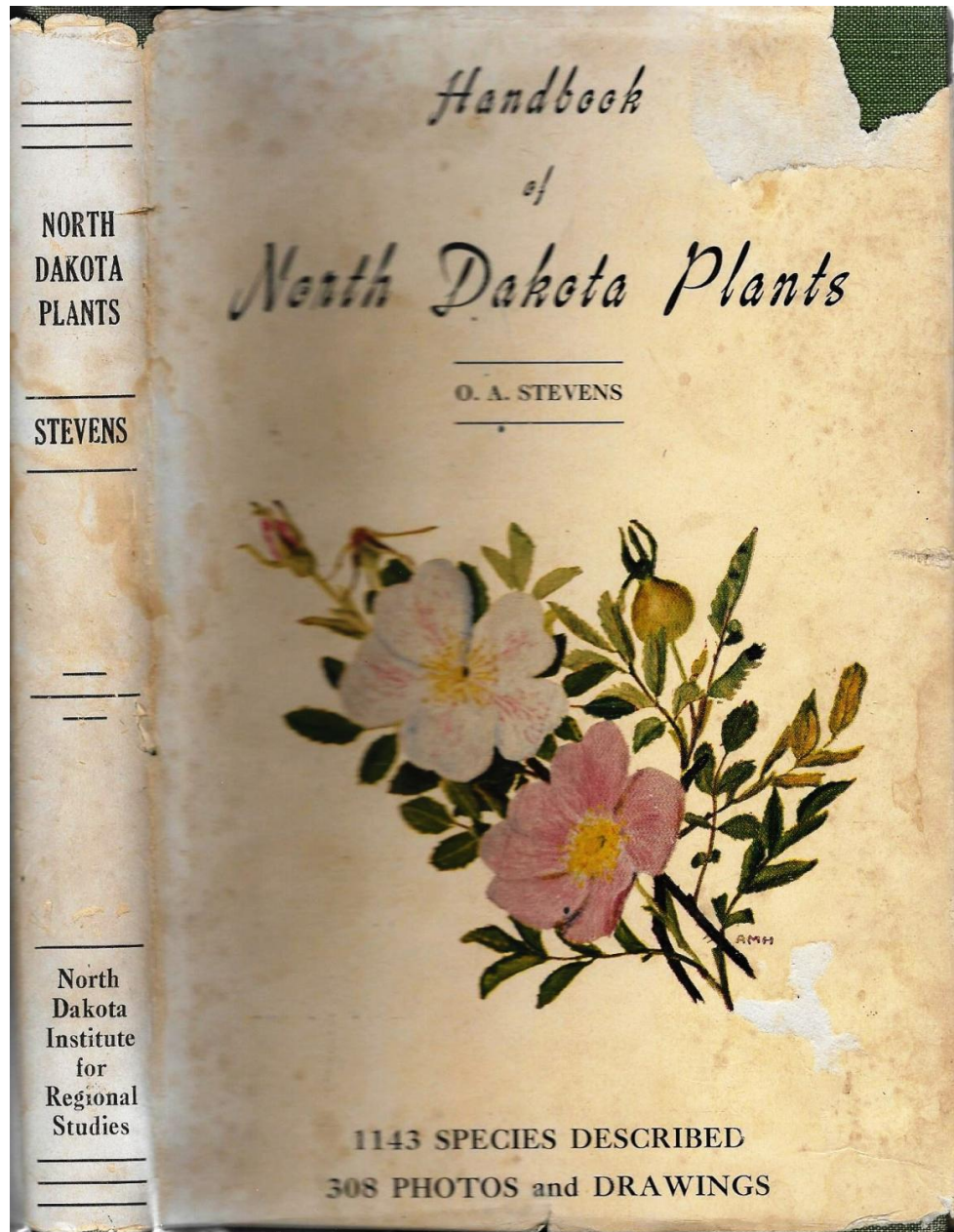


The Legacy of a Life in Botany: O.A. Stevens and the Handbook of North Dakota Plants

Laura Aldrich-Wolfe and Steven Travers
Department of Biological Sciences
North Dakota State University



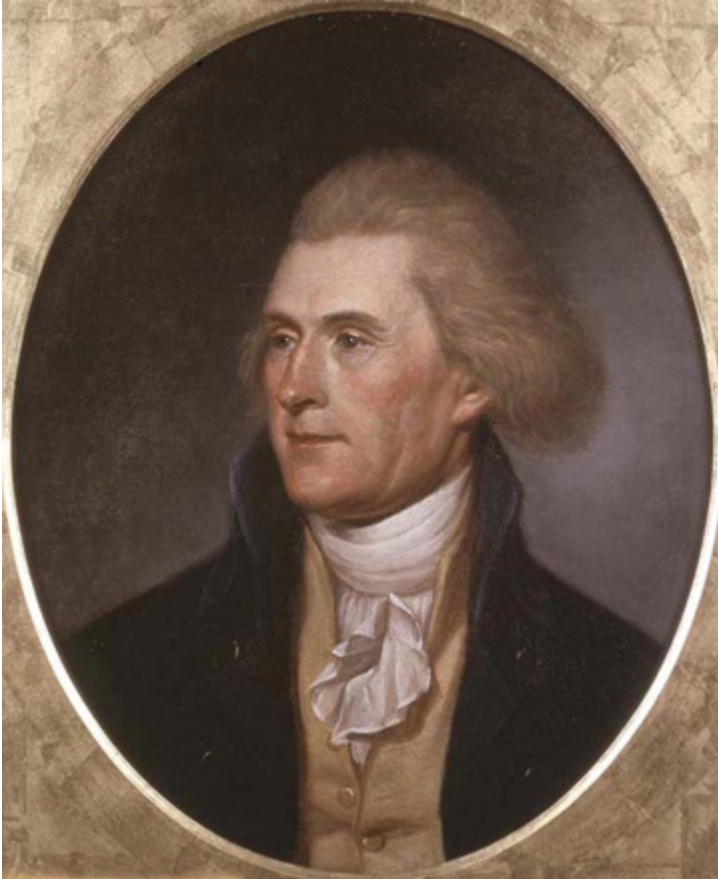
Rosa arkansana Porter
Prairie wild rose



Photo credit: Gary Eslinger/USFWS

Original artwork: Alvina Halgrimson
McGregor, North Dakota
Photo credit: Abebooks.com

The Corps of Discovery



Thomas Jefferson (1743-1826)
Charles Willson Peale, Philadelphia, 1791

“Washington D.C., June 20, 1803

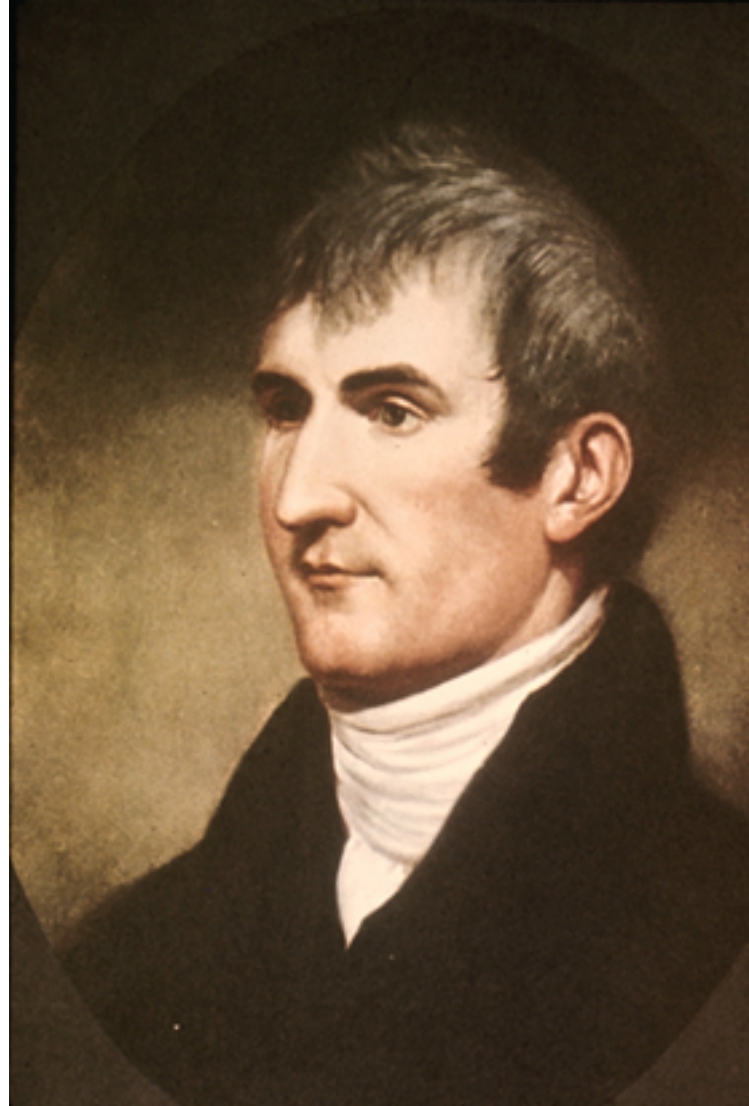
To Meriwether Lewis Esquire, Captain of the first regiment of Infantry of the United States of America.

The Object of your mission is to explore the Missouri river & such principal stream of it as by it's course and communication with the waters of the Pacific Ocean, whether the Columbia, Oregon, Colorado or any other river may offer the most direct & practicable water communication across this continent for the purpose of commerce."

—Thomas Jefferson



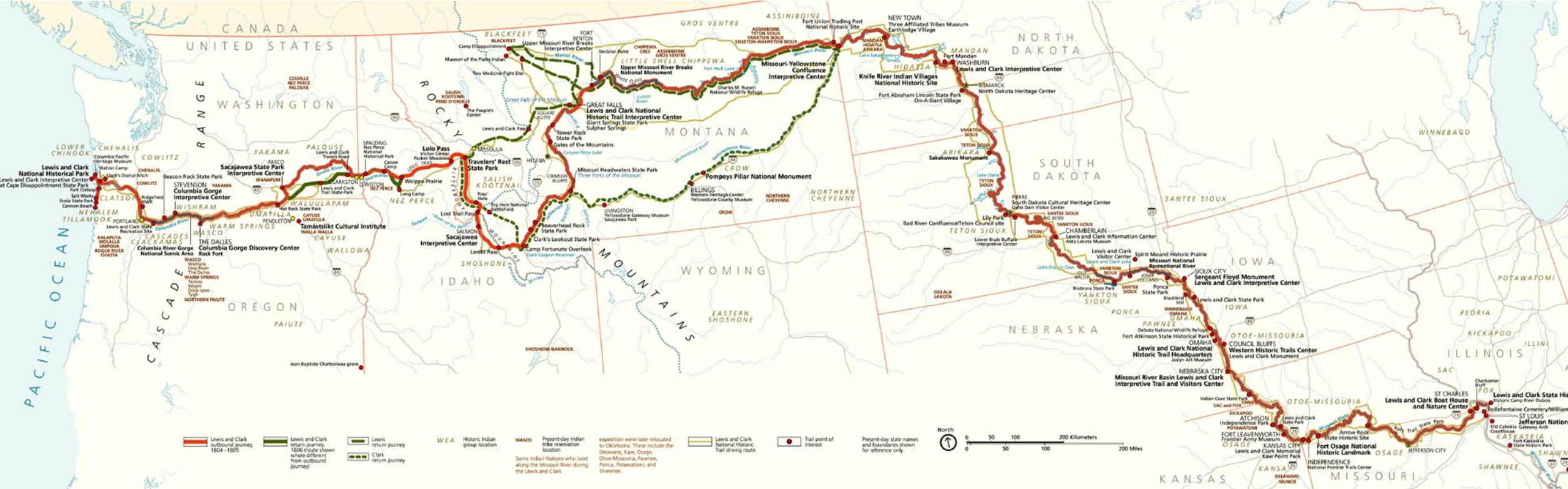
William Clark (1770-1838)



Meriwether Lewis (1774-1809)

Portraits by Charles Willson Peale, 1807

The Corps of Discovery - Lewis and Clark Expedition 1804-1806



Map: NPS

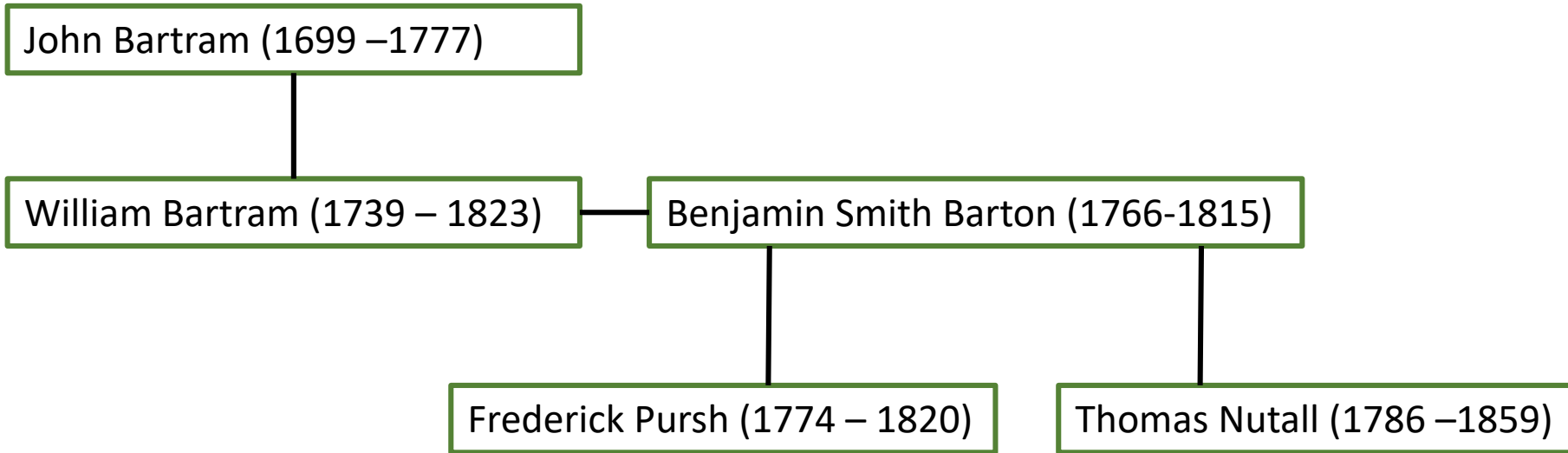
Philadelphia as a center for botany and scientific learning



Photo credit: Matthew Halley

Bartram's Garden (established 1728)
Philadelphia, PA
Oldest botanic garden in United States

Philadelphia as a center for botany and scientific learning



Philadelphia as a center for botany and scientific learning

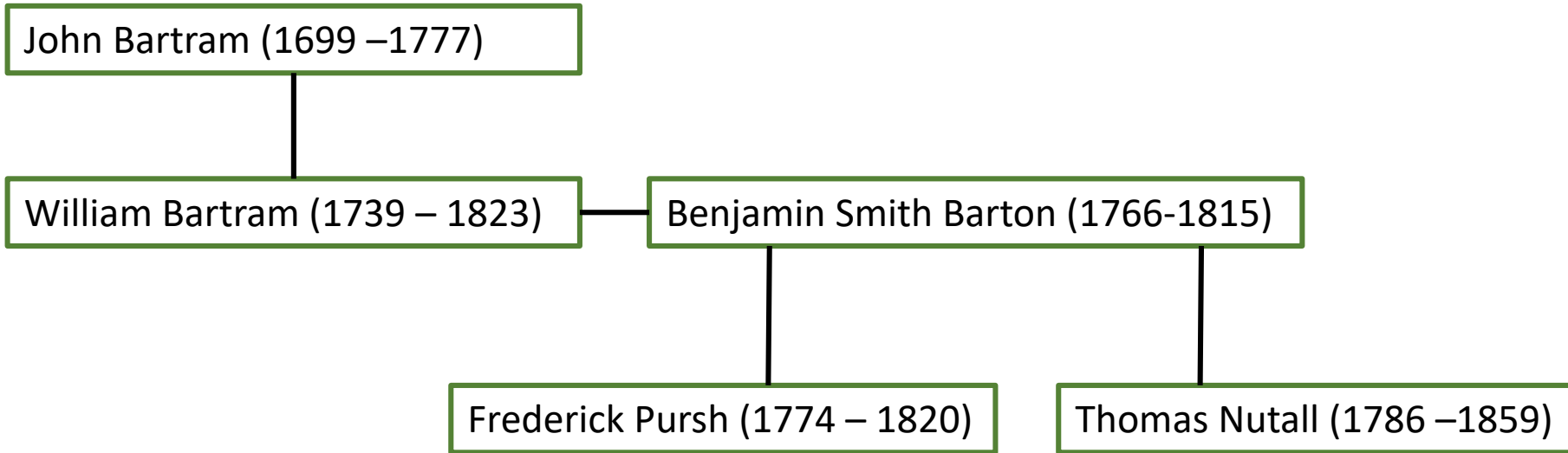


John Bartram (1699 –1777)
The King's Botanist
Father of American Botany
Illustration credit: Howard Pyle



William Bartram (1739 – 1823)
Portrait by Charles Willson Peale

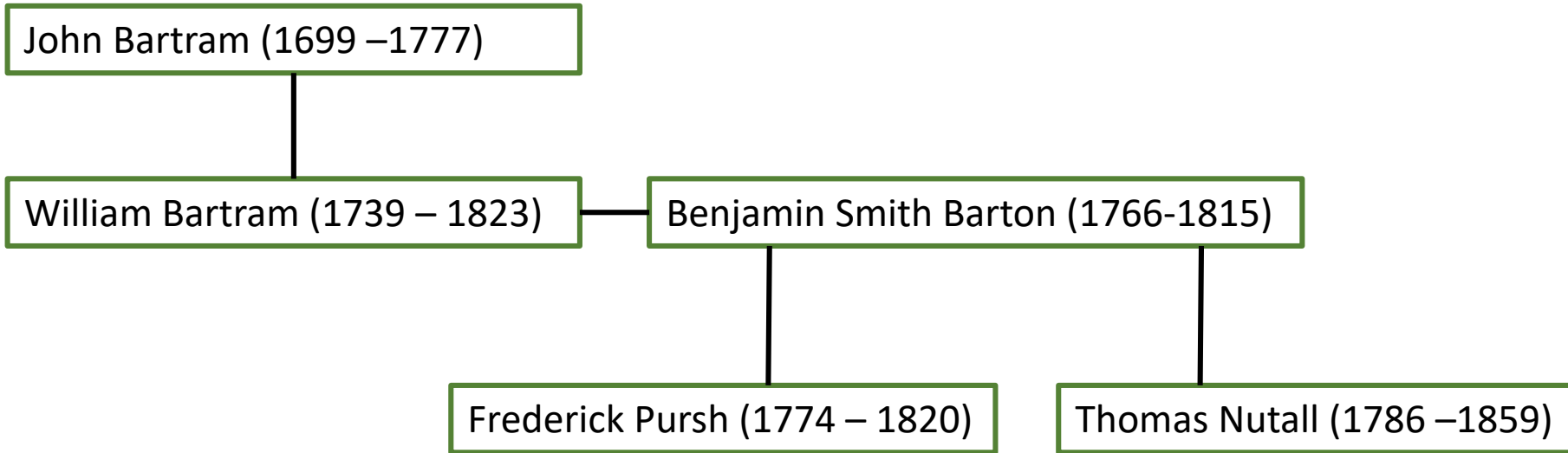
Philadelphia as a center for botany and scientific learning

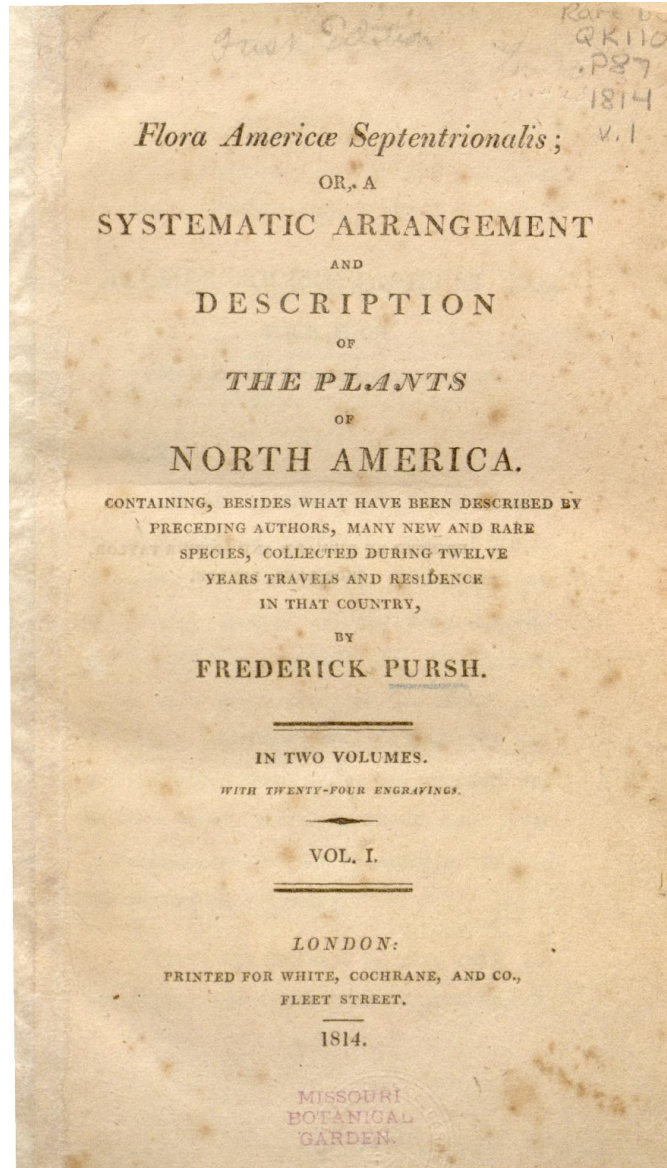




Benjamin Smith Barton (1766-1815)
Portrait by Samuel Jennings

Philadelphia as a center for botany and scientific learning



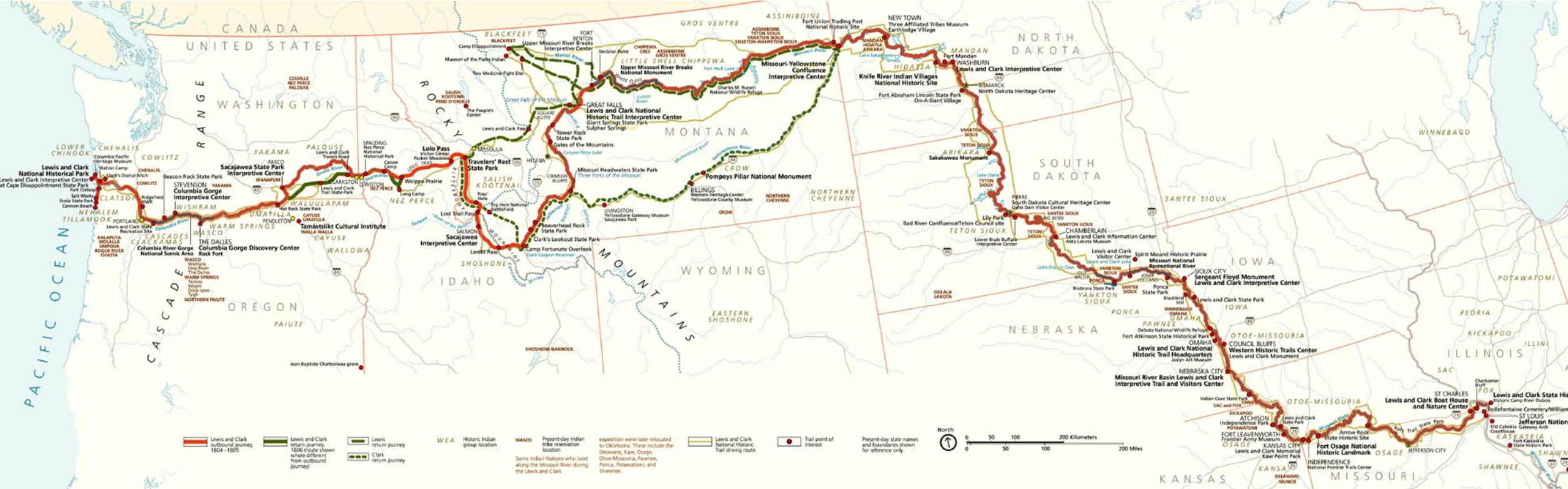


Frederick Pursh (1774 – 1820)

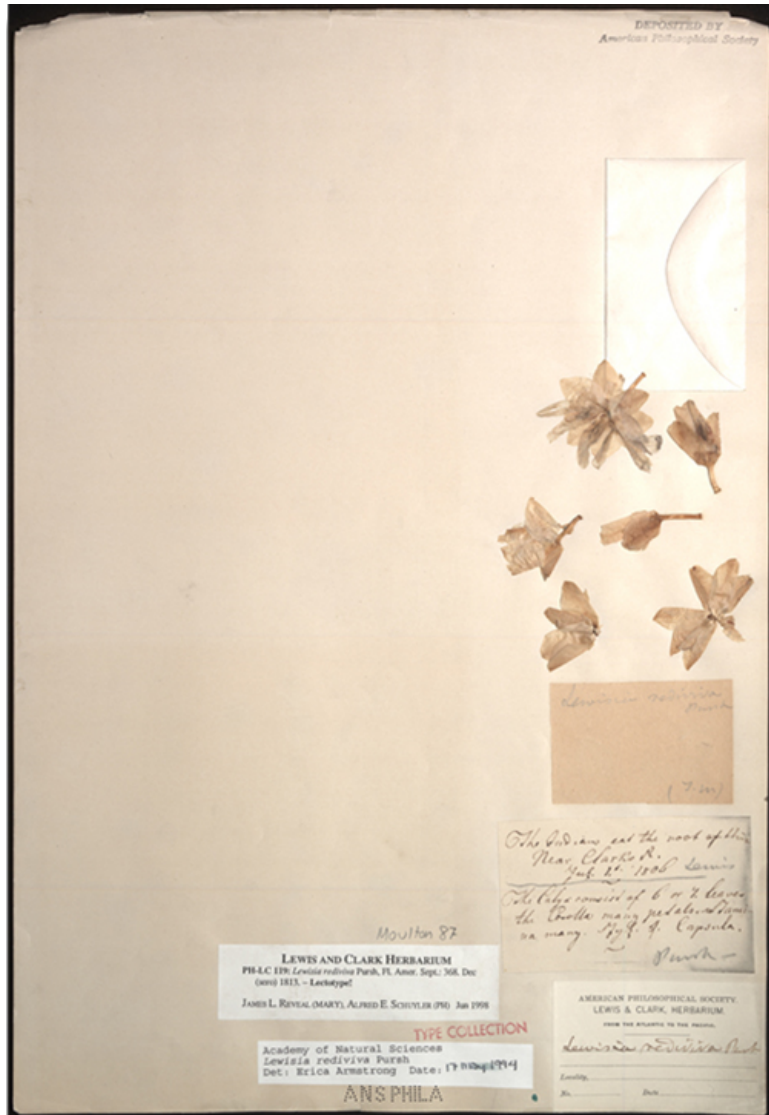


Thomas Nuttall (1786 – 1859)
Portrait by unknown artist

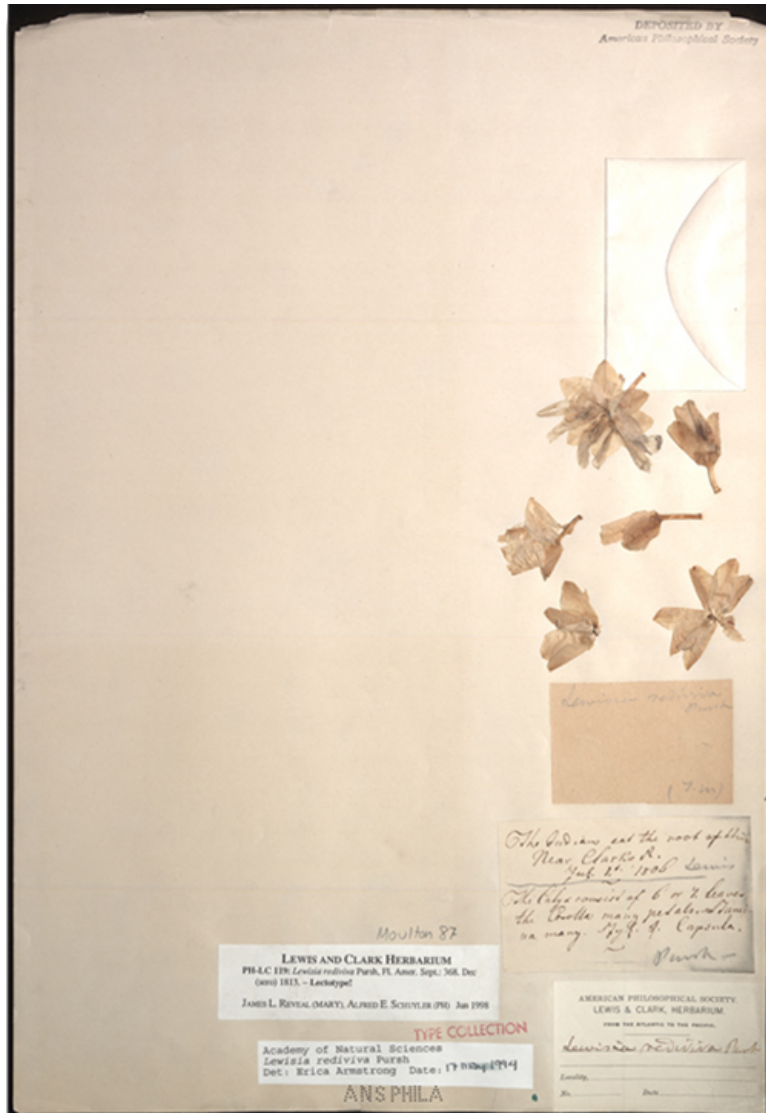
The Corps of Discovery - Lewis and Clark Expedition 1804-1806



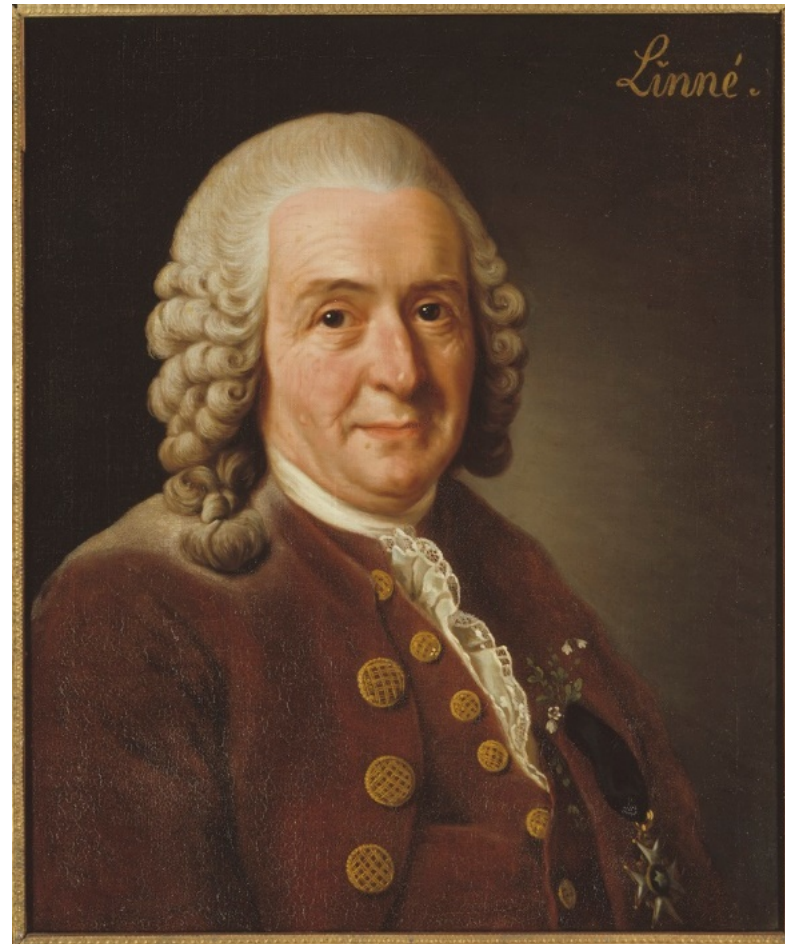
Map: NPS



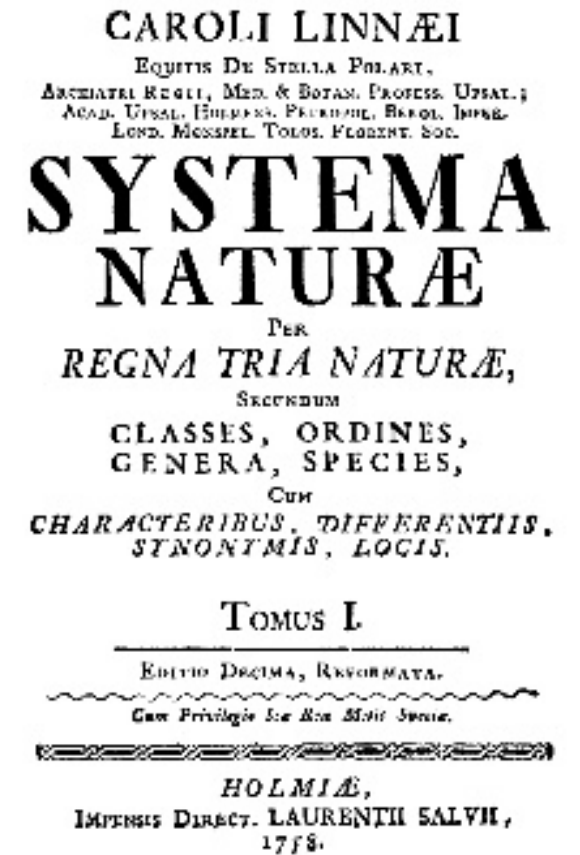
Lewisia rediviva Pursh

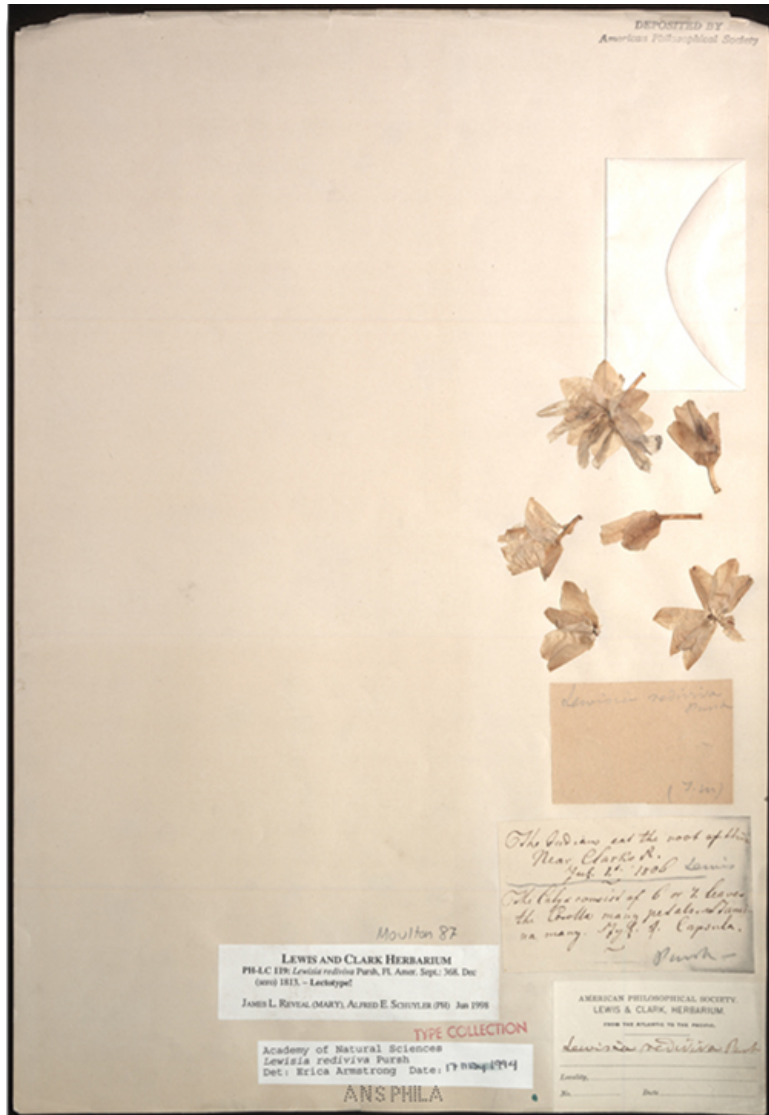


Lewisia rediviva Pursh



Carl Linnaeus (1707-1778)
Portrait by Alexander Roslin





Lewisia rediviva Pursh



Lewisia rediviva Pursh
bitterroot
Photo credit: Andrew Kratz



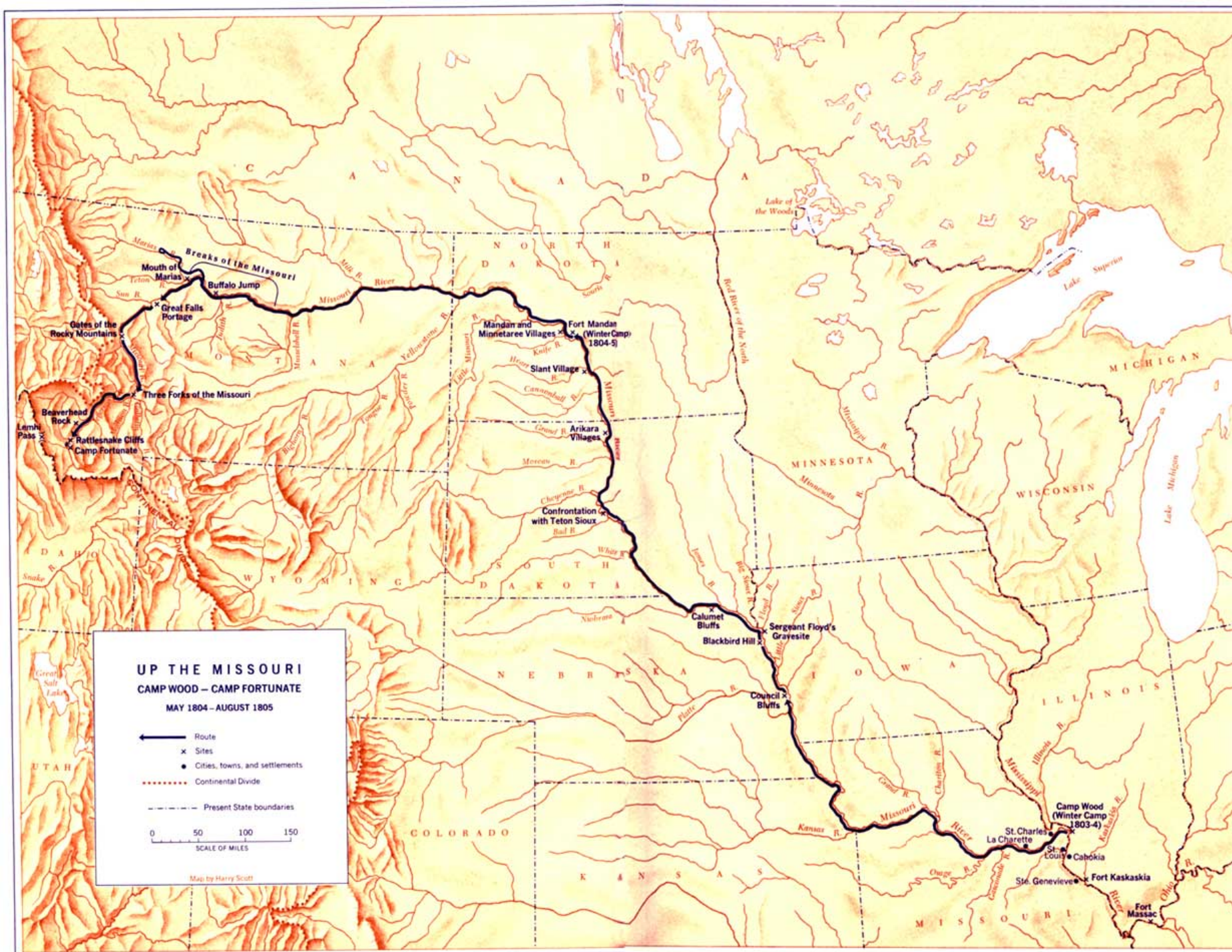


Photo credit: USFS



Clarkia pulchella, “beautiful” *Clarkia*
named in honor of William Clark

Frederick Pursh *Flora Americae
septentrionalis*, 1813



Lewisia rediviva Pursh

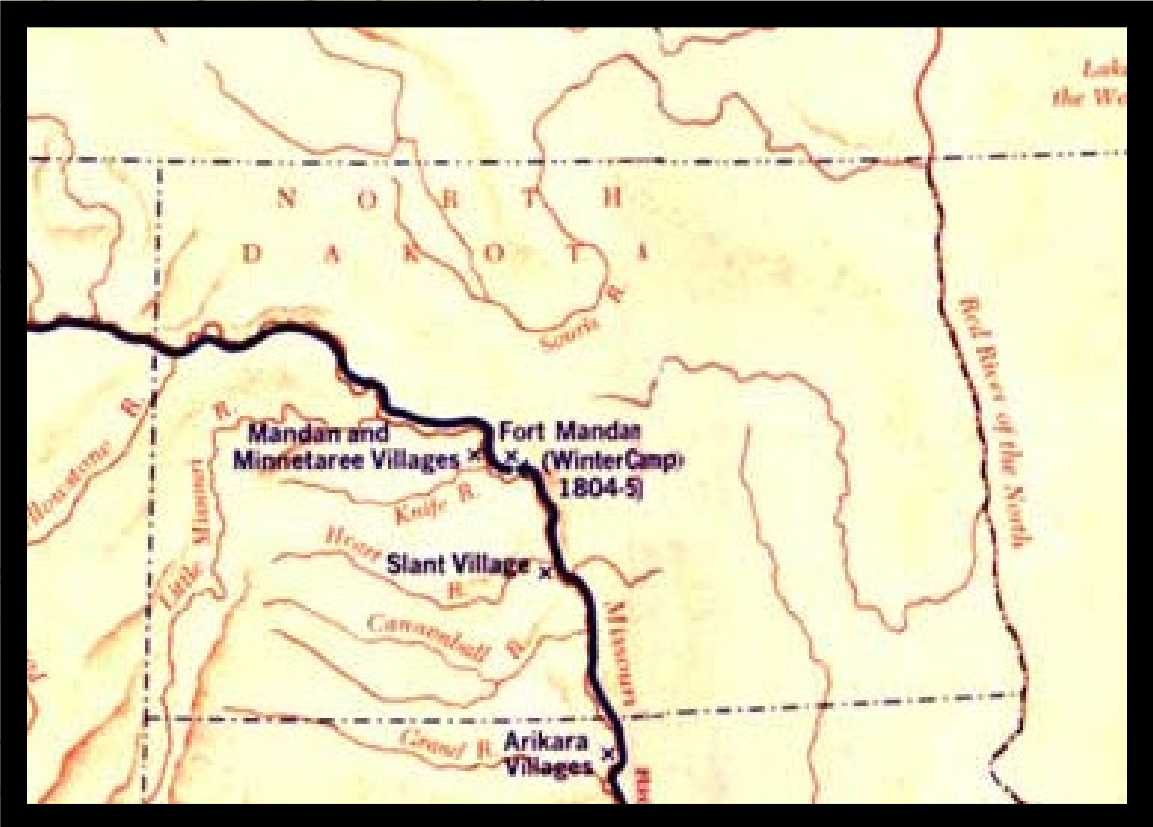
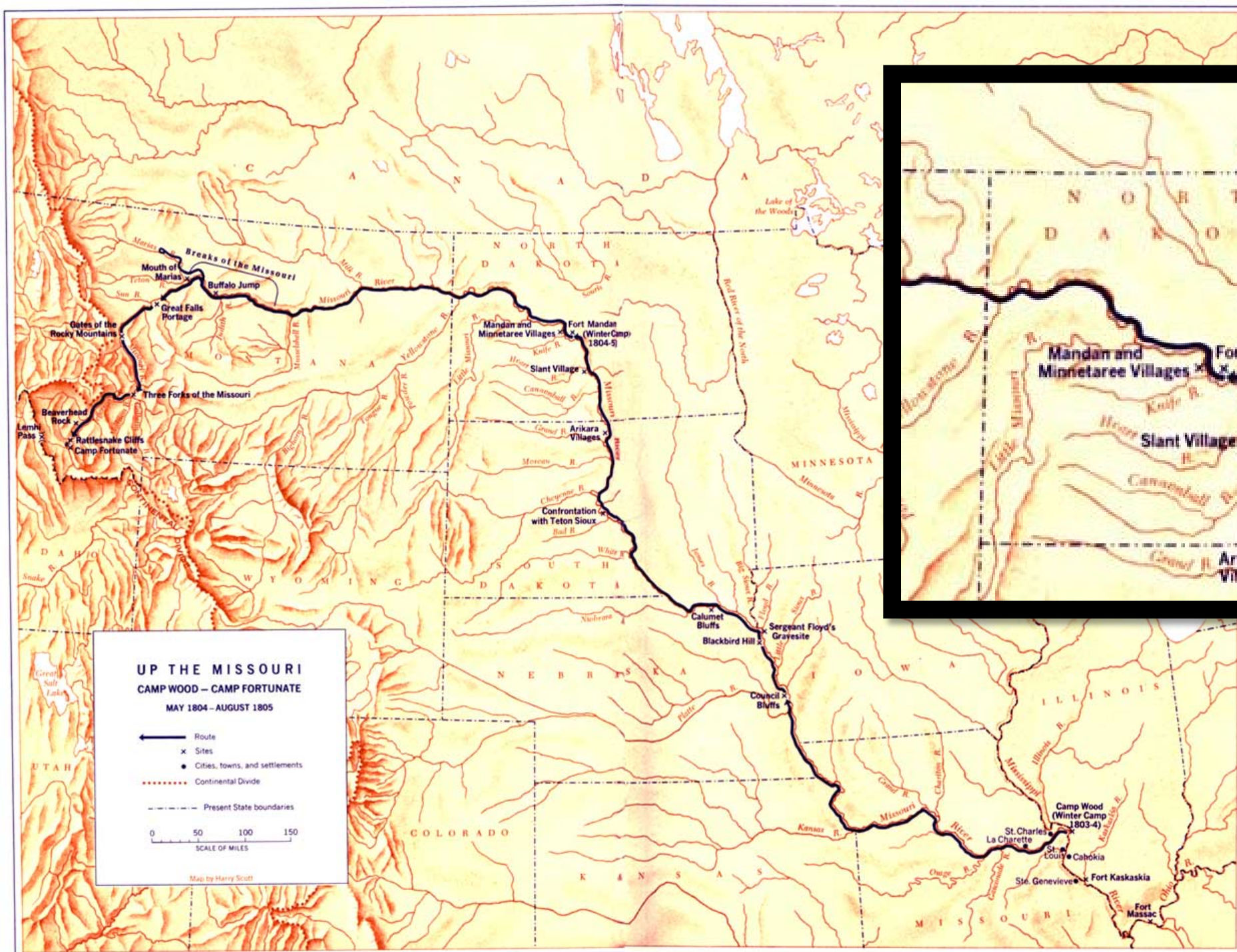


Clarkia pulchella Pursh

Credit: NPS



Linum lewisii Pursh
wild blue flax
Photo credit: Skoch3



Credit: NPS



Hidatsa Village, Earth-covered Lodges, on the Knife River, 1810 Miles above St. Louis, George Catlin (1832)



Mandan red clay corn
Zea mays L.

Three Sisters
corn *Zea mays* L.
beans *Phaseolus* L.
squash *Cucurbita* L.



“One kind of tobacco (*Nicotiana quadrivalvis* Pursh),
was grown by the Indians and is mentioned by Rydberg
as ‘escaped in N.D.’ but we have no record of it.”
O. A. Stevens, *Handbook of North Dakota Plants*

Nicotiana quadrivalvis Pursh
Indian tobacco
Photo credit: Ken-ichi Ueda



Sculptor Glenna Goodacre

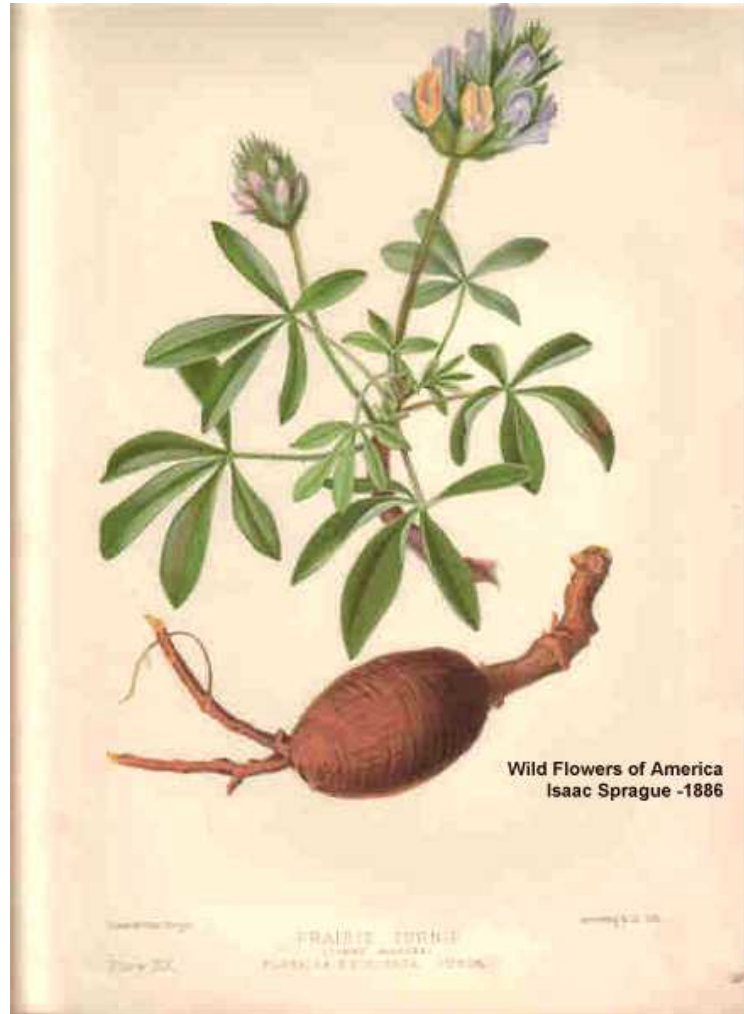
In the fall of 1804, Sacagawea was around seventeen years old, the pregnant second wife of French Canadian trader Toussaint Charbonneau, and living in Awatixa (Metaharta), the middle Hidatsa village on the Knife River, North Dakota



Shoshone Indian Lewis and Clark place in the hearts cans. That her historical Shoshone. Ild have t 1800, have oner ved and ent-ewis e in had wea,

its meaning. I 1805, reads: ' yards in wid [Musselshell] gah-we-ah wo

C Natio Geograph and Wor others, ha The Bure as 1910, spellir trac Inc mo derive sacaga, n woman. wit th th



Pediometelum esculentum (Pursh) Rydb.
tipsin, prairie turnip, breadroot
Photo credit: James R. Sime



© Christopher David Benda

Amphicarpaea bracteata (L.) Fernald
American hog-peanut



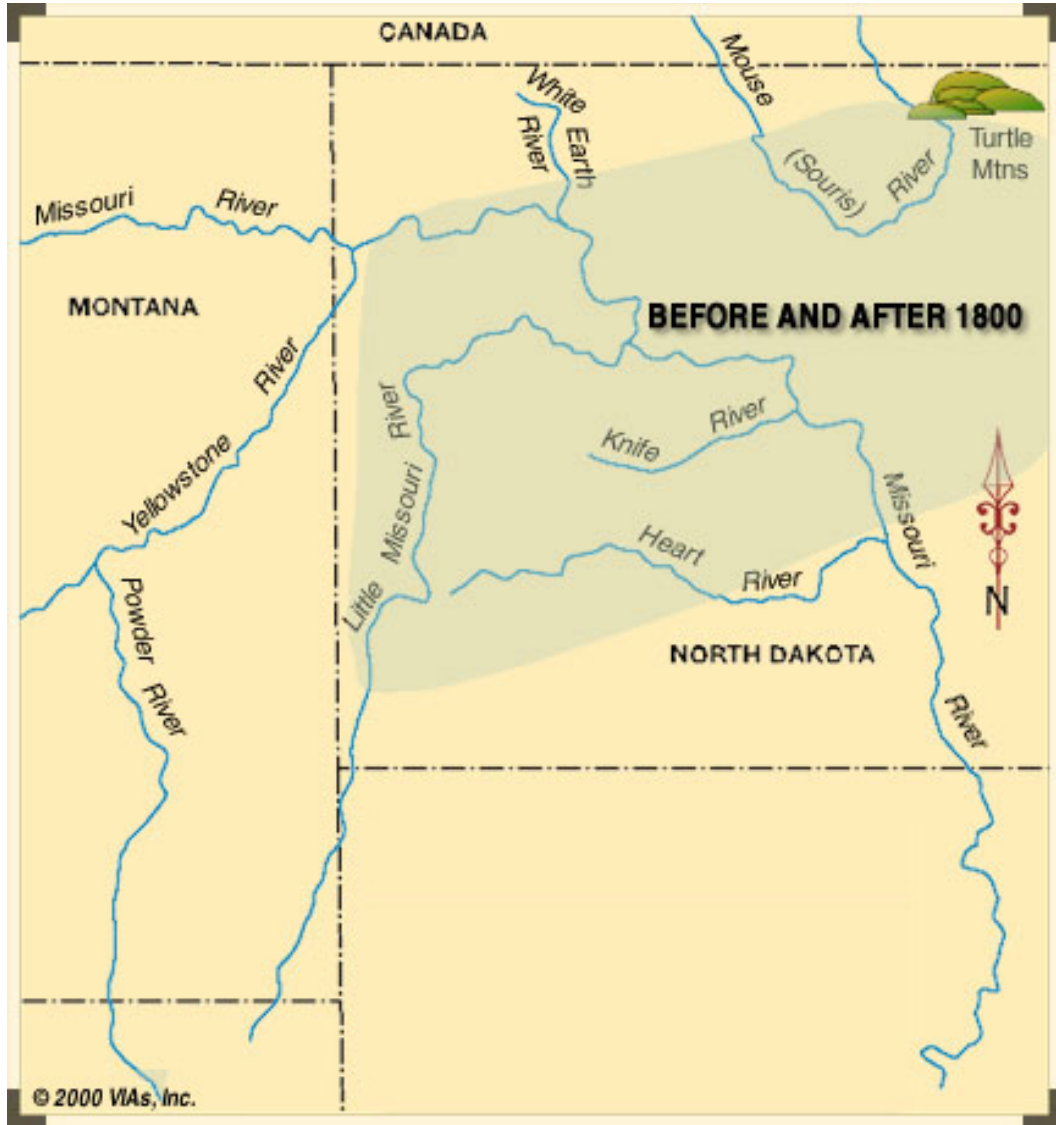
Glycyrrhiza lepidota Nutt. ex Pursh
wild licorice
Photo credit: Stan Shebs



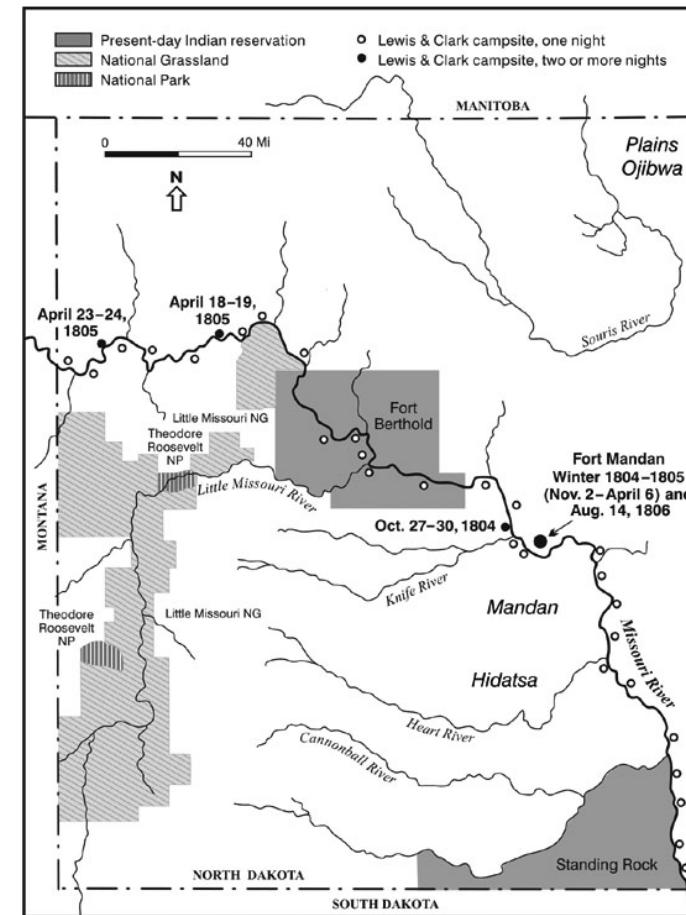
“Great quantities of a kind of berry resembling a Current except double the Size and Grows on a bush like a Privey, and the Size of a Damsen deliciously flavoured & makes delitefull Tarts, this froot is now ripe”
-William Clark

Shepherdia argentea (Pursh) Nutt.
silver buffaloberry
Photo credit: Julia Adamson

Three Affiliated Tribes Mandan-Hidatsa-Arikara



Map of route of Lewis and Clark in North Dakota



<https://lewisandclarkjournals.unl.edu>

FORT BERTHOLD RESERVATION IN 1950

- Family homes
- Townsites
- Land opened to settlement in 1910
- ▨ Taken Lands (Corps of Engineers)
- ▲ April 11 1805 Lewis & Clark campsites (approximate)

The Indian Reorganization Act of 1934 turned federal Indian policies away from the paternalistic objectives of de-culturalization and assimilation. Tribal self-government was facilitated, and the people of Fort Berthold Reservation became a new political entity—the Three Affiliated Tribes of the Fort Berthold Reservation. The revival of traditional cultural values was encouraged. The federal Civilian Conservation Corps improved roads and schools. A bridge was built from Elbowoods to the south side of the Missouri River, and named in honor of two leaders, one a Mandan, the other a Hidatsa, both called Four Bears.

The 1940s brought severe floods on the Missouri, followed by taxpayer demands that the government do something about the problem. The solution was to build a series of dams for flood control, irrigation and power generation. Over the objections of the Three Affiliated Tribes, the Corps of Engineers took 152,300 acres of their land for the reservoir to be impounded by Garrison Dam, thirty miles downstream from the southeast boundary of the Reservation.





Awatixa Village,
Hidatsa, Knife River, ND



Stanton, ND pop. 336



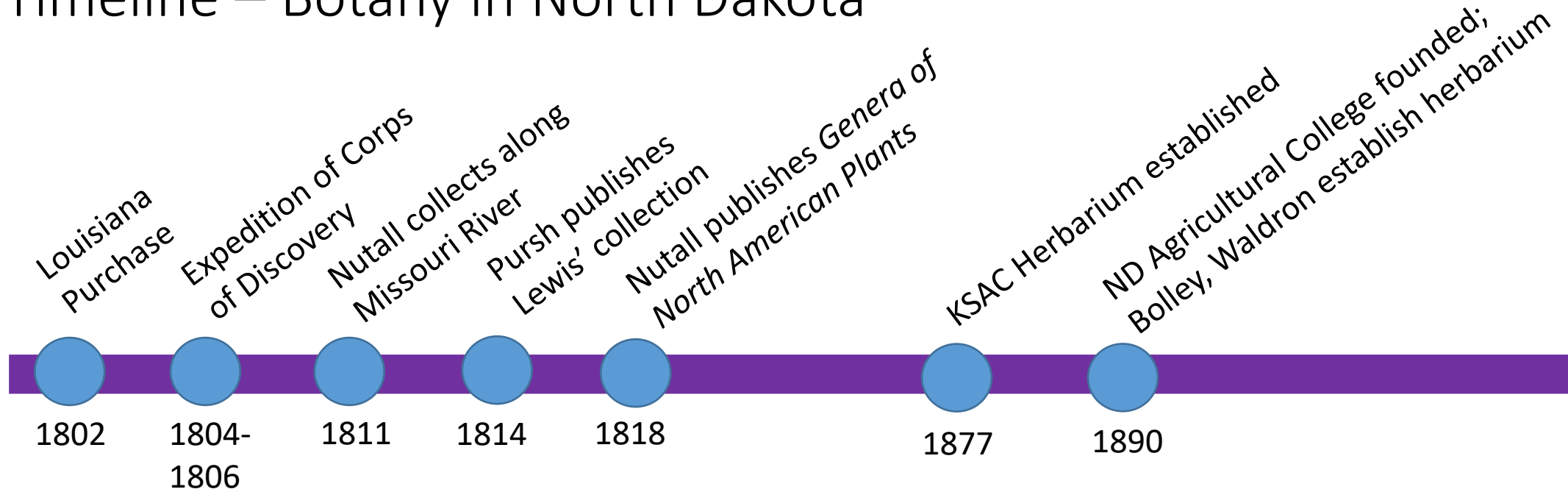
Photo credit: NPS



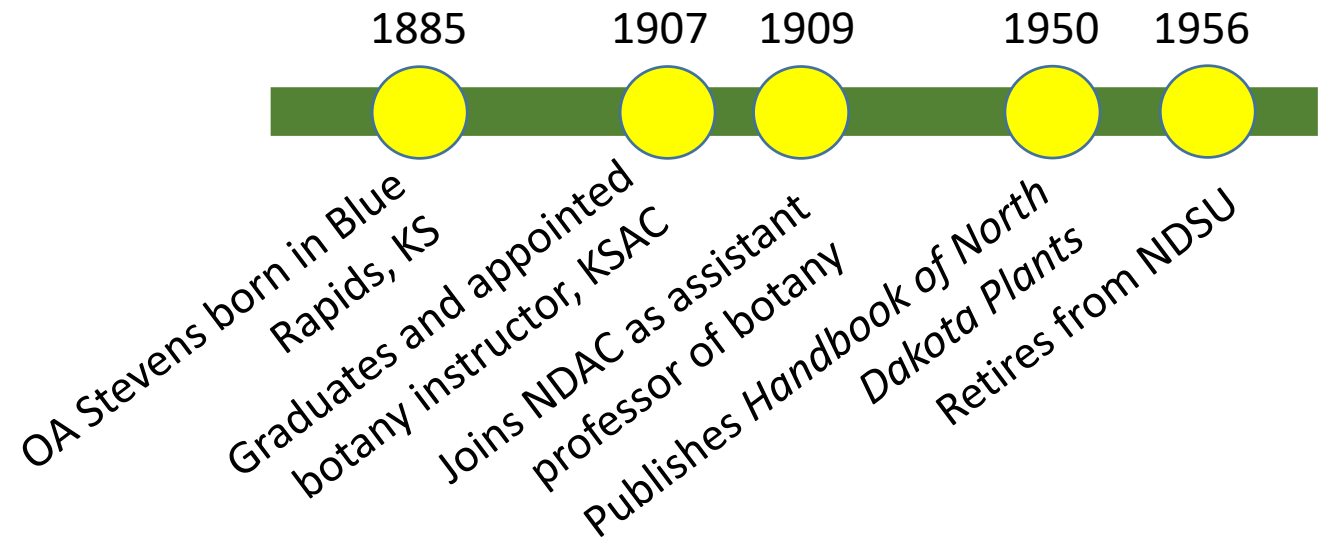
Orin Alva Stevens (1885 – 1979)



Timeline – Botany in North Dakota

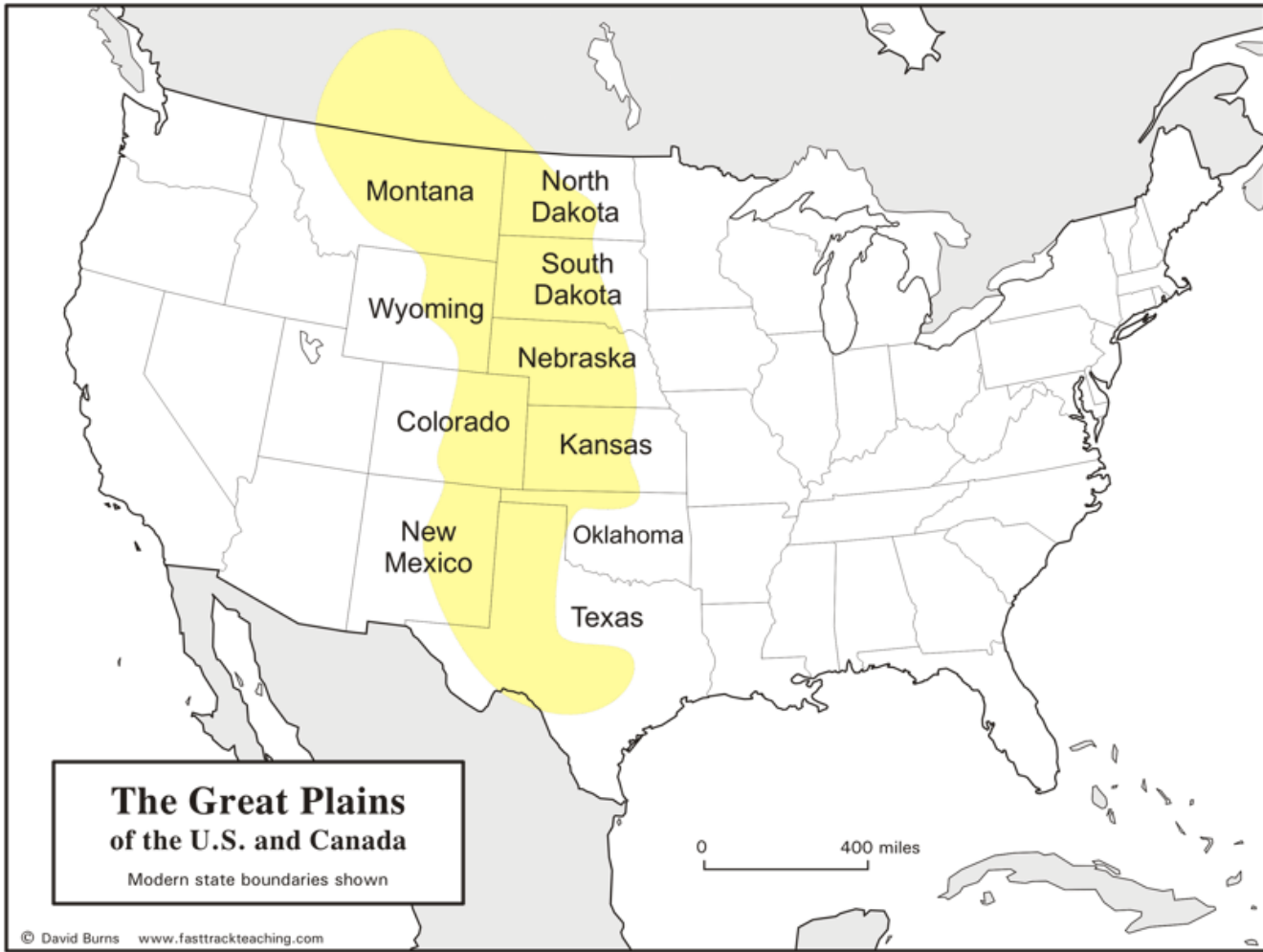


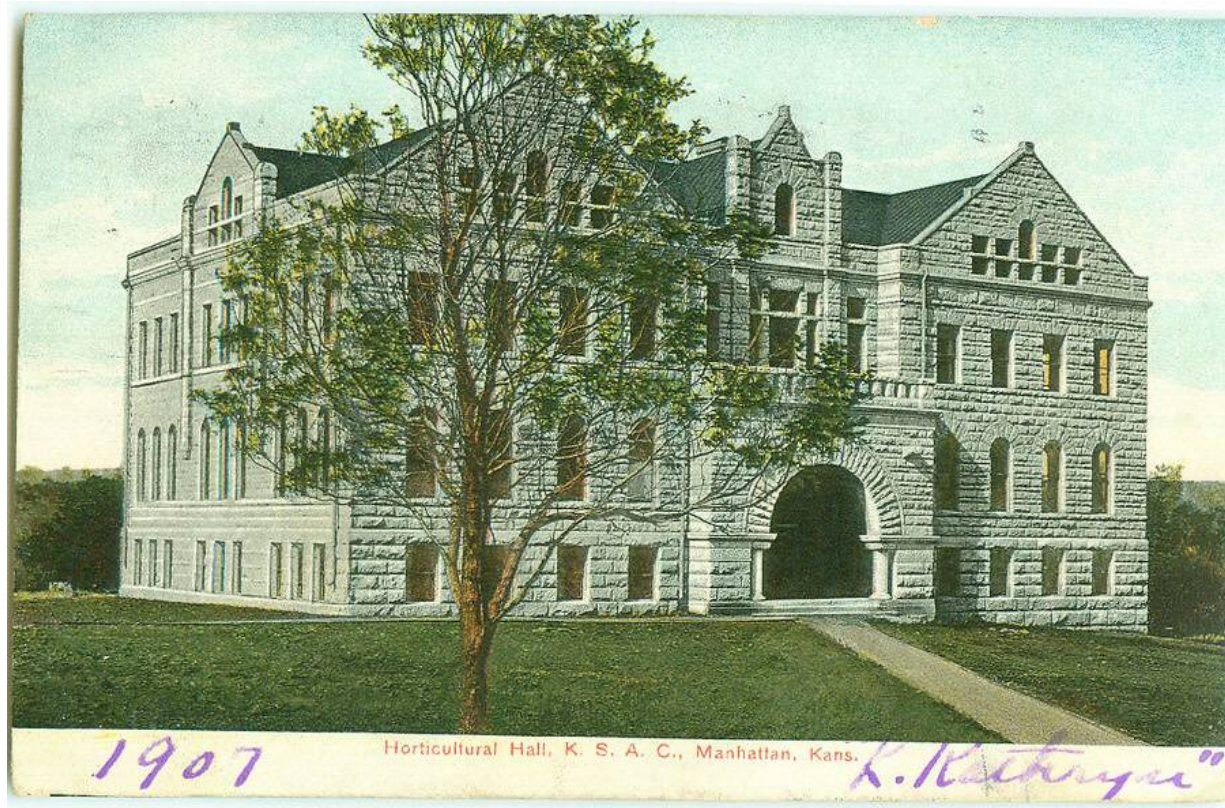
Orin Alva Stevens
(1885 – 1979)





October 17, 1885
Born on a farm near Blue
Rapids, Kansas





Dickens Hall, Kansas State Agricultural College
Manhattan, KS 1907

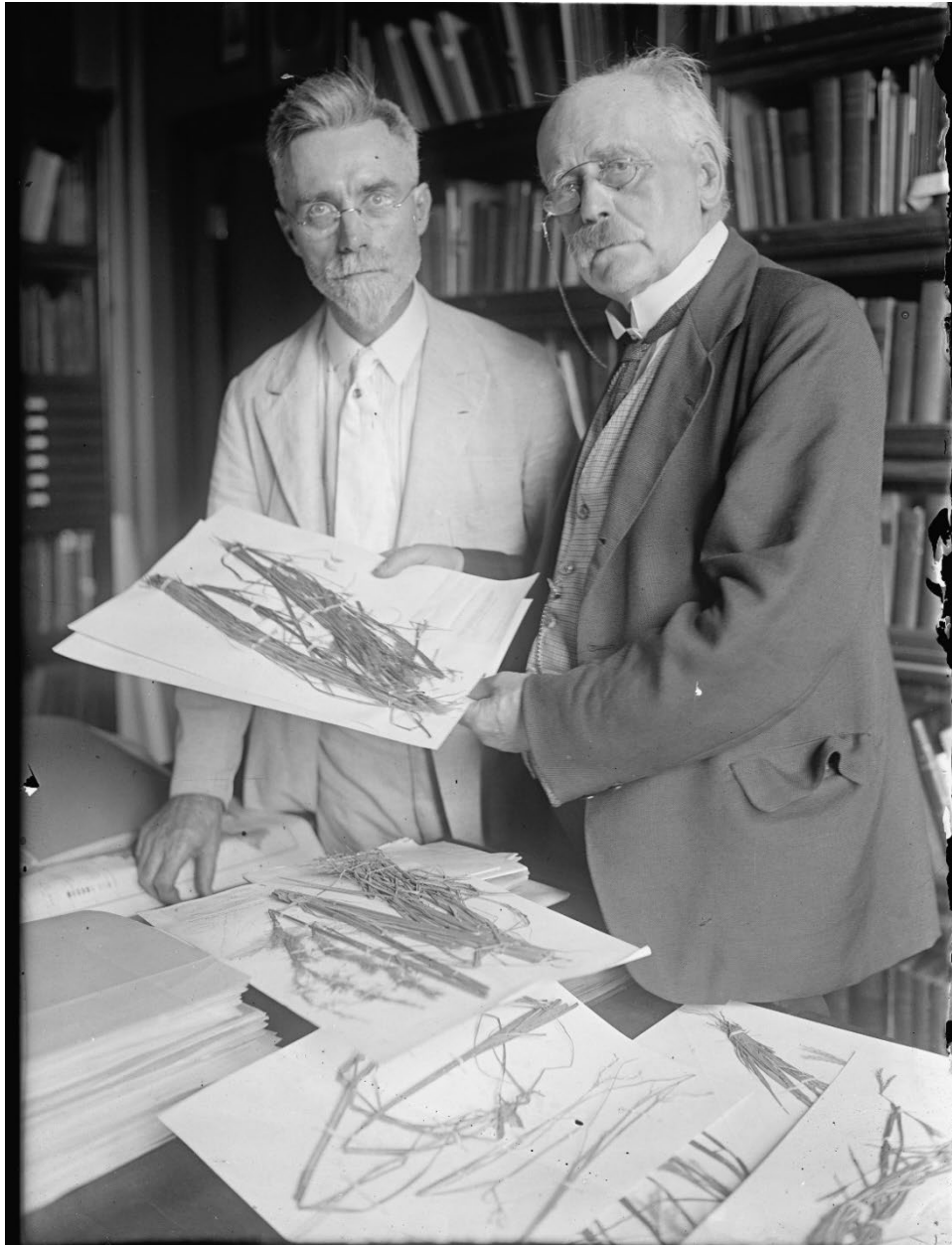


Built 1907

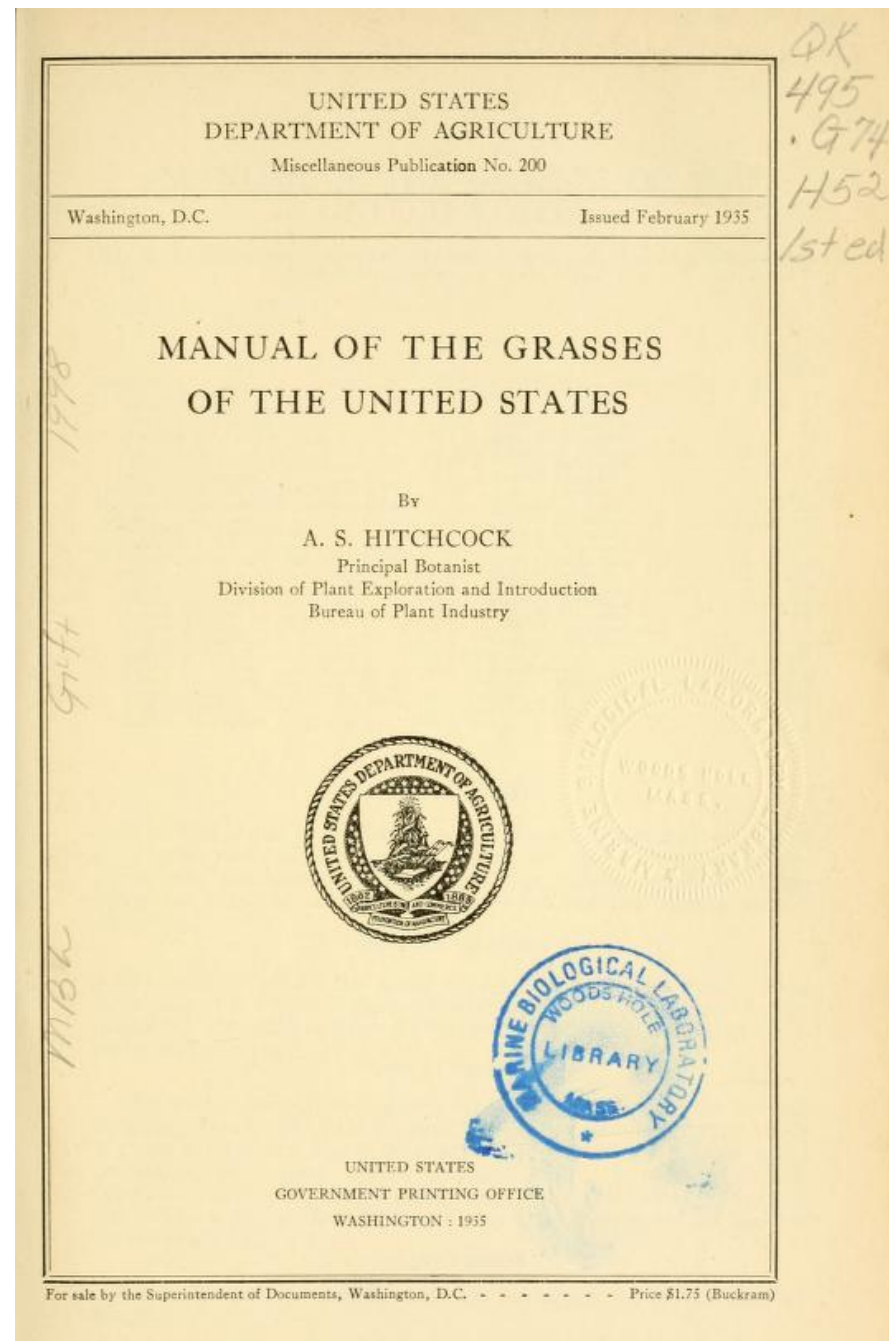


Professor Hitchcock's Botany
laboratory, Dickens Hall. Doorway (at
left) enters the Herbarium (ca. 1895)
Photo credits: KSU Archives

Prof. A.S. Hitchcock, USDA & Dr. Otto Stapf, 1924

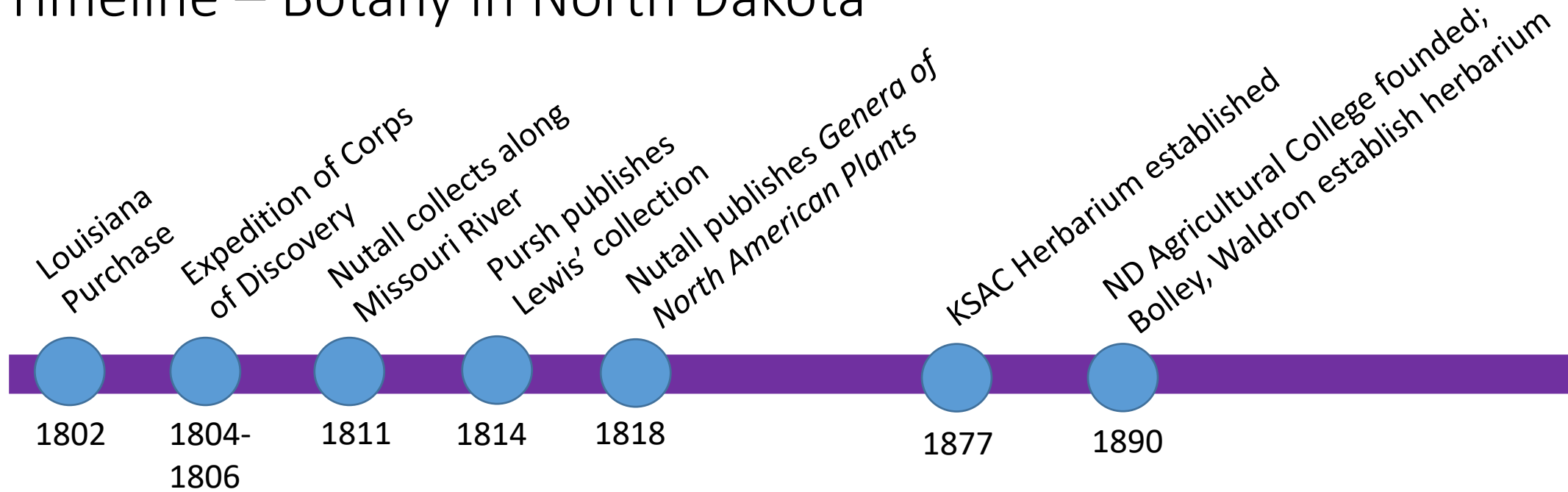


Albert Spear Hitchcock (1865-1935)

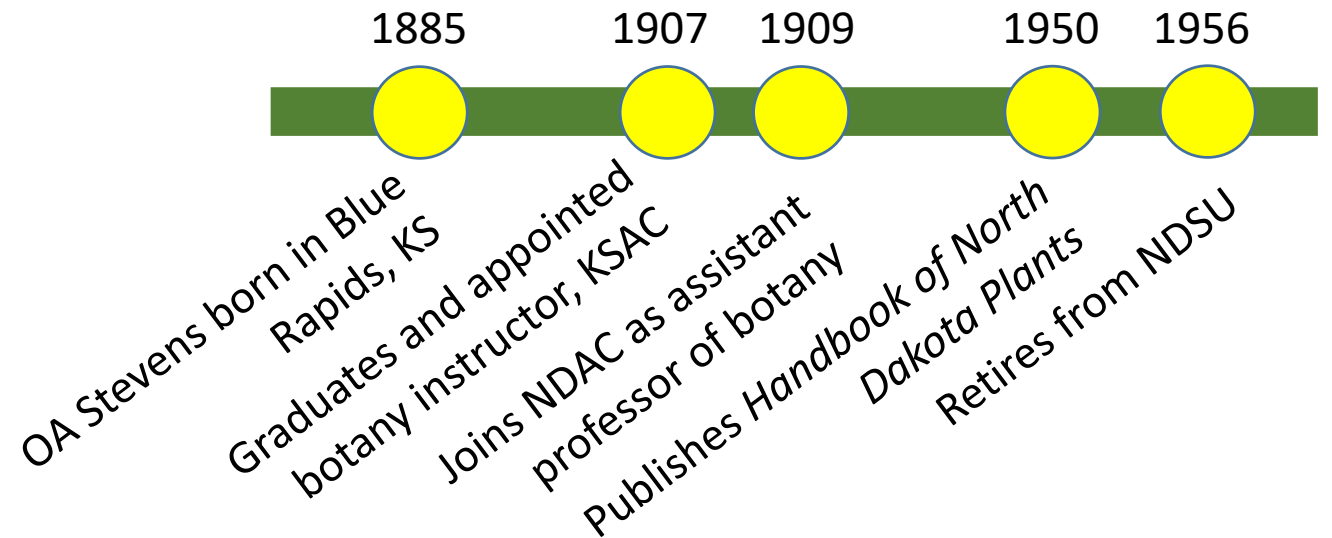


For sale by the Superintendent of Documents, Washington, D.C. - - - - - Price \$1.75 (Buckram)

Timeline – Botany in North Dakota



Orin Alva Stevens
(1885 – 1979)



Lithospermum canescens (Michx.) Lehm.
Hoary puccoon



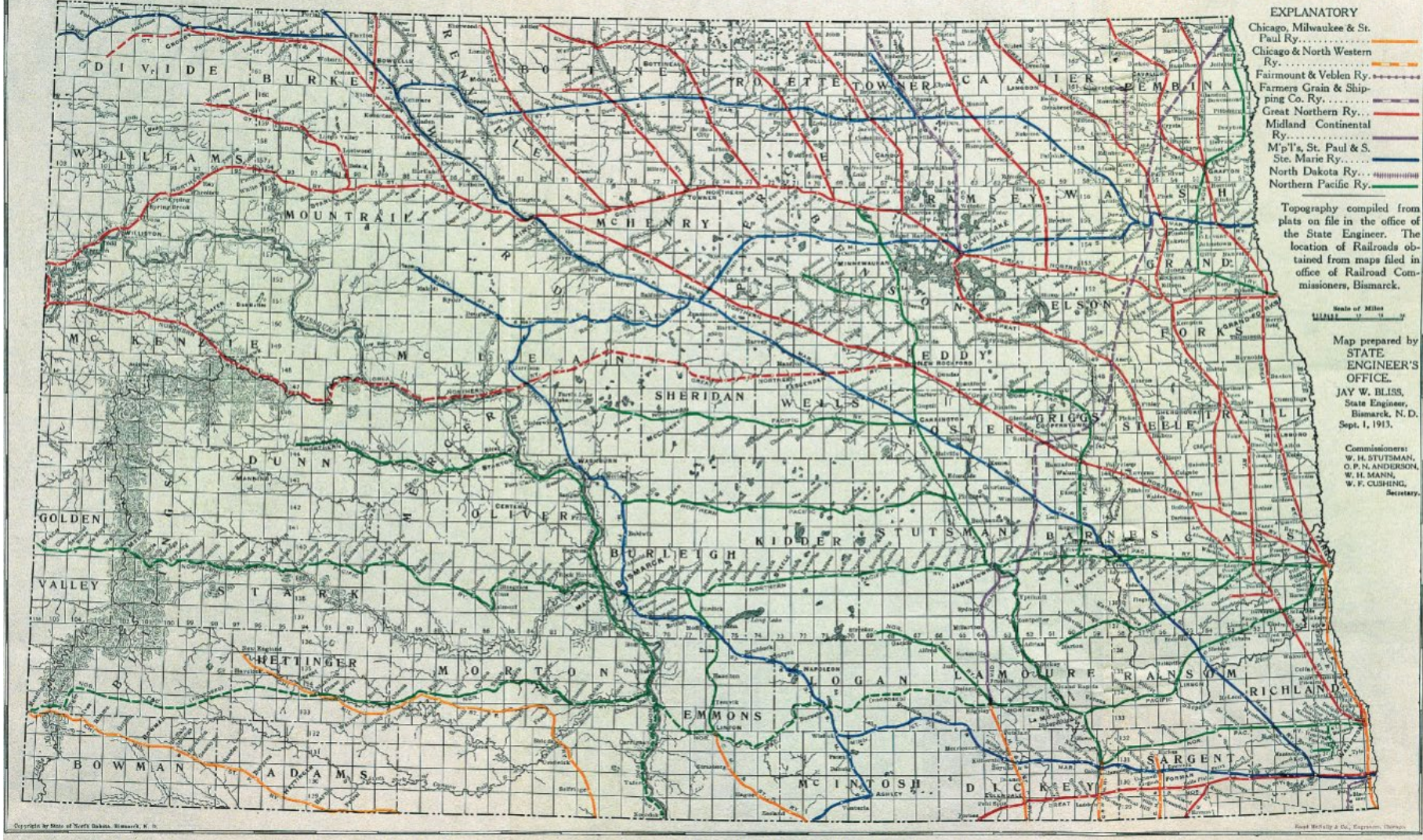
Collector: O. A. Stevens
June 13, 1956



Photo credit: Krista Lundgren

Stevens collected 800-1,000 plants/year for > 50 years

RAILROAD COMMISSIONERS' MAP OF NORTH DAKOTA



“In 1905, the state of North Dakota had more miles of track per resident than any other state in the Union.” ND State Historical Society

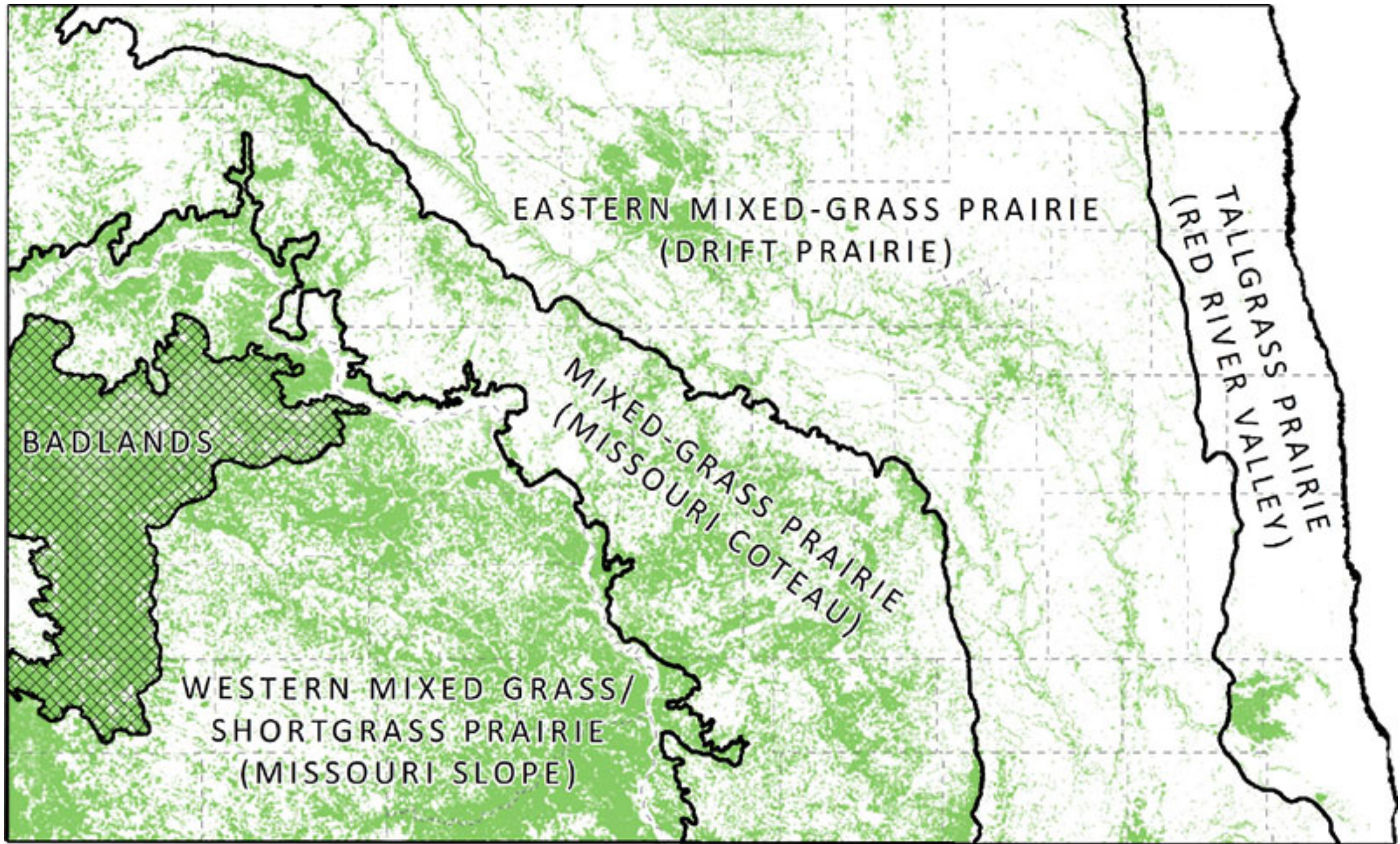
Map (1913): NDSHS



Train at the Great Northern depot, Fargo, N.D. (193?)
Photo credit: David Anderson (1883-1962)



SOO DEPOT 1955
CARRINGTON, N. D.



Map: ND Game and Fish

Pine-Juniper Woodland
Photo credit: ND Game and Fish



Map: ND Game and Fish

Distribution of *Pinus ponderosa* Douglas ex C. Lawson Ponderosa pine

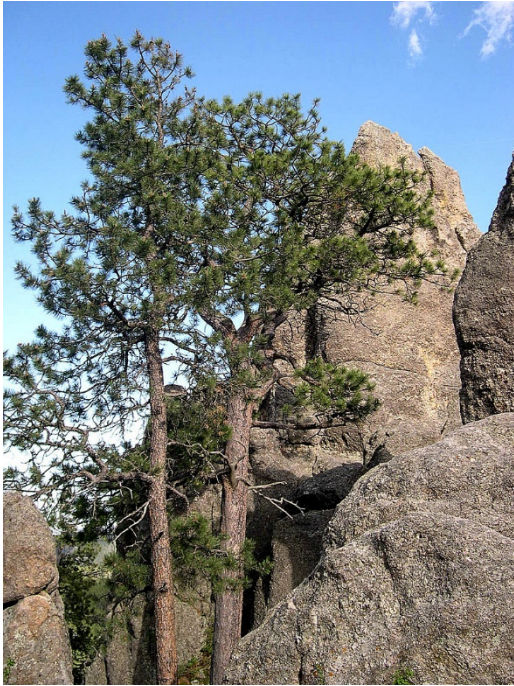


Photo credit: Jason Sturner



Photo credit: ag.ndsu.edu



Little, Elbert L., Jr. 1971. Atlas of United States trees. Map: databasin.org



Little, Elbert L., Jr. 1971. Atlas of United States trees. Map: USGS

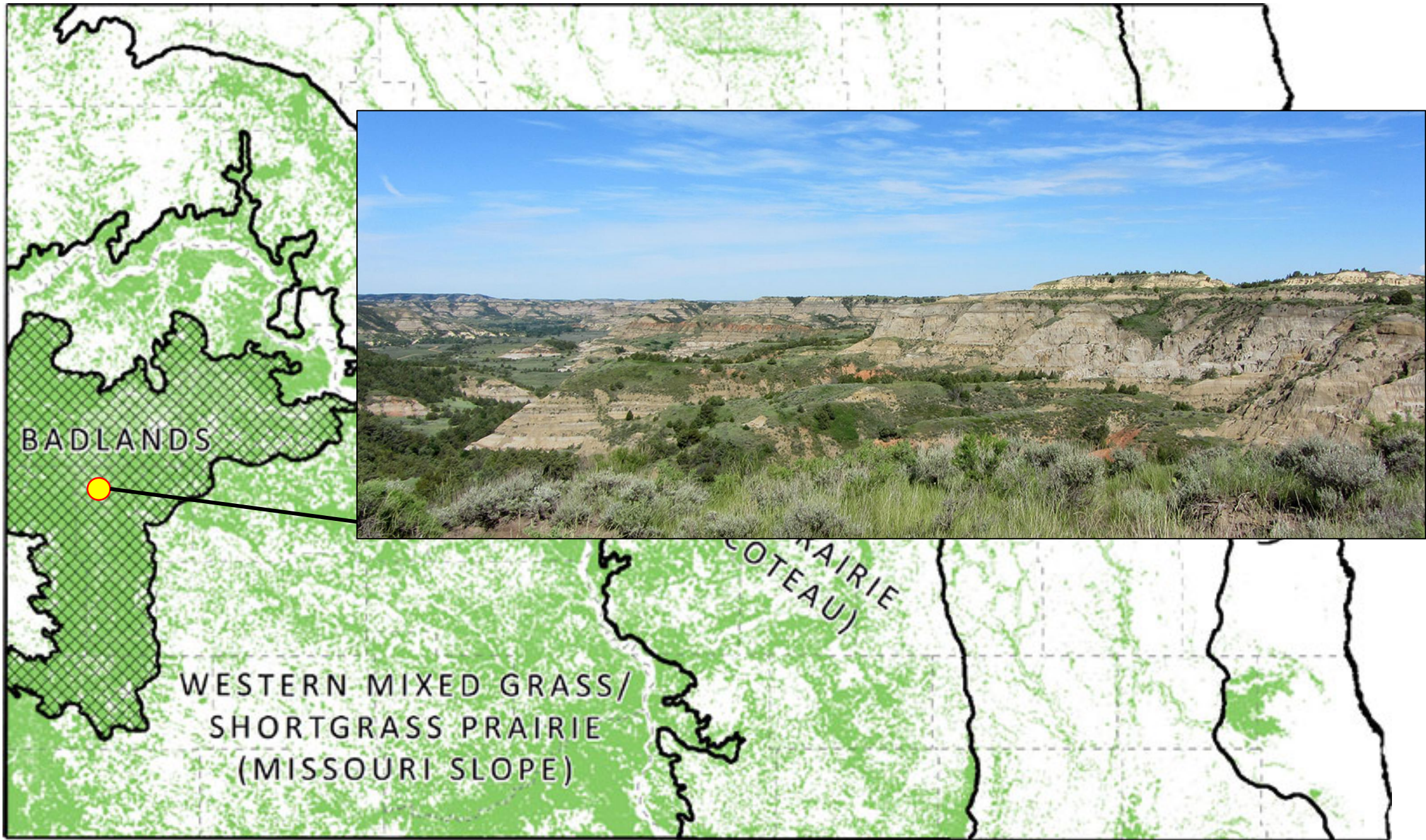
Distribution of *Juniperus scopulorum*,
Rocky Mountain juniper Sarg.



Photo credit: USDA



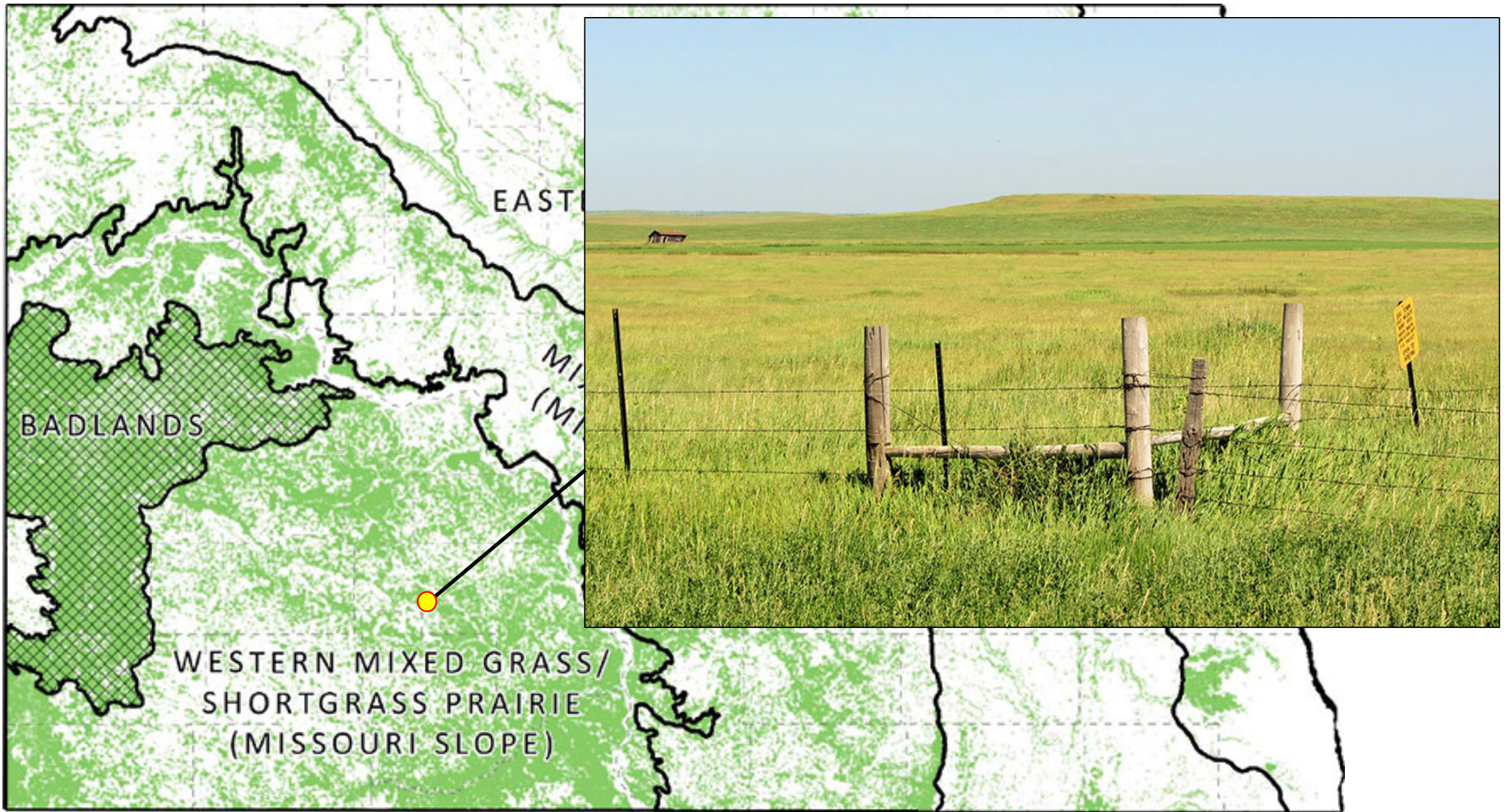
Photo credit: James Reveal



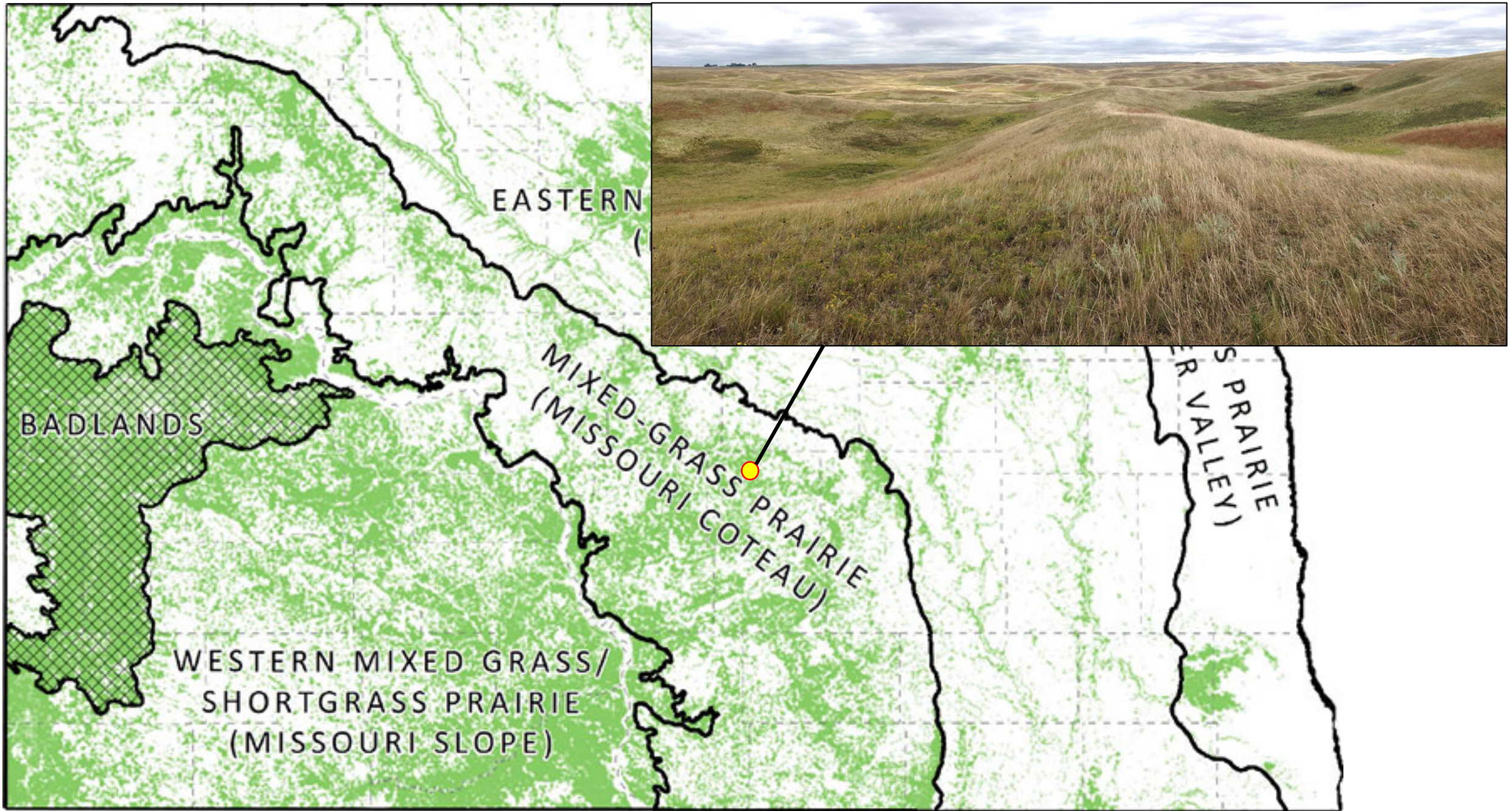
Map and photo credit: ND Game and Fish



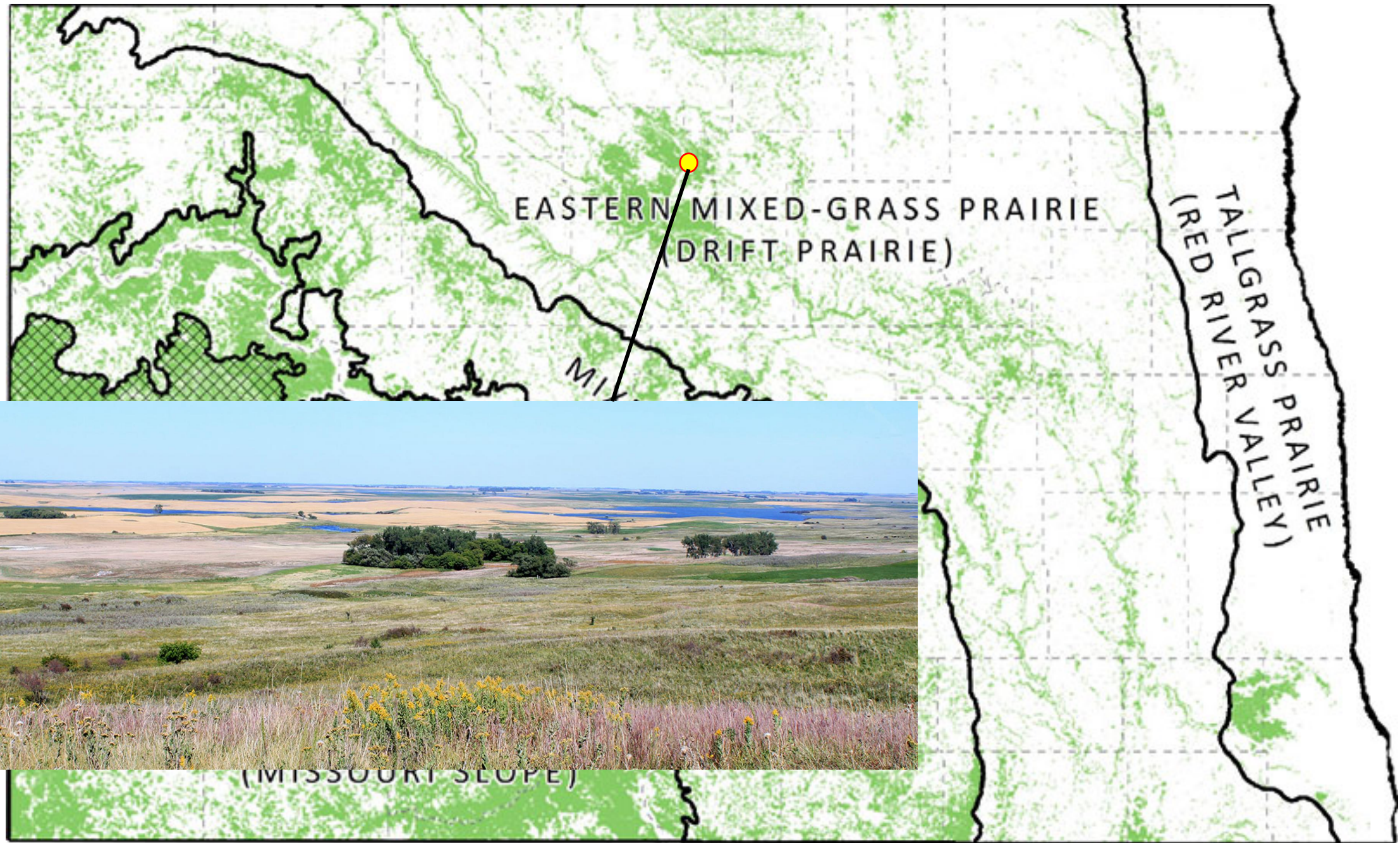
Yucca glauca Nuttall
Soapweed
Photo credit: Matt Lavin



Map: ND Game and Fish



Map: ND Game and Fish



Map and photo credit: ND Game and Fish

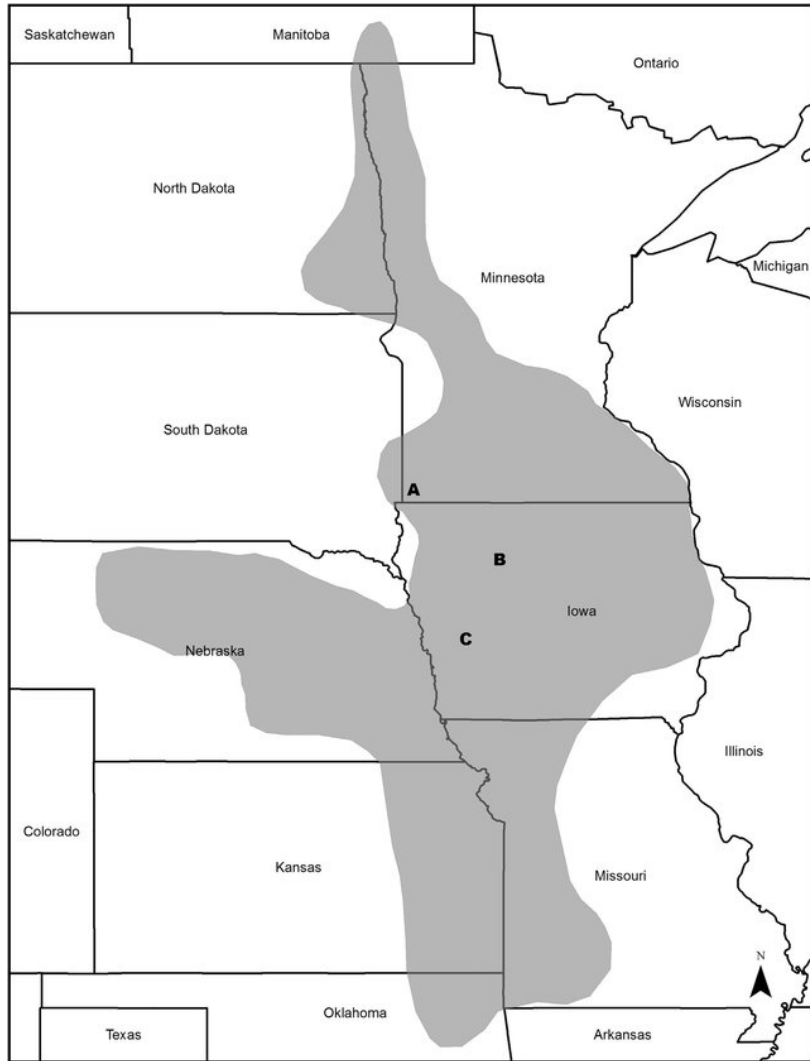
Turtle Mountain, North Dakota



Pembina Escarpment, Tetrault Woods State Forest, ND



Map and photo: ND Game and Fish



Biederman et al (2018)
Current distribution of *Platanthera praeclara* Sheviak & Bowles
Western prairie fringed orchid

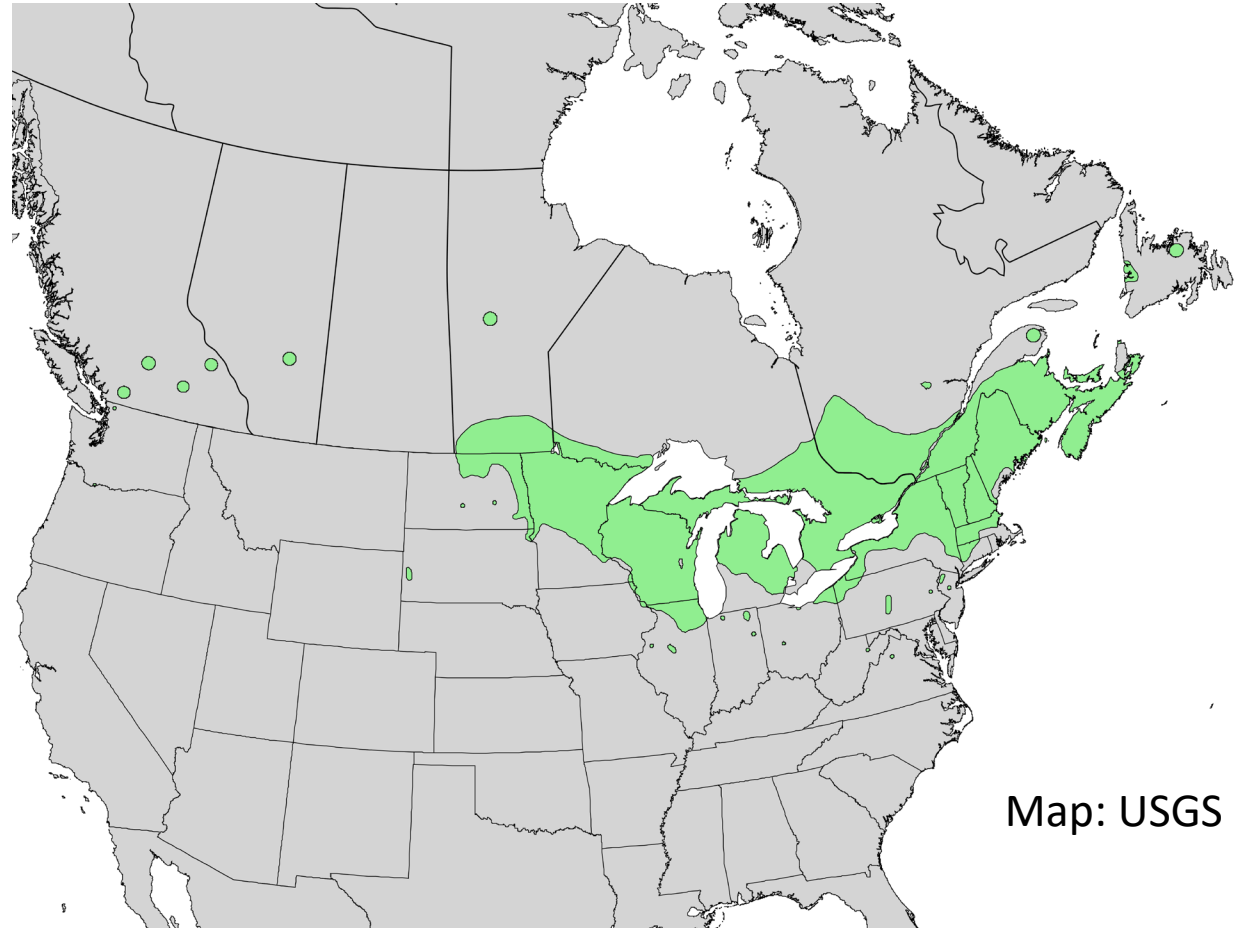


Viburnum trilobum
Marshall
pembina, American
cranberrybush



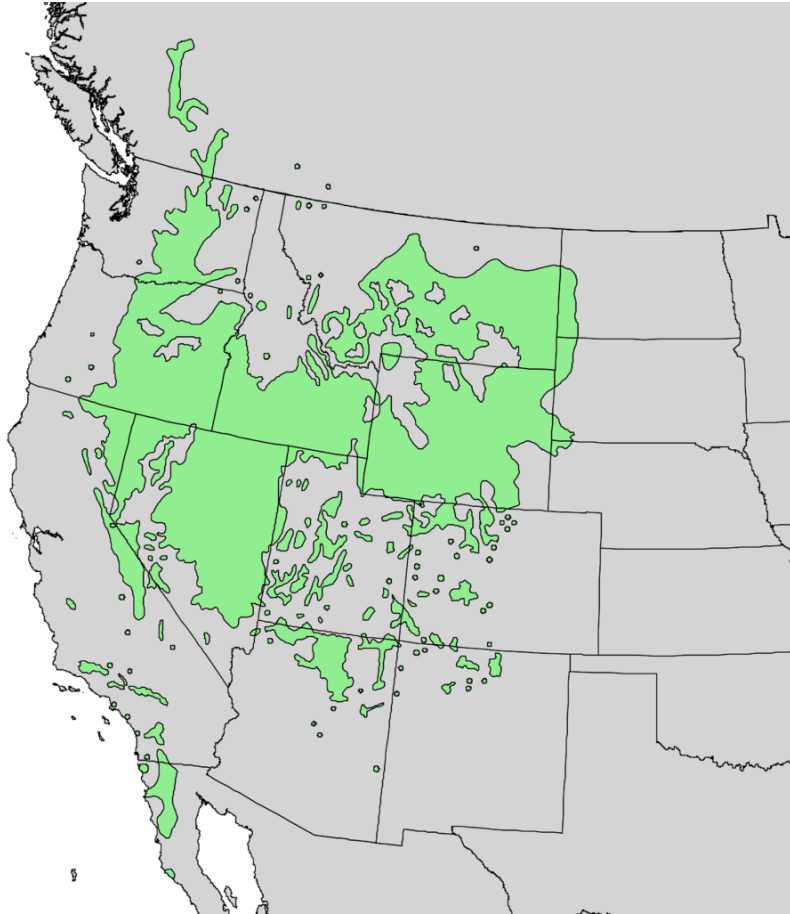
Photo credits: arborday.org

Distribution of highbush cranberry, *Viburnum trilobum* Marshall



Map: USGS

Distribution of *Artemisia tridentata* Nutt., big sagebrush

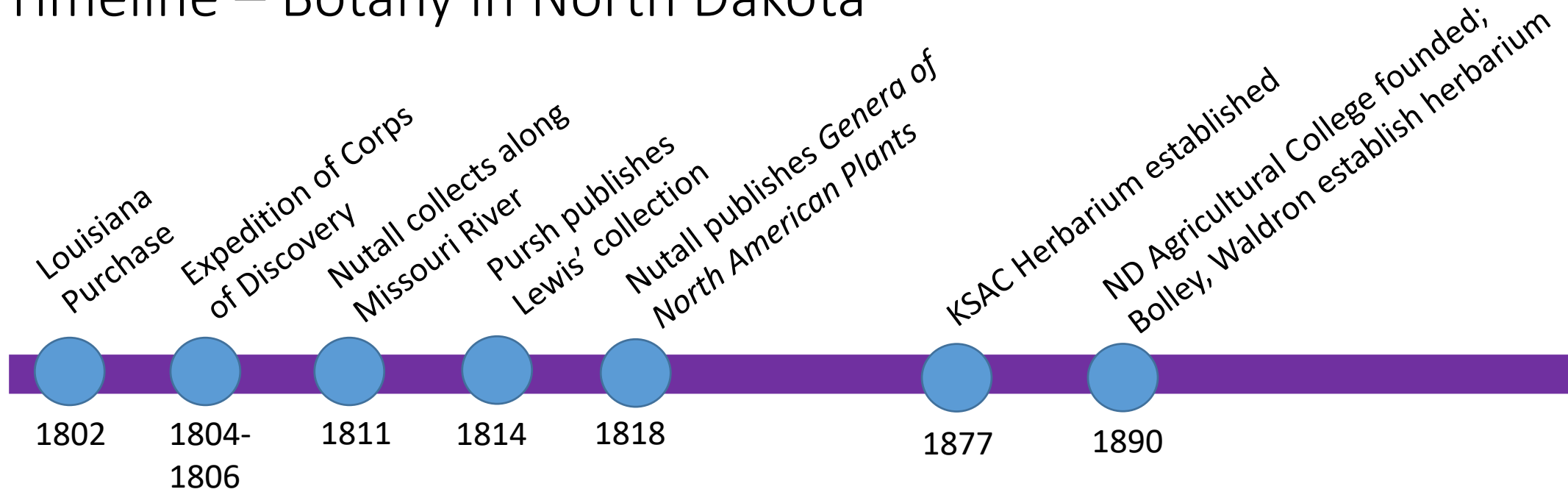


Map: USGS

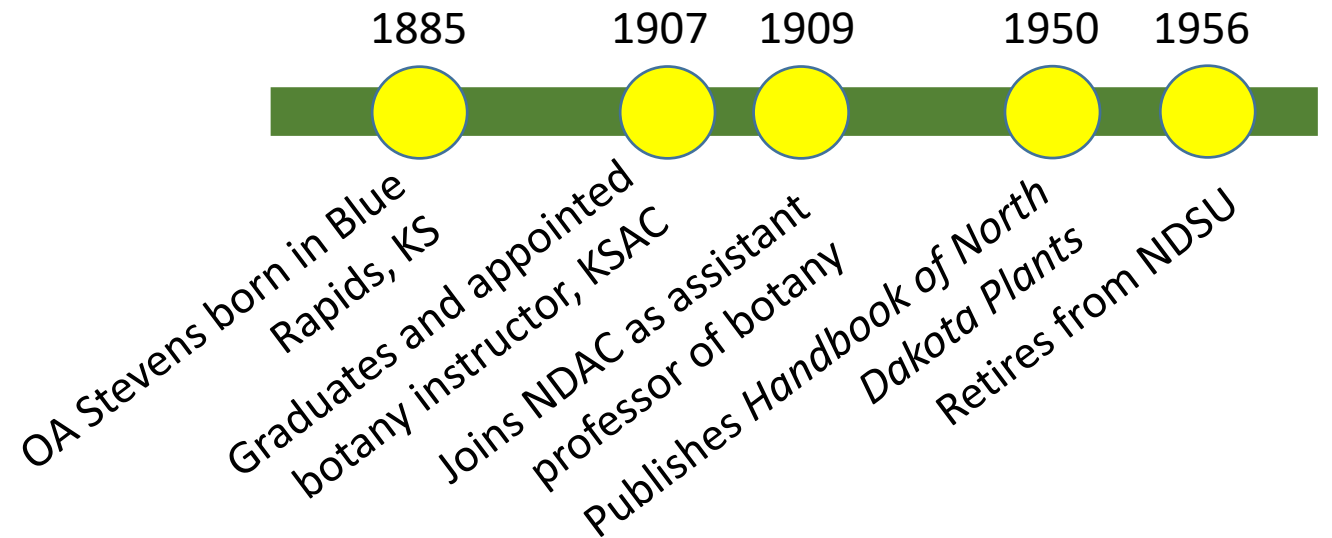


Photo credit: Stan Shebs

Timeline – Botany in North Dakota



Orin Alva Stevens
(1885 – 1979)





Stevens Hall, NDSU, dedicated 1968
Photo credit: NDSU Archives

Chenopodium album L. var. *stevensii* Aellen
Stevens' lambsquarters
Photo credit: Rasbak

Modern-day botanizing in the Badlands of the Little Missouri River, ND



Forestrysuppliers.com



Acknowledgements

- Gunlogson Fund
- NDSU Libraries and Archives
- College of Arts, Humanities and Social Sciences
- Suzzanne Kelley and North Dakota State University Press
- Kendra Greenlee, Chair and Department of Biological Sciences

Sources

- O.A. Stevens (1963), *Handbook of North Dakota Plants*, 3rd printing. North Dakota Institute for Regional Studies, Fargo.
- Lewis & Clark Trail Heritage Foundation (1998-2020), *Discovering Lewis and Clark*, <https://www.lewis-clark.org>
- Kansas State University Herbarium, <https://www.k-state.edu/herbarium/history.html>
- State Historical Society of North Dakota, <https://www.history.nd.gov>
- Elizabeth A. Fenn (2014), *Encounters at the Heart of the World: A History of the Mandan People*. Hill and Wang, New York.
- Wikipedia.org