



*Back Home On
the Range*

*"A cold wind blew across the prairie when the last buffalo fell"
Sitting Bull, Lakota Chief*

Back Home on the Range

By

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It was a peaceful Sunday morning that day in Hawaii. On Oahu the clouds had settled on the mountain tops while a light breeze caressed a city that had begun to stir to meet the new day. Just before 8am the sky filled with incoming Mitsubishi Zero fighters and Carrier Bombers that blanketed the harbor where the U.S. Navy was moored. In a little over an hour 2,471 were dead and 19 ships damaged or destroyed, the USS Arizona still lying where it sunk that day.

America's response was immediate. The next day the United States declared war on Japan. The Pentagon immediately initiated a crash program to find a location to build a chemical weapons plant, somewhere inland away from the coast to prevent attack from the sea. Denver, Colorado was the ideal site. It lay on



RMA Denver, 1943

the western border of the vast Great Plains and it had the infrastructure and local population to build and operate the site. About 20,000 acres of land previously converted from prairie to agriculture was seized by Eminent Domain. It took only 5 months for approval and 7 months to build it. The site was called The Rocky Mountain

Arsenal. Chemical weapons were produced by the U.S Army from 1942 to 1982. In 1952 part of the site was leased to the Shell Oil Company for pesticide manufacture, principally DDT. All production operations stopped in 1982. The site was added to the "Superfund" National Priorities List (NPL) in 1984 for restoration encouraged by the army discovery of healthy, nesting Bald Eagles. " National Wildlife

Refuge” would be added to the name after containment, disposal and destruction of the contamination was achieved. This is the story of the restoration that is continuing today and will continue for the foreseeable future.

Restoring the Land

So how does one return a short-grass prairie to what it once was before the soil and groundwater was destroyed by decades of domestic farming and polluted by toxic chemicals? The short answer is you can't. But you can restore it to close to its prior use by deep well disposal; offsite chemical disposal; excavating and landfilling heavily contaminated soils; blocking contaminated groundwater flow with impermeable slurry walls or in-situ treatment with permeable ones; pump and treat of plumes of contamination to restore groundwater quality. Then re-population with the “keystone” animals, that created and sustained the habitat for other species. Then there's the ongoing replacement of invasive plants and grasses with native ones and control of the animal population to maintain a balanced environment. It's a task in perpetuity for the United States Fish and Wildlife Service USFWS.

“Build It and They Will Come”

Buffalo (Bison) came home to the Refuge in 2007, about 16 in all from the National Bison Range in



Buffalo (Bison) Wallow

Montana. These magnificent animals were the keystone when millions of them roamed over the Great Plains in long-past times until they were almost exterminated by Europeans in the 19th century. Their sharp hooves would break up dead plant litter and air the soil. They would feed on native plants and restore

them with their dung. They would create wallows that would later fill with rainwater when they rolled on the ground before the rut and in the spring to rub off their winter coat. Above all, they would be sacred to the Native American population who once relied on the buffalo for their very survival. The herd has grown to 250 animals in 2024 through calf births and imports from other locations. Black-tailed Prairie



Swainson's Hawk with Prairie Dog Kill

Meadowlark that serenades the coming of spring with its musical trill. American pelicans, Kingfisher, blue herons, a variety of ducks and other waterfowl migrate to the ponds in the spring and summer months.

Perhaps the greatest challenge has been restoring the balance between native vegetation and animal population. Tackling the flora/ fauna balance has involved constructing experimental plots to study native and invasive vegetation, controlled burns and reseeding, managing prairie dog populations that feed on and spread forbs and other invasive plants and treating and eliminating prairie dog plagues that affect predators. In the past few years, the refuge has scored a win/win by introducing the

Dog burrows were moved away from the contamination and became a prime food source for carnivores. And the animals came back in droves. Mule and whitetail deer along with coyote, raptor bald eagles, falcons, barn owls and burrowing owls and numerous songbird species, especially the Western



Western Meadowlark

Black- Footed Ferret that was thought to be extinct for prairie dog control. A single black footed ferret can eat 100 prairie dogs in a year!

There is an ongoing review and maintenance of the condition of the landfills and to assess actions that may be needed to cope with climate change and peripheral urban development.



Currently, (2024) an assessment is being made of storm water discharge from adjacent industrial concrete pads and the rooftops of residences crowding the Arsenal border that created gullies impacting the roaming patterns of the buffalo.

Was it Worth It?

The Great Plains once occupied 500,000 square miles all the way from Canada to Mexico and Missouri to the Rocky Mountains. Is the restoration of a mere 15,000 acres of Short Grass Prairie worth it? The Rocky Mountain Arsenal National Wildlife Refuge is a living museum where visitors can go back in time to experience what has been lost and can be restored. The refuge is open from dawn 'till dusk with no entry fee 365 days a year, except when managing prescribed burns, animal control and prairie dog plague outbreaks. There are 10 miles of hiking trails and a self-guided circular wildlife drive for viewing

the bison and other species. Refuge employees and volunteers conduct guided tours and put on educational talks and programs for all ages at the Visitor Center. The thousands of visitors and the learning from educational programs will sustain support for the Refuge message far into the future. But it's also just a peaceful place away from the bustle to admire the mountains, the flora and fauna and imagine what it was like before "civilization" arrived so many years ago.

Yes, it was, and is, well worth it.

PostScript

The Rocky Mountain Arsenal Website Is here:

<https://www.fws.gov/refuge/rocky-mountain-arsenal>

Information on school educational programs at the Refuge can be found here:

<https://www.fws.gov/refuge/rocky-mountain-arsenal/school-programs>

A gallery of photos I've taken at the refuge over the years can be found here:

<https://www.alistairmontgomeryjourneys.com/arsenal>