

NatGLC – Grazing 101 Course

Course Introduction (15 minutes)

- Welcome & Intent of Course
- Instructor Introduction
- How Course Works
 - Format of course
 - Tour of Course Navigation

Unit 1: Why and How Animals Graze (30 minutes)

- Evolutionary history of herbivory (how herbivory has impacted the landscape)
 - herbivores anatomically and physiological adapted to eating plants – primary consumers
 - ever so brief snippet of evolutionary history of herbivory
- Morphology of the act of grazing of cows, sheep, goats, and horses
- Physiology of herbivores/ruminants – general overview of how rumination works
- General overview of animal nutrition requirements & nutritional value of plant parts
- Types of herbivores: grazers, intermediate, browsers
- Palatability, plant and environmental attributes and palatability
- What does primary grazing livestock species like to eat and where on the landscape – animal attributes & diet selection
- How do young learn what to eat?
- Plant toxicity

Unit 2: Why Care About Grazing Management (1.5 hours)

- Big picture: Managing the Land System to Benefit the Operation
 - Systems thinking in relation to ecological structure & function
 - Ecosystem Goods & Services
 - Prescribed Grazing (little bit)
- Grazing & plants
 - Overview of plant morphology, physiology & growth phases
 - Impacts of defoliation: plant morphology, physiology, roots
 - Decreasers, increasers, invaders
 - Adaptations to grazing resistance: avoidance & tolerance
- Grazing & soil & water
 - Brief overview of soil texture & structure
 - Compaction & soil structure; water infiltration; WHC; surface water pathways
 - Soil erosion
 - Biotic crusts & soil organisms, soil health
 - Benefits: break-down thatch layer, create microsites for germination, increase SOM and nutrient cycling
- Grazing & riparian
 - Upland impact on riparian
 - Riparian areas (pull a bit from PFC)
- Grazing & ecological processes
 - Water, nutrients, carbon cycles in relation to grazing

- Grazing & wildlife
 - Habitat & dietary overlap
 - Predation & Disease transmission

Unit 3: Principles of Grazing Management (60 minutes)

- 4 variables of grazing management (what they mean and how they are generally manipulated)
 - Intensity
 - Frequency
 - Timing
 - Duration
 - Examples of manipulating variables and good/bad
- 4 principles of grazing management
 - Proper Stocking Rate
 - General trends in vegetation production & ROI in relation to stocking rates (range systems)
 - Concept of optimum stocking rate
 - Proper Distribution
 - Water, topography, shade
 - Ways to improve distribution (minerals, water, shade, herding, fencing (virtual too))
 - Examining vegetation patterns of grazing area
 - Proper Type of Animal
 - Species & breed considerations (topography, climate, palatability, water, wildlife interface, ROI, health risks)
 - Proper Grazing System
 - What is a grazing system?
 - Deferred vs. Rest Rotations

Unit 4: Math of Grazing Management (2 hours)

- Supply & Demand
 - What vegetation do I have, of this what is palatable, and how much of it do I have– how to figure this out
 - What do my grazing animal need? What about wildlife?
- Stocking Rate
 - What is it
 - How to calculate it
- Grazing Scenario Calculations
 - Mixed herds
 - Distance water & topography
 - Durations
 - Wildlife dietary overlap

Module 5: Grazing Systems (2 Hours)

- Overview of about a dozen grazing systems and their applications
- Targeted grazing fundamentals
 - What is targeted grazing and how is it different from general grazing and prescribed grazing
 - Uses and Benefits of targeted grazing
 - Several Applications of targeted grazing
- No Grazing System is the Magical Key

Unit 6: Grazing Planning (2-4 hours)

- NRCS 9 step planning process
- Goals & Objectives: animal production & land
 - SMART Objectives
 - Examples of Goals & Objectives
- Land & Grazing Assessment (general checklist of inventory/assessment considerations)
 - Forage: composition, species biology, density, distribution, palatability (toxicity), production, key areas & species –map it out
 - Soil, water, nutrients (Riparian considerations)
 - Climate & topography influences
 - Wildlife Interface
 - Animal production – species/breed, age/class & purpose, foraging behavior & palatability & nutrition
 - Infrastructure
 - Systems Thinking
- Mapping & Calculating
- Plan Outline & Visuals
- Implement, Monitor & Adapt

Unit 7: Pulling it Together: Real Life Scenarios (45 minutes)

- Variety of Grazing Scenarios: PNW, NV, CO, NM, Great Plains, SE

Unit 8: Design or Modify Your Grazing Plan (2-8 hours)

- ~10-minute video modeling process outlined in Module 6.