Like a needle in a haystack, a bomb casing turned up amid acres of sphagnum moss.
One hot August day in 2010, I hopped along for a helicopter ride into the Big Bog—the vast, ecologically rich Red Lake peatlands—to do survey work on rare plants. As park manager of the Big Bog State Recreation Area, I was joining two researchers who had been studying this ecosystem since the 1970s. That day, they told me about their adventures at Hillman Lake, a two-acre body of water in the middle of this very flat peatland. To them, it seemed unnatural to have a lake here. They’d deduced that

Craters like this one left by a bomb in the Red Lake peatland led the author to uncover a nearly forgotten chapter of the state’s history.
a meteorite might have created the lake. They never found evidence of a meteorite, but they did come across an old bomb casing. Amazed and puzzled, they wondered what a bomb was doing in one of the most uninhabitable and hard-to-reach places in the country.

That question stuck with me. I had gone into the bog that morning hoping to find answers about its natural resources. I came out that afternoon with a thousand questions about its untold human history. Slowly, I have been able to discover some answers to this mystery: The fact that this wild peatland is so unpeopled and remote also made it attractive to the military as a training site.

As I stand at the end of our bog boardwalk today, the quiet solitude may be broken only by the peaceful song of the white-throated sparrow or the call of a Connecticut warbler. But during World War II and
the beginning of the Cold War, the roar of low-flying military planes dive-bombing targets rocked this place. So did the rapid fire of .50-caliber machine guns, the bark of howitzers, and the shock of huge explosions in the night sky.

**Bunyan’s Boys.** In 1941 the U.S. Army sought to establish the Upper Red Lake Firing Range to be used as a bombing and anti-aircraft range. Reserve pilots from the Twin Cities Naval Air Station used the range from 1947 to 1952. These “Bunyan’s Boys,” as they were sometimes called, would arrive for three-day cruises to do bombing and gunnery training in the bog.
Lt. Cmdr. R.T. Kieling points skyward (above) during a briefing with Frank Blair and Taylor Huston of the Minnesota Department of Conservation. The three met prior to a 1949 bombing run designed to create wallowing areas for moose on the Red Lake peatland. Clockwise from bottom right: The author stands on the boardwalk at the Big Bog State Recreation Area with a practice bomb. It was dropped during training in the area highlighted on the aeronautical chart. A team drills on an anti-aircraft gun as Gen. Joseph Nelson (second from left) looks on. Sub-caliber rockets and .50-caliber rounds were other munitions used at the bog from 1947 to 1952.
Planes like the Hellcat, Corsair, and Grumman TBM Avenger streaked across the sky. Pilots pounded targets from early in the morning until late at night with miniature MK23 Navy practice bombs; 100-pound, water-filled bombs; and sub-caliber aircraft rockets.

From 1949 to 1951, the Naval Reserve entered into a cooperative project with the Minnesota Department of Conservation. The goal of this project, known as Operation Woosh, was to produce wallowing holes for some 5,000 moose to help them find refuge from biting insects. The military dropped more than 50 live bombs, ranging in size from 500 to 2,000 pounds. As each bomb dropped, peat sprayed high into the air, instantly opening a pond up to 30 feet deep and 100 feet wide.

Not long after World War II, fear of a Russian attack on our country took hold. At an organizational meeting at Camp Ripley, Gen. Joseph Nelson announced that the Duluth area was the 11th-most strategic air target in the United States. As a result, all National Guard units assigned to the Duluth area became anti-aircraft artillery units. At the time, inadequate range facilities for the 40 mm howitzer artillery weapons at Camp Ripley required them to train in a more expansive location. In the summer months from 1948 to 1953, huge convoys of National Guard trucks rolled northward through small towns, hauling soldiers and pulling howitzers to the bog.

During weeklong encampments, brave pilots in B-26 bombers flew over the bog, towing targets for guard units to fire at. An Air Force accident report described a .50-caliber round striking a B-26 bomber over the Upper Red Lake Firing Range. That flight originated at Steward Air Force Base in Tennessee. F-51 Mustang fighter planes stationed in Minneapolis would rip through the sky to catch B-26s and pepper the targets they towed. Radio-controlled, 8-foot-long unmanned planes darted across the bog as men on the ground tried to shoot them down.

**Operation Deep Freeze.** Even the coldest winter months provided no reprieve from weapons tests. Bone-chilling temperatures lured the military to northern Minnesota. The Cold War had intensified after the Soviet Union successfully detonated its first atomic bomb in 1949. The United States, in turn, wanted to improve its arsenal. The Sandia National Laboratories in New Mexico was refining nuclear bombs. It needed to test a new barometric fuse in extreme cold, since frigid regions of the Soviet Union may have been likely targets. The deserts of the Southwest didn't match that cli-
mate well, but the cold skies over Upper Red Lake in January did. From 1951 to 1955, Sandia and the U.S. Air Force set in motion Operation Deep Freeze.

Huge B-36 Peacemakers and B-47 Stratojet bombers soared across the Midwest toward Minnesota from bases in New Mexico and South Dakota. Their payload in 1951 was the Mark IV bomb without its nuclear core. Weighing nearly 11,000 pounds, it was modeled after the Mark III Fat Man atomic bomb, dropped on Nagasaki, Japan, near the end of World War II. These bombs would detonate about 3,000 feet above a lighted target on Upper Red Lake’s thick ice.

People who lived closest to the bog remembered hearing the explosions. Nearly 60 years later, many still have the bright flash in the night sky etched in their mind’s eye. That’s not surprising. Imagine the shock wave of a blast so intense that it broke windows and threw open doors in the town of Kelliher, 25 miles away. Area newspaper correspondents at the time reported hearing the burst and seeing the sky light up 60 to 70 miles away in Bemidji and International Falls.

As 90 mm howitzers replaced 40 mm ones, even the big bog became too small for safely firing them. The operations then moved to Camp Haven in Wisconsin and began blasting over Lake Michigan. By the time the ice thawed in spring 1957, the howitzers had disappeared, and the bombs quit falling.

**Natural Landmark.** Amazed by the intricate landform patterns he had seen while flying over the Red Lake peatland, a Navy pilot gave some aerial photographs to his friend Donald Lawrence, a University of Minnesota ecology professor. The intriguing photos led Lawrence and Herbert Wright, a University of Minnesota geology professor, to begin taking field trips to the big bog. Over many years, their research helped to change perspectives and establish the international ecological significance of this largely unaltered landscape. When the threat of peat mining surfaced during the energy crisis of the 1970s, their research furthered protection of this great resource. In 1975 the National Park Service designated the Red Lake Peatland as a National Natural Landmark, which is a program to encourage conservation of our natural heritage.

Now that I have learned some of the history of this land, it gives me pause to reflect on the impacts to this natural resource. The bombing caused some damage, to be sure, but our nation had just survived a terrible world war, and sacrifices were made so that peace would remain. There were sacrifices of our natural resources and of the soldiers who defended them.

Our bog will heal. Two-thirds of the moose wallows have since disappeared; floating mats of sphagnum moss now cover the scars. The bog is still some of the most untouched, unspoiled land I know. Today I can walk to the end of the boardwalk and experience peaceful solitude—broken only by the song of a white-throated sparrow and the call of a Connecticut warbler. mate well, but the