

2022/23 Prairie/Forestry Learning Objectives & Resources

Updated 12/1/22 - New additions in red

North Dakota Envirothon

Overview

North Dakota is a “Prairie” State. The ND Envirothon Prairie discipline will incorporate a practical "hands-on" approach to the understanding of North Dakota’s forests and rangelands.

Prairie Learning Objectives

Grass Bundle

- Have an understanding of the CPA-33 Clipping worksheet, the Air-Dry % and Growth Curve and the clipping worksheet instructions on the instruction page tab.
- Understand the math used for the calculations
- Know how to clip and use the inventory ring
- Know how to use the clipping shear
- Know how to use the gram scale for grass weight
- [Grass Bundle](#) (XLS, Excel worksheet) on resources page 2018 Current Issue

Plant Identification

- Know the North Dakota State grass and tree
- Have an understanding of and know how to identify grasses and forbs commonly found in ND rangelands
- Know which plants are on the noxious weed list
- Know the difference between native and introduced plants
- What is the difference between a cool and warm season plant
- Understand how plants react to grazing

General Rangeland Understanding

- Understand what can cause rangelands and the plant community to change
- Understand the pros and cons of rangeland improvements
- What is the difference between rangelands and pastureland?

- Know what are stocking rates and how they affect rangeland
- What are Animal Unit Months (AUM's) and how to calculate them
- How is burning a good management tool and what is its historical value

Land Resources

- What are Major Land Resource Areas (MLRA's), how do they differ in ND, and how many are there in ND
- What are ecological sites and how do they affect rangelands

Fire and Grassland/Rangeland Ecology

- Have a general understanding of the history of fire and grazing on prairies in ND •
- How does fire impact grassland ecosystems in the state?

General Forestry Understanding

- Have a basic understanding of Direct Breast Height (DBH) and Basal Area (BA) •
- Have a good understanding of general forestry management practices • Know the benefits that native forests provide in ND
- Understand the benefits of prescribed burning in ND forests

General Tree Knowledge

- Know the ND State Tree
- Have a general knowledge of trees suitable to ND and how to identify them

Windbreak Knowledge

- Know the CPA-4; the windbreak design worksheet,
- Know how to use a measuring wheel
- The math involved
- Windbreak design and purpose
- Have an understanding of the general requirements of windbreak design, i.e. planned length, between row spacing, in row spacing, number of trees planted

Prairie Resources

Resources: (free on web)

https://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/nd/home/?cid=nrcs141p2_00164

3 Range Judging Handbook for North Dakota, NDSU Extension

North Dakota Noxious and Troublesome Weeds, NDSU Extension

North Dakota Forestry Best Management Practices, NDFS

Trees & Shrubs of ND, NDSU Extension

Taking Forest Measurements, NDFS Field Guide

How Windbreaks Work, Nebraska Extension

Windbreaks for Rural Living, Nebraska Extension

Noxious Weeds of North Dakota. <https://www.nd.gov/ndda/plant-industries/noxious-weeds>

National Range and Pasture Handbook. USDA Natural Resources Conservation Service

<http://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=17734.wba>

USDA Natural Resources Conservation Service website on Range and Pasture

<http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/landuse/rangepasture/>

Range Judging Handbook for North Dakota. NDSU Extension, FFA, and 4-H.

<http://www.ndsu.edu/fileadmin/4h/Contests/DDB628.pdf>

USDA Plants Database

<http://plants.usda.gov/java/>

Rangeland and Pastureland Land Use

https://www.google.com/url?q=https://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/nd/technical/landuse/pasture/?cid%3Dnrcs141p2_001643&source=gmail&ust=1604094450525000&usg=AFQjCNE36-d3H3NLOgROc9By25TqMmrSNw

NDSU Extension Publications (free on the web)

Integrated Management of Leafy Spurge – Rod Lym.

<http://www.ag.ndsu.edu/pubs/plantsci/weeds/w866.pdf>

Emerald Ash Borer: Biology and Integrated Pest Management in ND.

<http://www.ag.ndsu.edu/pubs/plantsci/pests/e1634.pdf>

Determining Grazing Readiness for Native and Tame Pastures – Kevin Sedivec.

<http://www.ag.ndsu.edu/pubs/plantsci/hay/r1061.pdf>

Bringing Land in the Conservation Reserve Program Back into Crop Production or Grazing.

<http://www.ag.ndsu.edu/pubs/plantsci/crops/a1364.pdf>

Grass Varieties for North Dakota. <http://www.ag.ndsu.edu/pubs/plantsci/hay/r794.pdf>

Grass Varieties for the Northern Plains (volume 1).

<http://www.ag.ndsu.edu/pubs/ansci/range/r1323.pdf> and Volume 2

<http://www.ag.ndsu.edu/pubs/ansci/range/r1390.pdf>

Riparian Ecosystems of North Dakota. <http://www.ag.ndsu.edu/pubs/ansci/range/r1539.pdf>

Grazing Riparian Ecosystems: Grazing systems.

<http://www.ag.ndsu.edu/pubs/ansci/range/r1540.pdf>

Grazing Riparian Ecosystems: Grazing Intensity.

<http://www.ag.ndsu.edu/pubs/ansci/range/r1541.pdf>

Grazing Riparian Ecosystems: Season of Use.

<http://www.ag.ndsu.edu/pubs/ansci/range/r1542.pdf>

Grazing Riparian Ecosystems: Water Developments.

<http://www.ag.ndsu.edu/pubs/ansci/range/r1543.pdf>

Ecological Sites of North Dakota. <http://www.ag.ndsu.edu/pubs/ansci/range/r1556.pdf>

Perennial and Biennial Thistle Control. <http://www.ag.ndsu.edu/pubs/plantsci/weeds/w799.pdf>

Leafy Spurge Identification and Chemical Control.

<http://www.ag.ndsu.edu/pubs/plantsci/weeds/w765.pdf>

[Dams were already killing off North Dakota's cottonwood trees. Climate change could hasten their decline \(thedickinsonpress.com\)](http://thedickinsonpress.com)

[Challenges of Growing Trees in North Dakota - YouTube](#)

[The Surprising Truth Behind Planting Trees and Climate Change - YouTube](#)

Other useful resources which are not free:

Grassland Plants of South Dakota and the Northern Great Plains. SDSU College of Agriculture and Biological Sciences and South Dakota Agricultural Experiment Station. ISBN: 978-0-9797182-1-2

Weeds of the West by Burrill, Dewey, Cudney, Nelson, and Whitson. ISBN: 978-0941570138