 2002