

Plant Growth, Development, and Morphology

Jerry D. Volesky

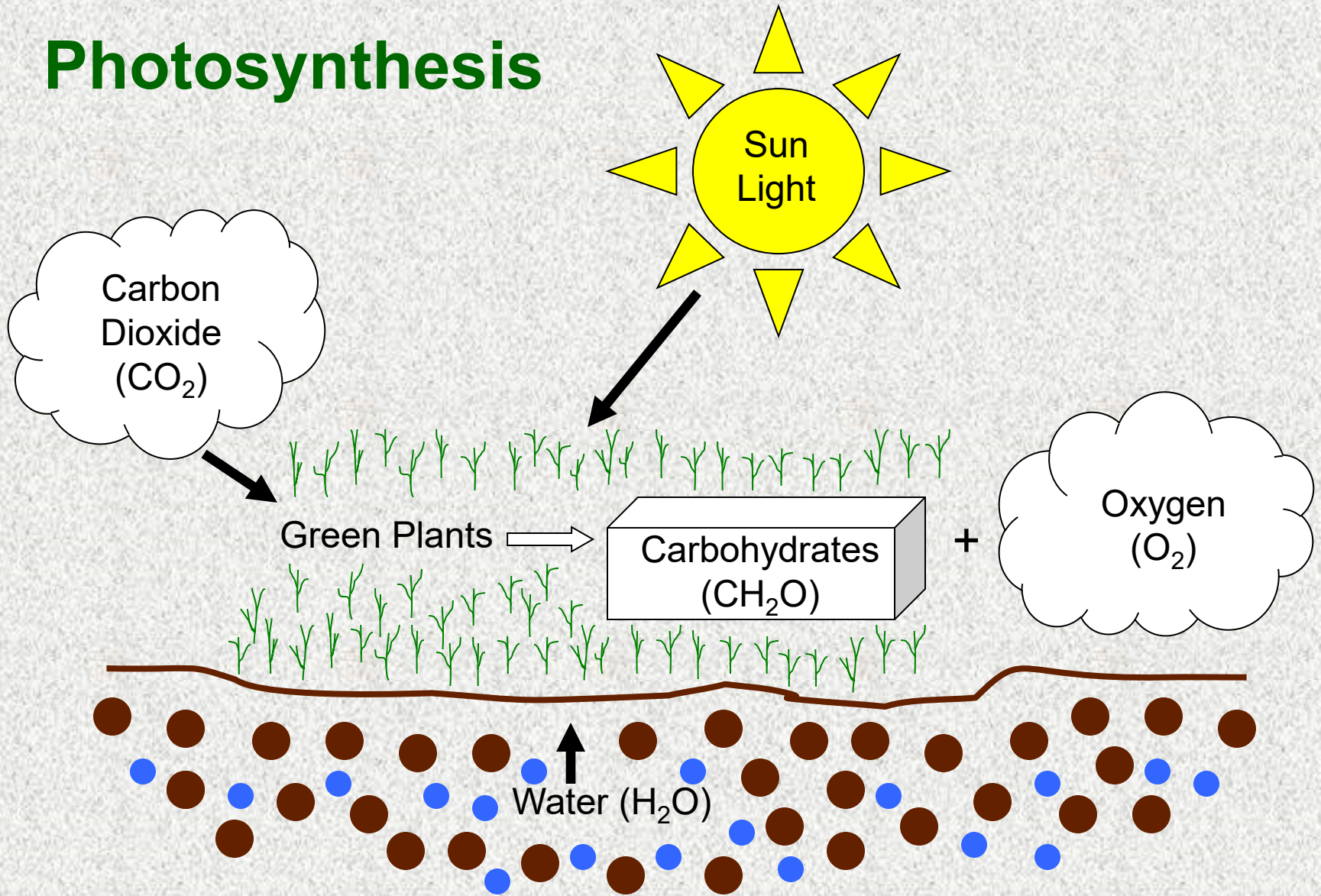
Troy Walz

Jess Milby

N EXTENSION

Ranch Practicum - - 2023

Photosynthesis



Plant Types

1. Grasses

- jointed stems (nodes)
- leaves in 2 rows on stem
- veins in leaves are parallel



Plants Types

2. Grass-like plants

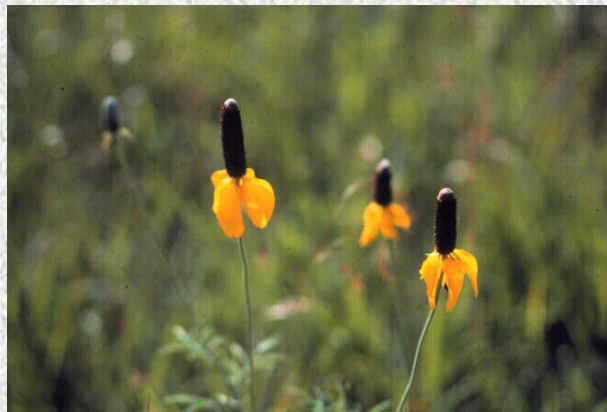
- sedges and rushes
- solid stems, no nodes
- sedges have triangular stems
- rushes have round stems



Plants Types

3. Forbs

- **Broadleaf herbaceous plants, (wildflowers, weeds)**
- **leaves have net-like veins**
- **leaves have various shapes**



Plants Types

4. Shrubs

- Persistent woody stems that remain alive from year to year



Plants Types

5. Cactus

- **Fleshy succulent pads rather than stems, usually armed with spines**



Plant Origin

1. Native

- Part of the original vegetation of N.A.
- Ex.: Switchgrass, little bluestem, indianguass, western wheatgrass

2. Introduced (= exotic)

- Brought in from outside N.A.
 - Ex.: Smooth bromegrass, Kentucky bluegrass, musk thistle
-

Plant Life Span

1. Annual

- Downy brome, crabgrass, sandbur, horseweed, lambsquarters

2. Biennial

- Musk thistle, sweet clover

3. Perennial

- Switchgrass, smooth brome grass, orchardgrass
-

- **Weed**

- A plant that is not valued where it is growing. Often vigorous and tends to out-compete desirable plants.



- **Native**

- **Exotic (= introduced)**

- Origin is from outside North America.

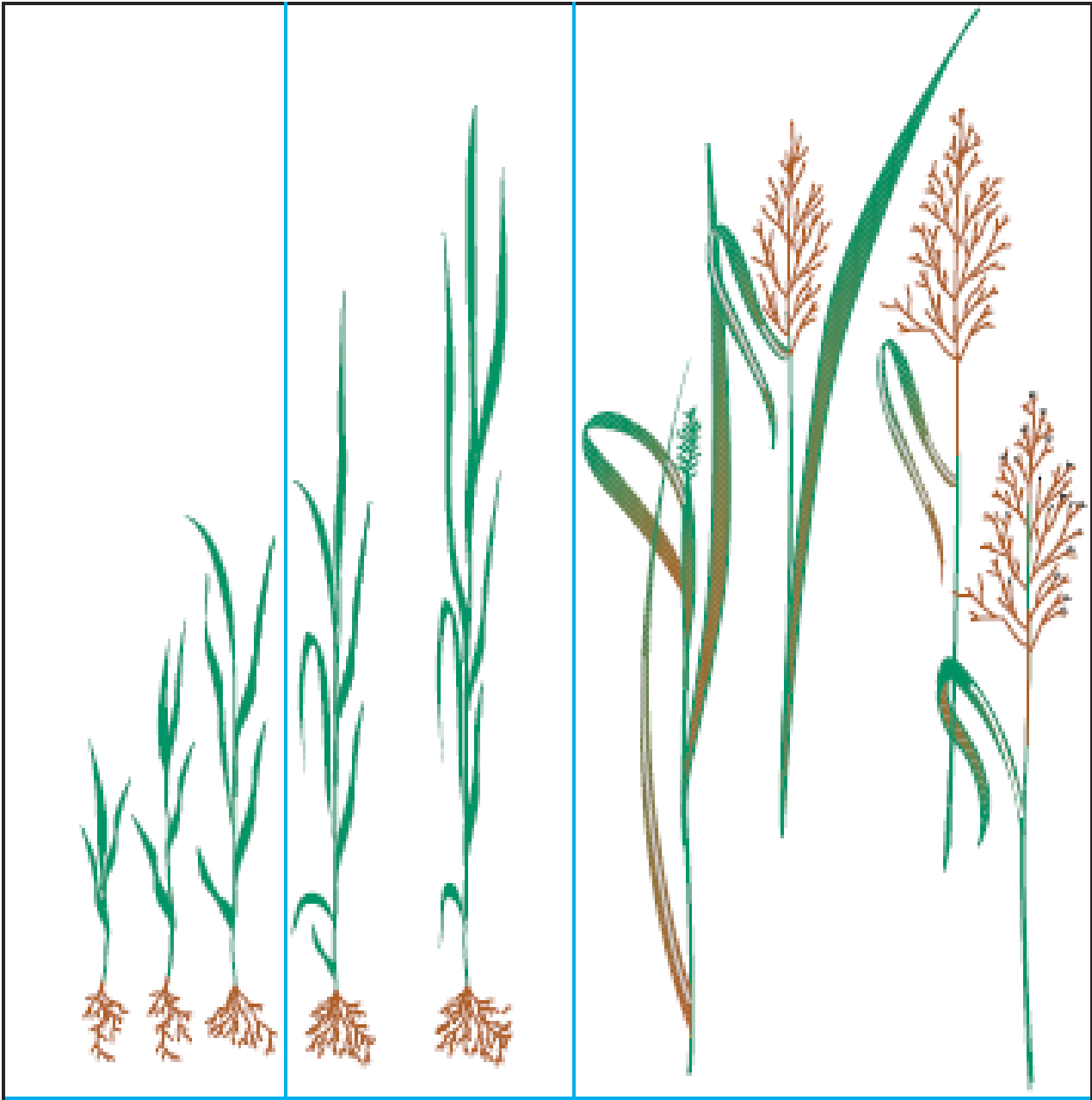
- **Invasive species**

- Highly aggressive and competitive.

- **Noxious**

- State / county classification requiring control.
-



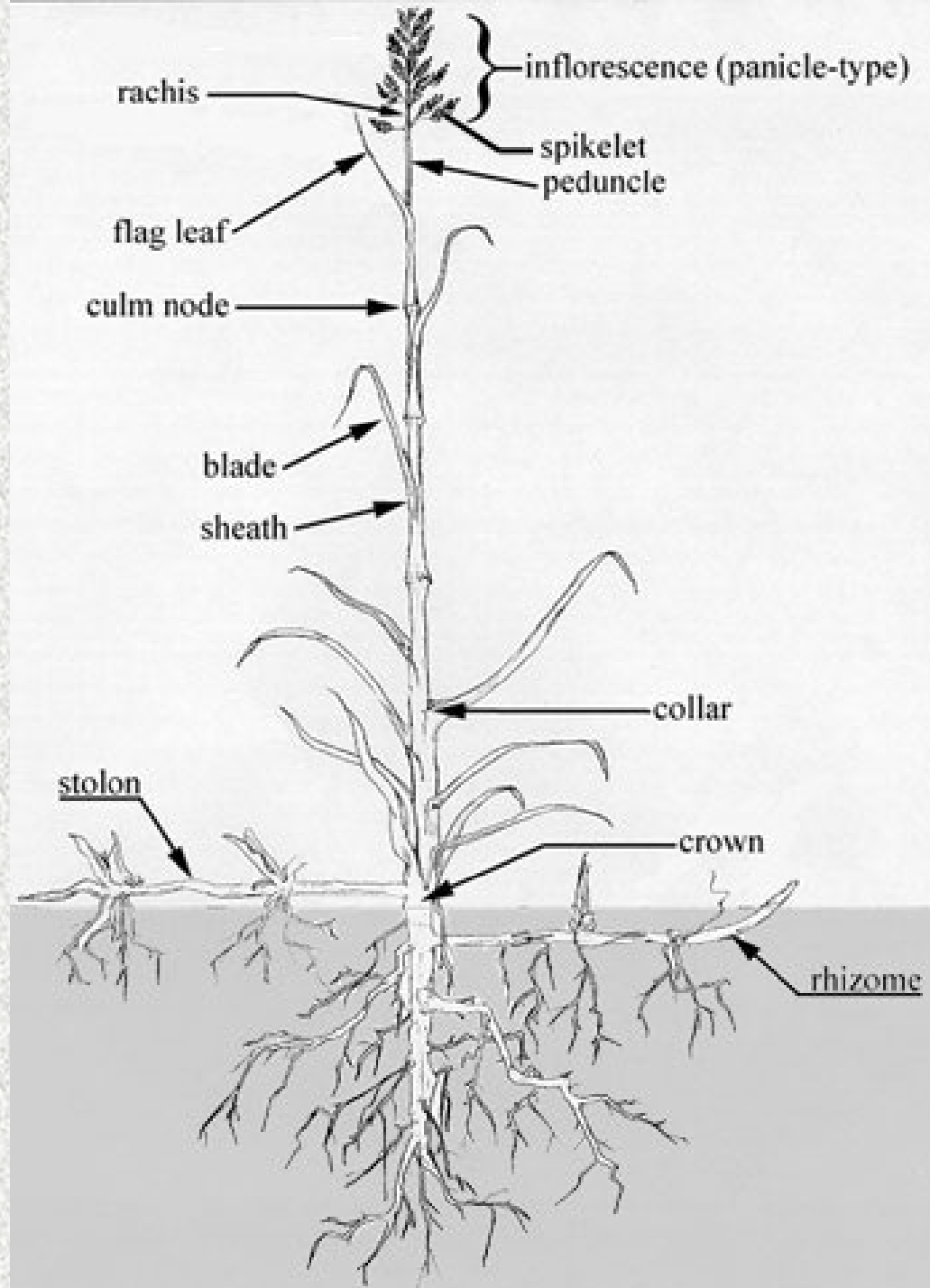


VEGETATIVE

ELONGATION

REPRODUCTIVE

Grass Tiller

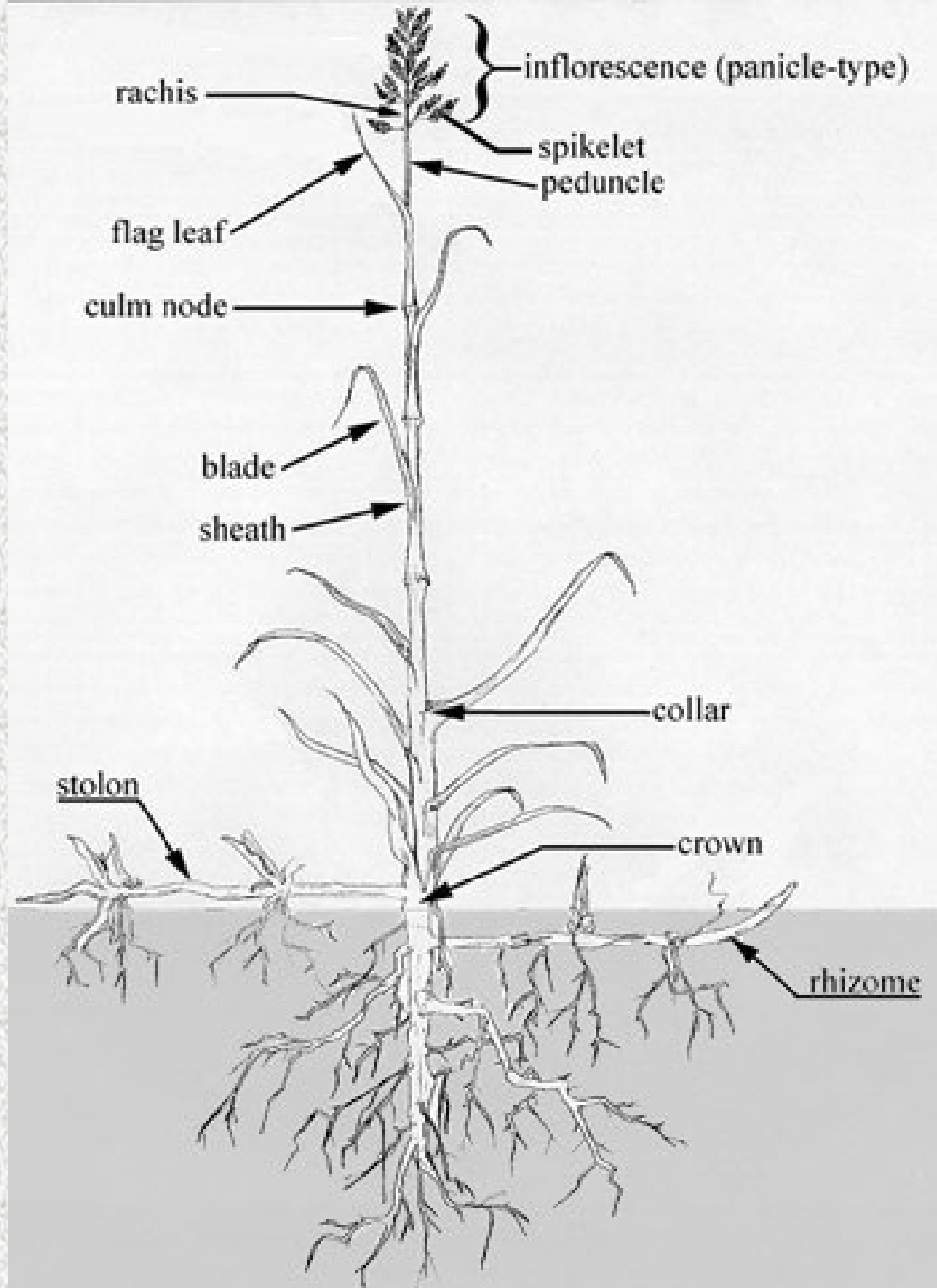


**Little
Bluestem
(bunchgrass)**



A photograph of Western Wheatgrass (sod-former) growing in a field. The grass is green and has a dense, sod-forming habit. The text "Western Wheatgrass (sod-former)" is overlaid in white on the right side of the image.

**Western
Wheatgrass
(sod-former)**



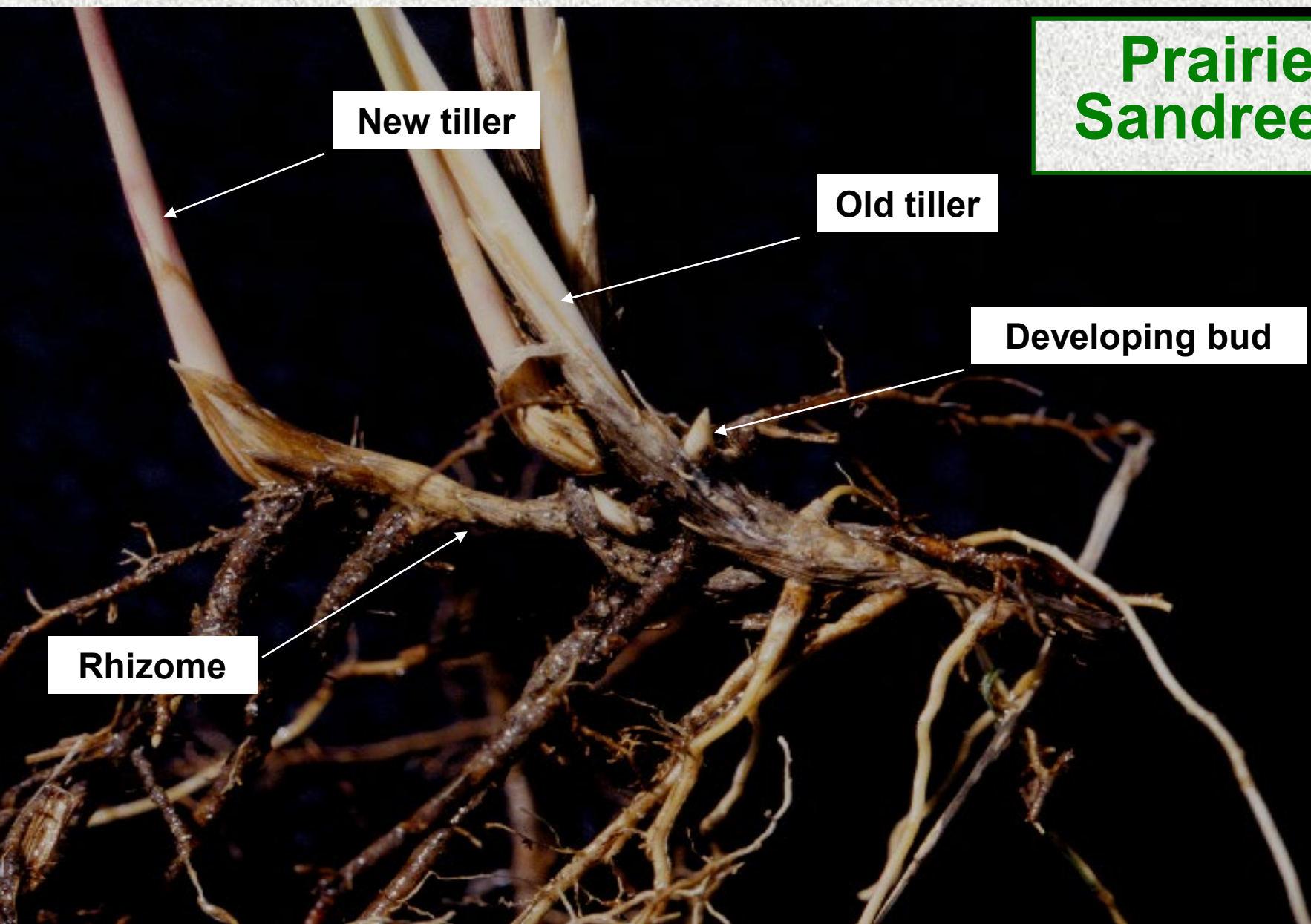
Prairie Sandreed

New tiller

Old tiller

Developing bud

Rhizome

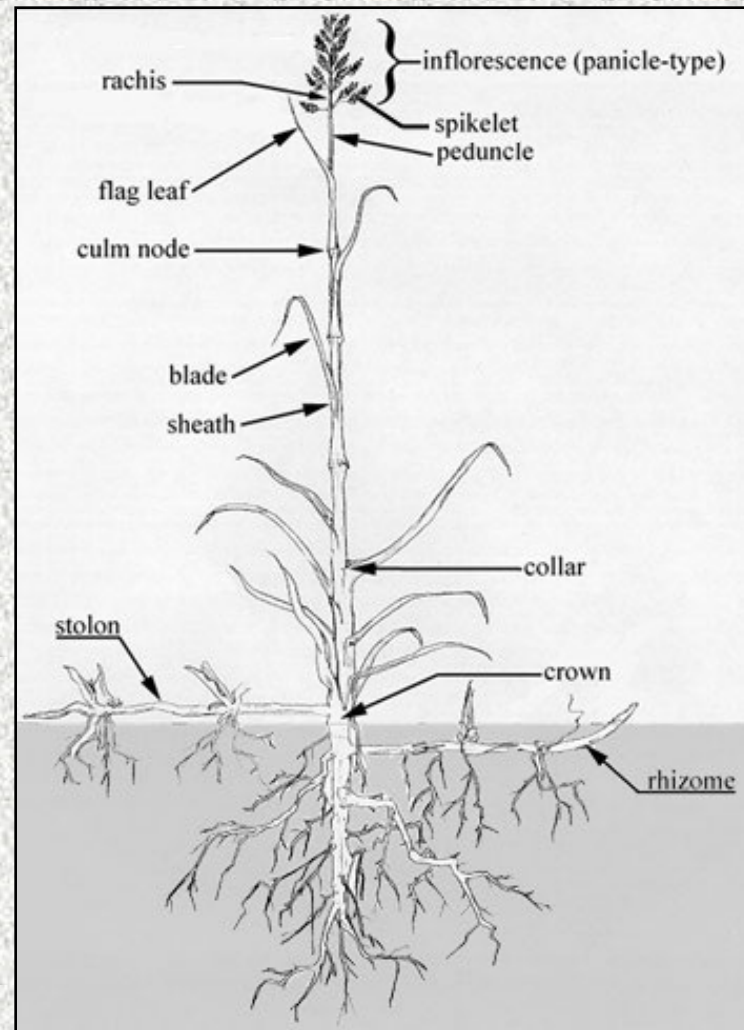


Plant Identification:

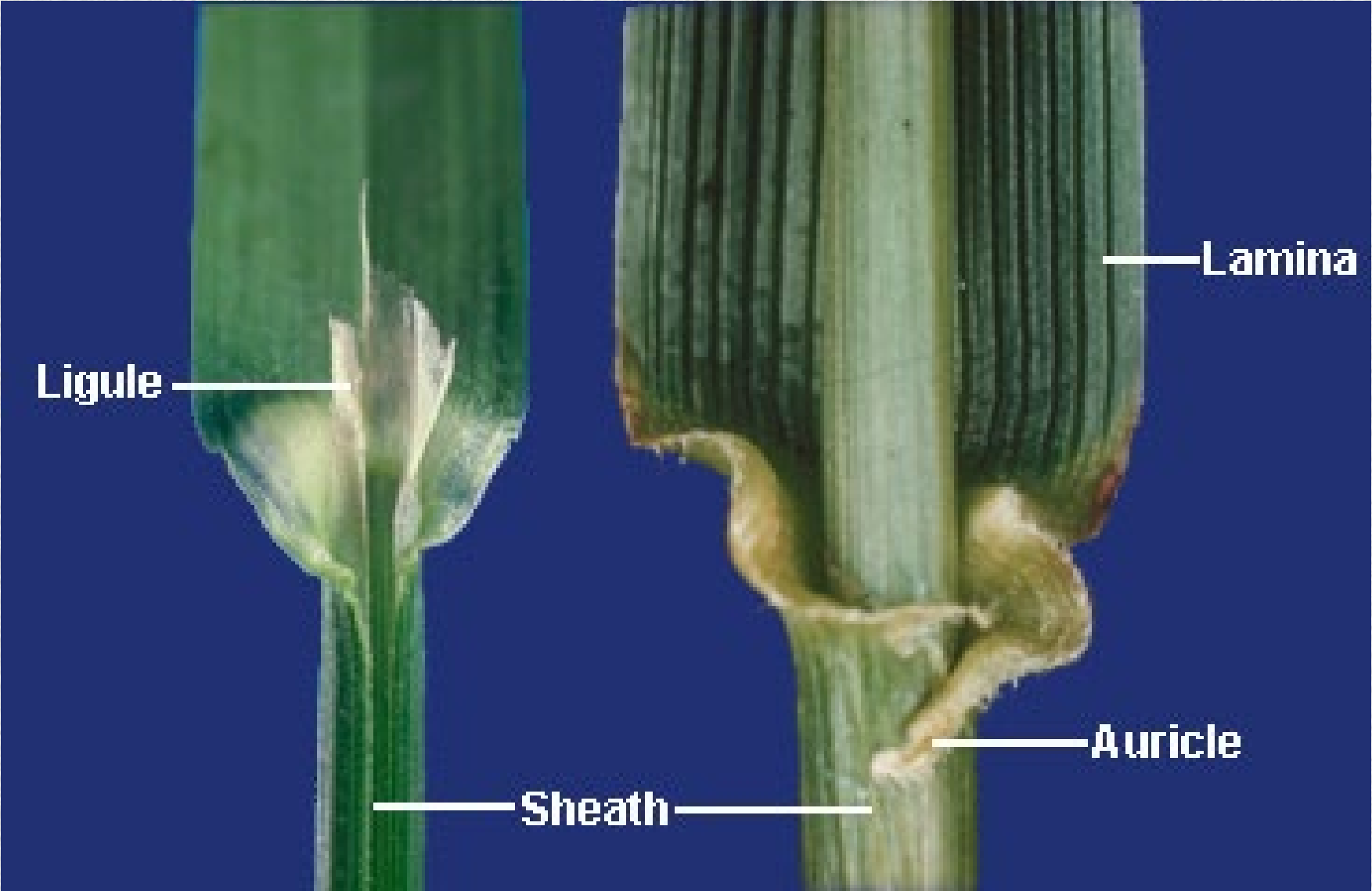
Knowing what you are managing

Characteristics for Grasses

- Bunch or sod-forming
- Seedhead
- Plant color
- Leaf shape, size, veins, texture
- Sheath
- Absence or presence of hair
- Ligules
- Collar
- Auricles



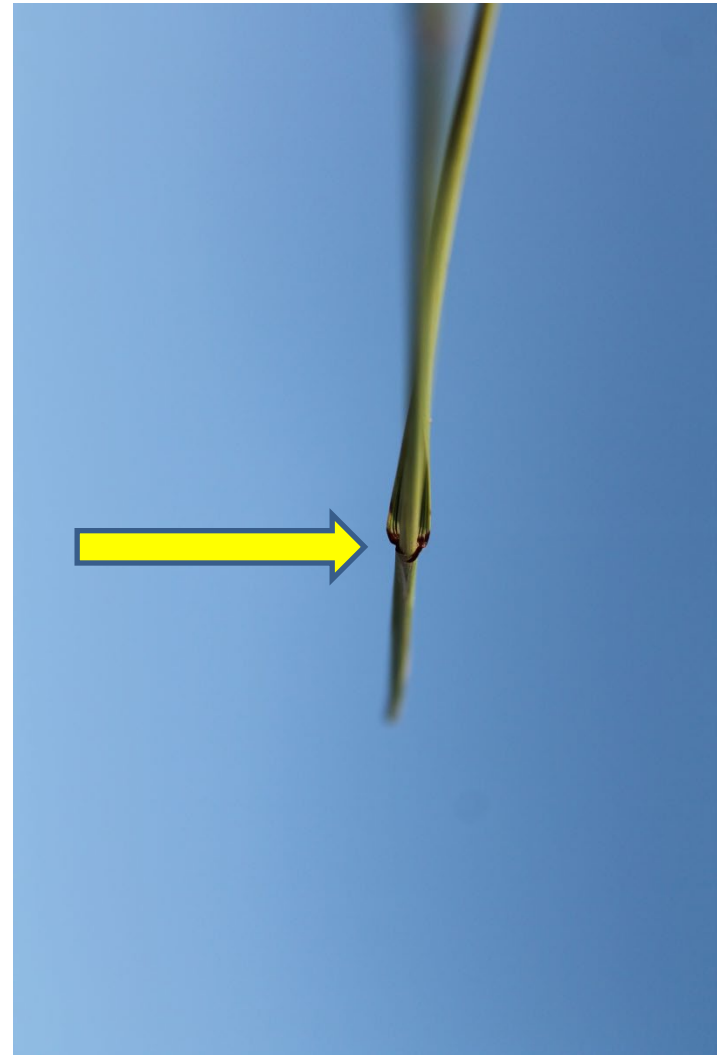
Plant Identification



Clues to Identify- Auricle

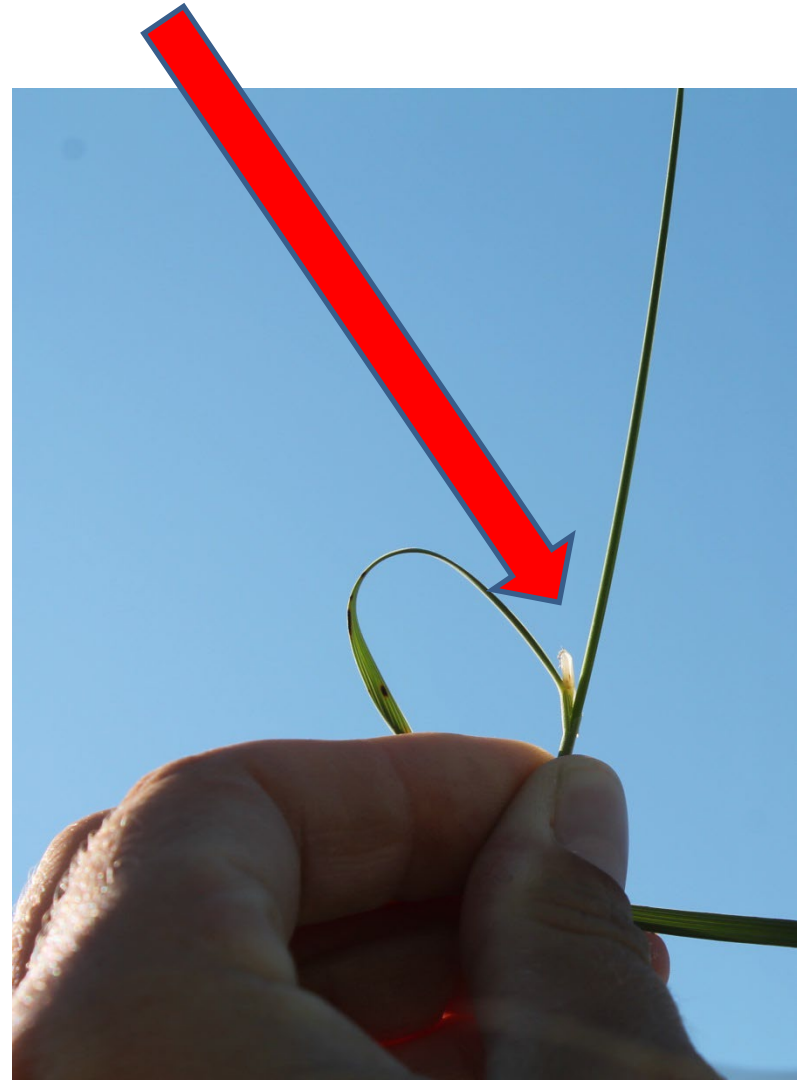
- Auricles- “ears”
- Little ears that wrap around stem

This is western wheatgrass



Clues to Identify- Ligule

- Ligule- paperlike flap
- Needleandthread
- Reed Canarygrass



Clues to Identify- Hairs



Hairy Examples:

Hairs around collar- Sand Dropseed

Tuft of hair at collar- Sand Lovegrass

Patch of hair at “armpit”- Switchgrass

Long hairs off leaf blade- Blue Grama

Clues to Identify- Smell

Sage- Cudweed Sagewort
Lemon- Lemon Scurfpea
Stinky- Western Ragweed



Clues to Identify- Site



Blue (grama) = Bottoms



Hairy (grama) = Hills



Clues to Identify- Leaf Shape

