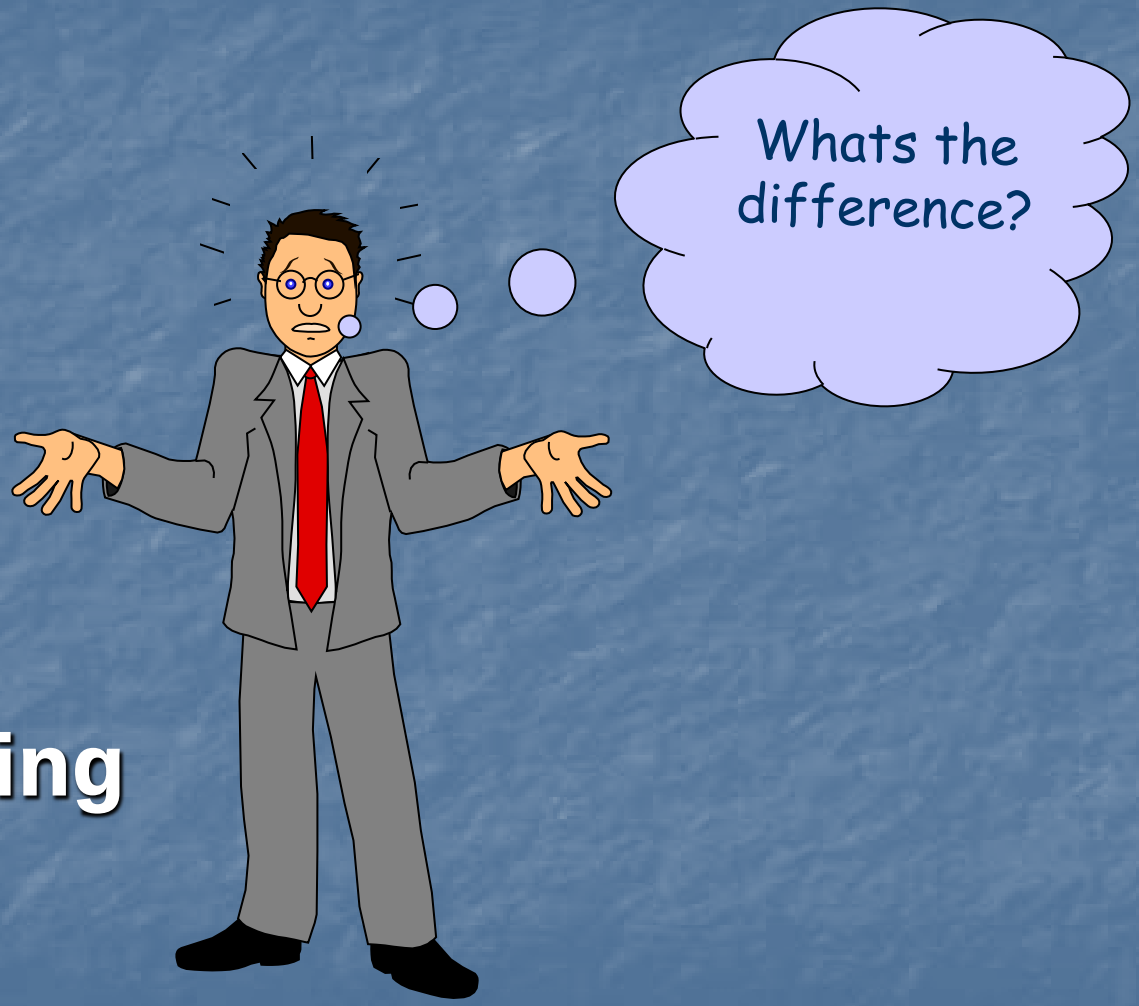
Monitoring Grazing Plans

Shane A. Green, NRCS Utah

Terminology

- **Inventory**
- **Monitoring**
- **Assessment**
- **Record Keeping**



Inventory

The systematic acquisition and analysis of resource information needed for planning and management. This information is generally quantitative & not collected as frequently as monitoring data.

Assessment

The process of estimating or judging the value or functional status of ecological processes (e.g., rangeland health, pasture condition score). It is generally a “moment-in-time” evaluation that is not repeated in the future (not a monitoring tool).

Monitoring

The orderly and quantitative collection, analysis and interpretation of resource data to evaluate progress (trend) toward meeting management objectives.

% Cover			
Attribute	1980	1990	2000
Bare Ground	12	20	26
Live Plants (canopy)	47	34	27

Record Keeping

The observation and recording of pertinent data (i.e. grazing start and end dates, weather conditions, forage utilization/stubble heights, wildlife use, etc.) needed to evaluate the grazing management.

Why Monitor?

- Monitoring is a requirement of the 528 Prescribed Grazing Standard

"Monitoring plan developed with appropriate records to assess in determining whether the grazing strategy is resulting in a positive or upward trend and is meeting objectives. Identify the key areas and key plants that the manager should evaluate in making grazing management decisions."

Why Monitor?

- **What are the starting conditions?** *Baseline*
  - *Answered by* **Inventory and Assessment**
- **What Happened?** *What changed, was there improvement, what environmental benefits resulted, etc.*
  - *Answered by* **Monitoring**
- **How did that happen?** *What caused the changes*
  - *Answered by* **Record Keeping**

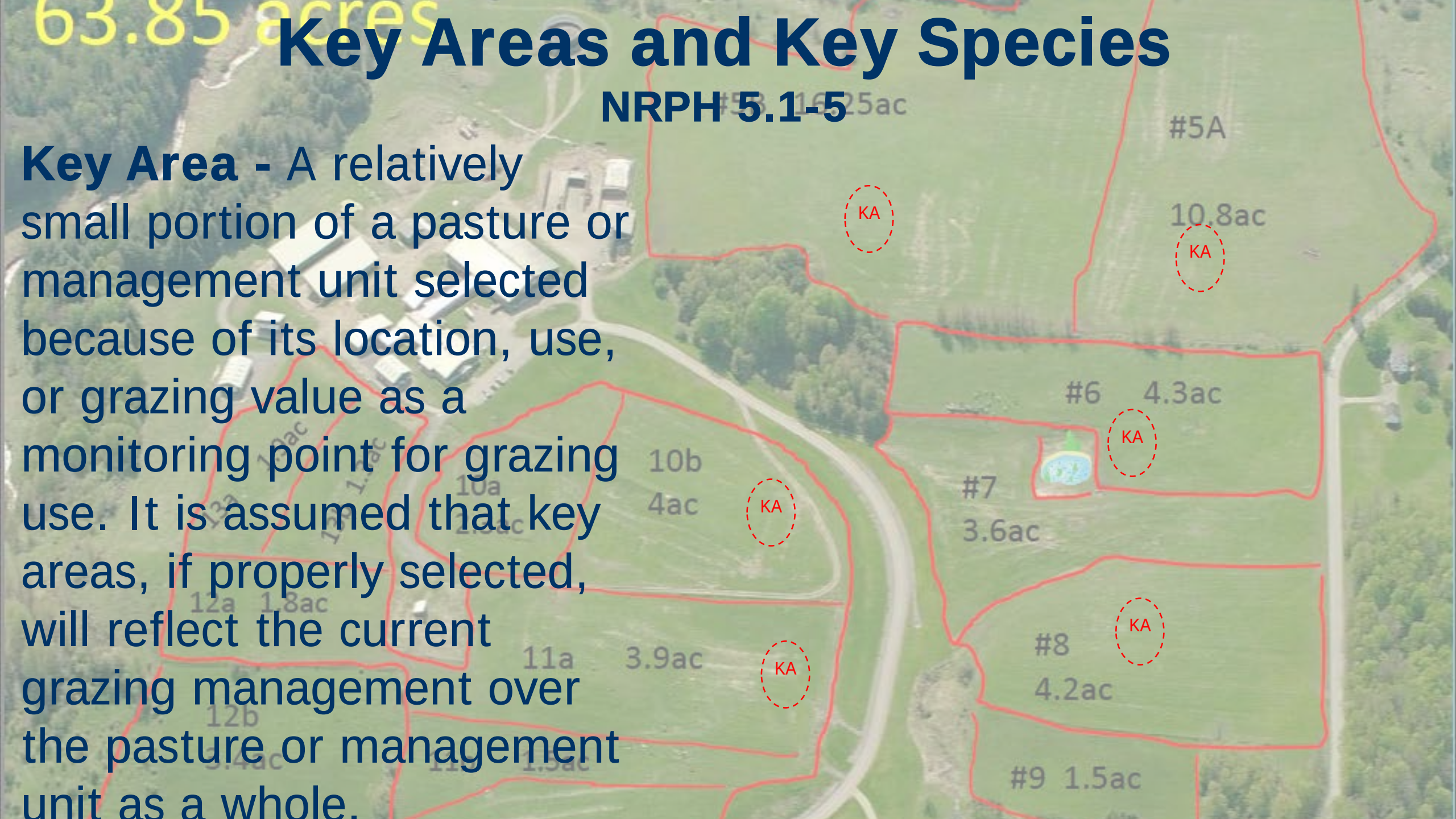
Records required to certify 528 Prescribed Grazing

- Field name and/or number (corresponding to the Conservation Plan Map)
- Number of Livestock, Kind and Class
- Move in Date(s)
- Move out Date(s)
- Utilization rates (rangeland) or stubble heights (pasture)
- Salting/Feed Supplement information, Dates and Locations
- Waters (as appropriate, especially if used for rotational purposes)
- Riding/Herding Dates and Effect (as appropriate)
- Other uses and effects (wildlife use, recreationalist, etc)

Key Areas and Key Species

NRPH 5.1-5

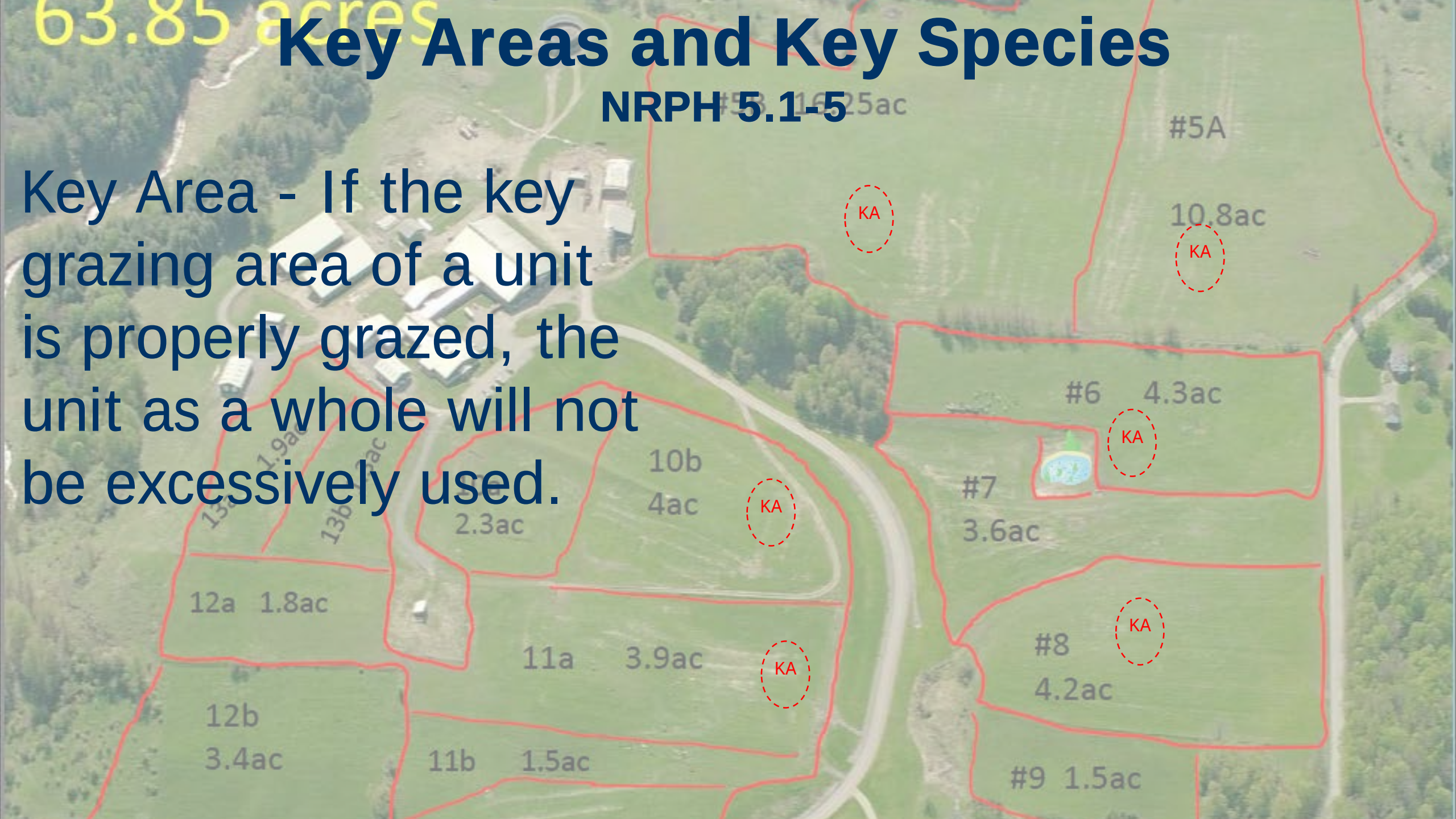
Key Area - A relatively small portion of a pasture or management unit selected because of its location, use, or grazing value as a monitoring point for grazing use. It is assumed that key areas, if properly selected, will reflect the current grazing management over the pasture or management unit as a whole.



Key Areas and Key Species

NRPH 5.1-5

Key Area - If the key grazing area of a unit is properly grazed, the unit as a whole will not be excessively used.



Key Areas and Key Species

NRPH 5.1-5

- **Key Species -** A single plant species (or in some situations two or three similar species) chosen to serve as a guide to the grazing use of the entire plant community. If the key species on the key grazing area is properly grazed, the entire plant community will not be excessively grazed.

Key Areas and Key Species

NRPH 5.1-5

- **Key Species -** If the key species within the key grazing area is properly grazed, the entire plant community will not be excessively used.

Monitoring Indicators

Is there a positive or upward trend?

Short–Term Monitoring Indicators

- Productivity (pre grazing forage lbs/ac) – assist in planning current year grazing
- Residual (post grazing forage lbs/ac) – to use in calculating harvest efficiency
- Nutrition (fecal analysis with NUTBAL)
- Photo Plots (pre and post grazing)
- Streambank Alteration (hoof shearing)

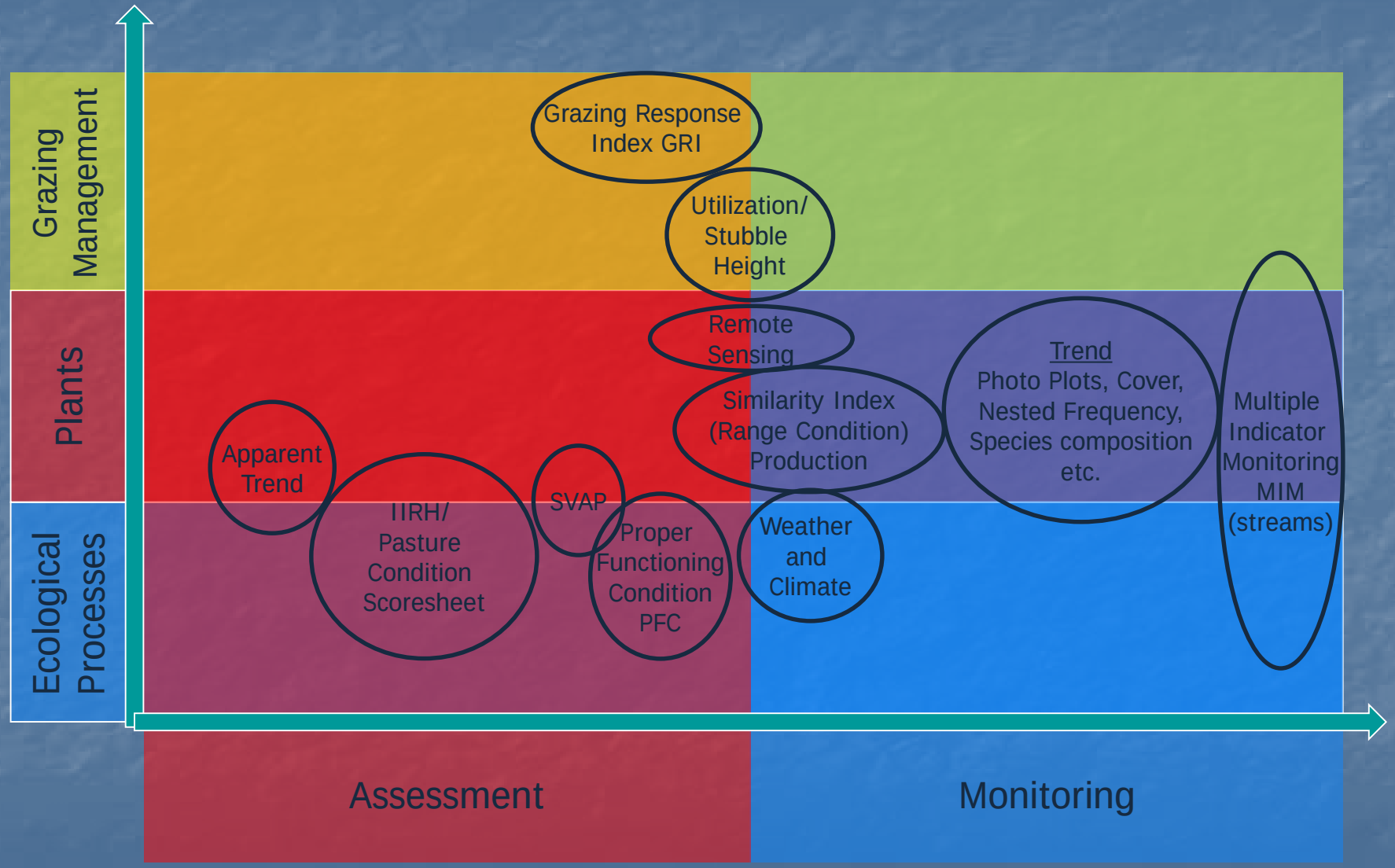
Long-Term Monitoring Indicators

- Permanent Photo Plots
- Composition by annual production
- Composition (greenline, for streams)
- Structure and/or age class
- Cover – Foliar and Ground
- Frequency
- Gap
- Density
- Soil Stability
- Streamside Stability (For Riparian)
- Stream metrics (i.e. width, depth, substrate)

Quantitative Vegetation Measurements

- Metrics – examples: Cover, Production, Frequency, Density
  - Techniques – examples: Point intercept, Comparative Yield, Gap intercept, Rising (or falling) Plate Meter
    - Interpretations – examples: Rangeland Health, Pasture Condition Score, Trend, Similarity Index, Species Composition

“Tools”, Techniques and Interpretations



Monitoring Methods and Techniques

OJT Modules on Vegetation Measurements

"700 Series" – How to conduct:

- Belt Transect
- Gap Intercept
- Line Point Intercept
- Riparian Channel Vegetation Survey
- Cover Board Method
- Daubenmire Method
- Dry Weight Rank
- Point Intercept
- Step Point
- Plant Frequency
- Species Richness
- Tree Density
- Plant Production
- Vegetation Structure
- Photo Points

NRCS Web Site Home /Soil Education /NCSS Members /On-the-Job Training Modules
https://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/edu/ncss/?cid=nrcs142p2_054326

Monitoring Methods and Techniques

- NRI Protocols
- Remote Sensing/Aerial Photo Interpretation

- www.landscapetoolbox.org

The LandscapeToolbox
Tools & Methods for Effective Land Health Monitoring