FROM EXPLORATION TO EXAMINATION TO EXHIBITION OF THE AMERICAN FRONTIER

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Fig 1. Daniel Boone Escorting Settlers through the Cumberland Gap, George Caleb Bingham, 1851–52

Manifest Destiny

"Stand at the Cumberland Gap and watch the procession of civilization marching single file – the buffalo following the trail to the salt springs, the Indian, the fur trader and hunter, the pioneer farmer – and the frontier has passed by. Stand at South Pass in the Rockies a century later and see the same procession with wider intervals between." **1.** It is estimated that between 200,000 and 300,000 immigrants passed through the gap on their way into Kentucky and the Ohio Valley before 1810. **2.**

The colonization of America radically altered the natural and cultural landscapes, their habitats, their species, and the indigenous cultures of the regions. Colonization brought invasive species, disease and overlays of governance, religious dogma, legal writs, technical advancements, and the privatization and commodification of land, which have reduced the landscapes, species and cultures to a fraction of their former whole.

The land was usurped and the natives were suppressed through a series of laws, inventions, and technological advances. These included the development of the land survey system of 1775, the Land Ordinance Act of 1785, the invention of the plow that broke the plains in 1837, the tractor, which replaced the team of horses, the Homestead Act in 1862, the Hatch Act of 1887, the Enlarged Homestead Act of 1909, which populated Shortgrass prairie lands without a reliable water source, and the Stock-Raising Homestead Act of 1916. These laws, combined with the nationwide expansion of the railroads, which established mecha-

Fig 2. Representation of Manifest Destiny (To expand the United States from the Atlantic Ocean to the Pacific Ocean). John Gast, 1872.

nized transcontinental transportation and telegraph networks, and the development of a highway system in the 1920's, revolutionized the population and economy of the American West to which homesteaders, ranchers, settlers and speculators laid claim to lands forcibly abandoned by the indigenous people.

John L. O'Sullivan, a columnist for the Democratic Review, coined the phrase in an editorial entitled Annexation in 1845. He stated that the annexation of Texas and "the whole of Oregon" was "our manifest destiny to overspread the continent allotted by Providence for the free development of our yearly multiplying millions". The providential and political drive of Manifest Destiny across America was so successful that by the late 1800's to the early 1900's the natural and cultural landscapes of America had been radically transformed from estuary to port, from forest to city, from prairie to farmland, from plains to rangeland, and from mountains to mines. And with the landscape went the plants and animals, which had inhabited them. From the seas, whales were hunted to light the cities with whale oil. To this day, whales are endangered species. From the forests came the passenger pigeon, whose flocks darkened the skies for hours as they passed overhead. They fed on acorns, chestnuts, beechnuts and seeds within the eastern forest. They numbers were estimated to be 3 to 5 billion birds prior to the European colonization of America. They were hunted by finding their communal roosts within the forests, fed alcohol soaked grains, smoked from their communal roots, netted, shot and killed by the thousands. Their plucked bodies were salted and shipped via boxcar to feed the poor and the slaves of the crowded Eastern cities. In New York City, in 1805, a pair of pigeons sold for two cents.

Fig 3. The Passenger Pigeon (Columba migratoria) Reproduced from the John J. Audubon plate, Birds of America, Mershon, 1907. This bird species, now extinct, was so plentiful in Audubon's day that he wrote of his experience in Kentucky in 1813: "The air was literally filled with pigeons, the light of noonday was obscured as if by an eclipse".

John James Audubon, 1785-1851, ornithologist, naturalist, hunter, and painter, sought, catalogued, and painted the birds of America. Audubon documented other endangered birds and lobbied for their protection, prior to their extinction as the Carolina Parakeet, the Labrador Duck and the Great Auk. Audubon, like many of his predecessors and followers accompanied the surveyors, draftsmen, frontiersmen, naturalists, artists, photographers, sculptors, and speculators to collect, document and catalog the landscape and species of frontier America. Their work and patiently recorded observations assisted the politicians, scientists and fledgling museums on the East Coast and established museums in Europe, and set a precedent for future scientific study.

Here Audubon describes the preparations for slaughter at a known pigeon-roosting site: Few pigeons were then to be seen, but a great number of persons, with horses and wagons, guns and ammunition, had already established encampments on the borders. Two farmers from the vicinity of Russelsville, distant more than a hundred miles, had driven upwards of three hundred hogs to be fattened on the pigeons, which were to be slaughtered. Here and there, the people employed in plucking and salting what had already been procured, were seen sitting in the midst of large piles of these birds. The dung lay several inches deep, covering the whole extent of the roosting-place." **3.** On The Passenger Pigeon", Birds of America, John James Audubon

By the 1850s, it was noticed that the numbers of birds seemed to be decreasing, but still the slaughter continued, accelerating to an even greater level as more railroads and telegraphs were developed after the American Civil War. They were gone by 1914, when the last living passenger pigeon, Martha died at the Cincinnati Zoo, Cincinnati, Ohio. Her body was frozen in a block of ice and shipped to the Smithsonian Institution, where she was skinned and mounted for display. Relentless hunting, cutting of forest habitat and disease brought the extinction of the passenger pigeon, like the forests they inhabited. Their imminent extinction spurred legislation for their protection in Ohio and Michigan, but the efforts came too late to save this gregarious bird from extinction. Today, the preserved bodies of 1,532 passenger pigeons can be found in the storerooms and glass cases of Natural History Museums around the world.

The American bison of the grasslands was the keystone species of the Mid-western prairies and the Western plains. Bison were hunted almost to extinction in the 19th century and were reduced to a few hundred by the mid-1880s from estimates of 60-100 million animals. **4.** They were hunted for their hides, choice cuts of meat and tongues, with the rest of the animal left behind to decay on the ground. After the animals rotted, their bones were collected and shipped back east in large quantities on the new Transcontinental railroads. The bison bones were ground down for use as fertilizer, for bone china, and glue in the

east. The US Army sanctioned and actively endorsed the wholesale slaughter of bison herds. Bison meat was a daily ration for the soldiers at frontier outposts and stateside garrisons. The US Federal government promoted bison hunting for various reasons: to allow ranchers to range their cattle without competition from other bovines, to accommodate the railroad industry, to weaken the North American Indian population by removing their main food source and to pressure them onto the reservations. Without the bison, native people of the plains were forced to leave the land or starve to death.

The Shortgrass prairie ecosystem of the North American Great Plains originally extended from the eastern foothills of the Rocky Mountains east to Nebraska and included rangelands in Colorado and Kansas and the high plains of Oklahoma, Texas and New Mexico to the south. **5.** These rangelands were maintained by grazing pressure of American Bison, the grassland's keystone species. The dominant grasses of the Shortgrass prairie are blue grama, (Bouteloua gracilis) and buffalograss (Bouteloua dactyloides), which have adapted to the semi-arid continental climate of sporadic annual rainfall, extended droughts and high winds. The adventitious rooted, natural grasses of the Great Plains kept the soil in place and trapped moisture, even during periods of prolonged drought and high winds. Here the Plains Indians trailed the vast herds of bison that followed a seasonal migration across the grasslands. These included the nomadic Arapaho, Assiniboine, Blackfoot, Cheyenne, Comanche, Crow, Gros Ventre, Kiowa, Lakota, Lipan, Plains Apache, Plains Cree, Sarsi, Sioux, Shoshone, and Tonkawa. The second group of Prairie Indians, were semi-sedentary tribes who, in addition to seasonally hunting bison, lived in villages and raised crops as corn, beans, squash and tobacco. These included the Arikara, Hidatsa, Iowa, Kaw, Mandan, Omaha, Osage, Otoe, Pawnee, Ponca, and Wichita. The tribes followed the migratory herds

Fig 4. Bisontanz der Mandan Indianer, Bison-Dance of the Mandan Indians in front of their Medicine Lodge, Karl Bodmer, 1840-1843. Maximilian Prince of Wied's Travels in the Interior of North America.

of the American Bison, which were estimated by frontiersmen at 60 to 100 million animals in the early-19th century. By the close of the 19th century, in the span of a person's lifetime, the bison herds were exterminated by profiteer hunters, political decrees, military action and manifest destiny. The native tribes were killed or marched to reservations. The plains became rangeland for cattle, and the prairies were plowed for agriculture.

In the space of a single lifetime, between 1830 and 1900, the biodiverse, tallgrass prairie was steadily transformed to farmland. Centuries of accumulated loess and organic matter created a thick mantle of topsoil, which was opened for farming with the 1837 invention of the steel plow by John Deere in Grand Detour on the Rock River in Illinois. Today, 98% of the original tall grass prairie has been converted to agriculture. What remains of the original prairie are highly fragmented islands that need to be expanded and connected to allow for plant and species migration in future.

Age of Exploration

And what remains of the frontier explorations and expansion to the Pacific coast? Crates and cases of skins, specimens. drawings and paintings made their way back East on horseback, stagecoach, boat, and railroad from the frontier collectors to the Universities, and to Museums of Natural History in Washington, D.C., Cambridge and New York City. Thomas Jefferson began the calculated exploration and documentation of the new frontier, which doubled in size

Fig 5. "Lewis and Clark on the Lower Columbia" by Charles Russell (1905)

Fig 6. A map of Lewis and Clark's track, across the western portion of North America from the Mississippi to the Pacific Ocean : by order of the executive of the United States in 1804, 5 & 6 / copied by Samuel Lewis from the original drawing of Wm. Clark ; Saml. Harrison, fct. Library of Congress, Geography and Map Division

of the United States with the Louisiana Purchase of 1803. "Jefferson quickly ordered exploration and documentation of the vast territory. In 1804, he appointed Lewis and Clark to lead an expedition "to explore the Missouri river, and such principal stream of it, as, by its course and communication with the waters of the Pacific ocean; whether the Columbia, Oregon, Colorado or any other river may offer the most direct and practicable communication across the continent for the purposes of commerce" Jefferson also instructed the expedition to study the region's native tribes (including their morals, language, and culture), weather, soil, rivers, commercial trading, animal and plant life. A major role of the federal government was sending out surveyors, naturalists, and artists into the West to discover its potential.

William Clark, frontier explorer, was honored with his name being attached to new species and new places. The western American plant genus Clarkia is named after him, as are the cutthroat trout (Oncorhynchus clarki), Clarke's Grebe (Aechmophorus clarkii), and Clark's Nutcracker (Nucifraga columbiana), a large passerine bird, in the family Corvidae. Several states have named counties and rivers in his honor.

Following the Lewis and Clark expeditions in 1805-6, Under the orders of General James Wilkinson, commander of the western branch of the American Army, Zebulon Pike led a party to find and map the head waters of the Mississippi. Upon his successful return, Pike was ordered to find the headwaters of the Red and Arkansas Rivers in Spanish territory, eventually reaching the Rio Grande. On his return trip, Pike sighted the peak named after him. He was captured by the Spanish and released after a long overland journey but all of his maps and field notes were confiscated and destroyed. In 1819-20, Major Stephen H. Long led the Yellowstone and Missouri expeditions through the Great Plains, which he categorized as an arid, useless "Great American Desert." His observations discouraged settlement of the Plains for decades.

In 1810, English botanist and ornothologist, Thomas Nuttall traveled to the Great Lakes. In 1811, Thomas Nuttall and botanist and plant collector, John Bradbury were members of the Astor Expedition and traveled up the Missouri River documenting and drawing plant and animal life. Although Lewis and Clark had traveled this way previously, many of their specimens had been lost. Therefore the many of the plants collected by Nuttall on this trip were unknown to science. John Bradbury was the first scientist in America

to record and document earth quakes. In December 1811 and 1812, the New Madrid interplate earthquakes were felt over 1 million square miles. The imminent War of 1812 with Britain over the future of the Northwest Territory and trade blockades to France, caused Nuttall to return to London via New Orleans. In London, he organized his vast collection of plants and discussed his findings with other scientists. In 1815 he returned to America and published The Genera of North American Plants in 1818. From 1818 to 1820 he traveled along the Arkansas and Red Rivers, returning to Philadelphia and publishing his Journal of Travels into the Arkansas Territory during the year 1819. In 1825 he became curator of the botanical gardens at Harvard University. He published his Manual of the Ornithology of the United States and of Canada (1832 and 1834). Many birds and plants bear his name including Nuttall's woodpecker, Picoides nuttallii and the Pacific dogwood, Cornus nuttallii for example.

Catlin began his journey in 1830 when he accompanied General William Clark, who was the Agent of Indian Affairs on a diplomatic mission up the Mississippi River into Native American territory to establish contact and to conduct negotiations with the tribes. Catlin documented the landscapes and the natives, often in ceremonial dress and during buffalo hunts, ceremonies, and sports. His work sketched out his impression of the American West. Between 1830 and 1836, he took five trips and visited fifty tribes. In 1838, he traveled the Missouri River 1000 miles to Fort Union, where he stayed for several weeks among the natives, who had not been touched by European contact. He documented the Pawnee, Omaha and Ponca in the south and the Mandan, Hidatsa, Cheyenne, Crow, Assiniboine and Blackfoot to the north. Here, at the edge of the frontier, he produced the most vivid and compelling portraits of his career showing proud warriors in ceremonial dress, before disease and American frontier expansion decimated the tribes. His later explorations followed the Arkansas, the Red River and Mississippi River and trips to the Great Lakes and south to Florida. During which time he produced 500 paintings offering a view into the shrinking frontier, along with a substantial collection of artifacts representing the native cultures.

When Catlin returned east in 1838, he assembled these paintings and numerous artifacts into his Indian

Fig 7. Stu-mick-o-sucks, Buffalo Bull's Back Fat, Head Chief, Blood Tribe (Blackfoot/Kaina), George Catlin, 1832.

Gallery salon style and began delivering spirited public lectures, which drew on his personal recollections of life among the American Indians. Catlin traveled with his Indian Gallery to major cities as Pittsburgh, Cincinnati and New York. He had always hoped that the US government would purchase these paintings for the American public, but Congress rejected his initial petition to purchase the works. So in 1839, financially strapped, he packed up his collection of 500 paintings for a tour of European capitals.

In 1841 Catlin published Manners, Customs, and Condition of the North American Indians, in two volumes, with about 300 engravings which he published at his own expense. Three years later he published 25 plates, entitled Catlin's North American Indian Portfolio, and, in 1848, Eight Years' Travels and Residence in Europe. Bankrupted by the expenses, the entire Indian Gallery was purchased from creditors by the American businessman, Joseph Harrison, Jr. in the 1850's and stored. From 1852 to 1857 he traveled through South

and Central America and later returned for further exploration in the Far West. The record of these later years is contained in Last Rambles amongst the Indians of the Rocky Mountains and the Andes (1868) and My Life among the Indians (ed. by N. G. Humphreys, 1909). In 1872, Catlin traveled to Washington, D.C. at the invitation of Joseph Henry, the first secretary of the Smithsonian. Until his death later that year Catlin worked in a studio in the Smithsonian "Castle." After Catlin's death, Harrison's widow donated the original Indian Gallery—more than 500 works—to the Smithsonian in 1879. **6.** The nearly complete surviving set of Catlin's first Indian Gallery painted in the 1830s is now part of the Smithsonian American Art Museum's collection. Some 700 sketches are in the American Museum of Natural History, New York City.

Artist George Catlin traveled up the Missouri River to what is now North Dakota and produces hundreds of sketches and paintings depicting the landscapes, shaped by the natives with fire and by the bison with their migrations across the plains and he represented the native cultures in their villages before they were dispossessed. Other artists followed, notably Karl Bodmer, a Swiss artist and a superb draftsman hired by the German Prince Maximillian on a journey up the Missouri River to the Great Plains, where he made detailed drawings and paintings of the native cultures and the landscape. Prince Maximillian wrote text of his explorations Maximilian Prince of Wied's Travels in the Interior of North America, and gathered plants and animals from his exploration,which were shipped back to Germany for examination and exhibition. In 1820, John James Audubon explored the Mississippi River watershed collecting specimens, specially mounting them for painting, making sketches and producing paintings of birds depicted in a naturalistic style feeding, courting, in flight in their habitat. He vowed to paint every bird species in America. The result of his monumental effort is Birds of America. The work contains just over 700 North American bird species. By 1840, the discoveries of explorers, naturalists, and artists had produced maps showing the rough outlines of the entire West to the Pacific Ocean, Jefferson's request was finally fulfilled.

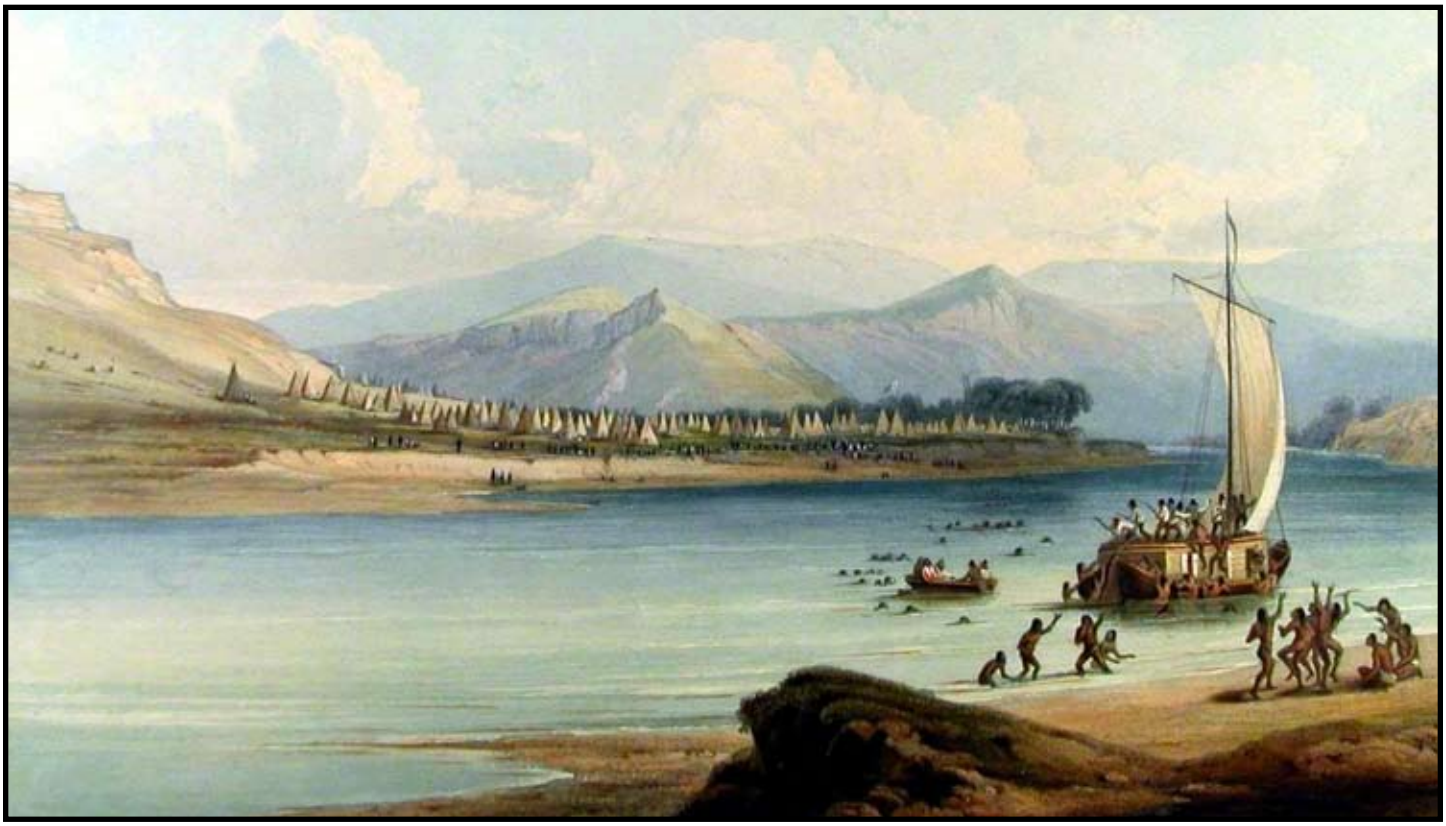

Fig 8. Camp of the Grosventres of the Prairies on the Bighorn River by Karl Bodmer. This is an aquatint engraving of a watercolor painting from a 1832-1834 series portraying American Indian life, and Western scenery.

References and Notes

1. Frederick Jackson Turner: The Significance of the Frontier in American History, 1893

2. Cumberland Gap National Historical Park

3. “On The Passenger Pigeon” Birds of America - By: John James Audubon

4. Hornaday, W.T. and Gannett, Henry, E.M. Map illustrating the extermination of the American bison, United States: Government. Printing Office, 1889 Library of Congress Geography and Map Division Washington, D.C.

5. Fitzgerald, Edward, Map of the Great Plains, Center for Great Plains Research at Univ. of Nebraska-Lincoln, 2008

6. Smithsonian American Art Museum - About George Catlin