Course Outline
ECOLOGY AND MANAGEMENT OF GRAZING
(An Online Course in Grazing Animal Management)
MODULE 1: ECOSYSTEMS AND THE EFFECTS OF GRAZING

Presentation 1-Characteristics of Grazed Ecosystems
A) Terminology
   1) Rangeland
   2) Grazing
   3) Pasture
   4) Forage Crop
B) Rangeland Biomes of World, U.S. and California
   1) Deserts
   2) Grasslands
   3) Other grazed vegetation types
C) Comparison of Rangeland and Pasture

Presentation 2-Importance of Grazing and Grazinglands
A) Ecosystem Services
   1) Provisioning services
   2) Regulating services
   3) Supporting services
   4) Cultural services
   5) Preserving services
B) Importance to Cultures
C) Importance to Industry

Presentation 3-Rangeland Ecosystems
A) Terminology
   1) Ecosystem
   2) Structure
   3) Function
   4) Abiotic
   5) Biotic
B) Scale and Hierarchy
   1) Levels large to small
   2) Examples
   3) Foothill Hierarchy
   4) Interactions
   5) Grazing and scale
C) Abiotic Components
   1) Solar radiation
   2) Climate/Weather
   3) Soil
   4) Topography
D) Biotic Components
   1) Plants (Producers)
   2) Herbivores (Primary Consumers)
3) Carnivore (Secondary Consumers)
4) Decomposers

E) Ecosystem Processes
1) Energy
2) Water
3) Nutrients

F) Community dynamics
1) Succession
   a) Primary
   b) Secondary
   c) Climax/Stability
   d) Examples
      (1) forest
      (2) prairie
      (3) non-linear
      (4) state and transition models
2) Ecological Sites

Presentation 4-Effects of Grazing on Plants
A) Grass life cycle
   1) Annual
   2) Perennial
B) Grass growth
C) Grazing effects
   1) Direct
      a) plant physiology
      b) morphology
      c) defoliation
      d) trampling
   D) Indirect
      1) Microclimate
      2) Soil Properties
      3) Competitive Interactions
      4) Examples
E) Grazing resistance
   1) Avoidance
   2) Tolerance

Presentation 5-Effects of Grazing on Communities
A) Effects of grazing and other disturbances on succession
   1) Succession
   2) Retrogression
B) Altered States/State and Transition Models
   1) Great Basin altered stable states
   2) California grassland altered states

Presentation 6-Effects of Grazing on Ecosystems
A) Hydrologic Cycle
   1) Infiltration and Runoff
a) Pollutant transport  
   b) Surface water pollution  
      (1) sediment  
      (2) nutrients  
      (3) pathogens  
      (4) heat  
B) Nutrient cycling  
   1) Nutrient Movement  
   2) Nutrient Loss  
   3) Nutrient Redistribution  
C) Targeted Grazing  
D) Fuel reduction  
E) Weed management  
F) Shrub management  
G) Wildlife habitat  
   1) Annual Grassland Thatch Reduction  
   2) Vernal Pools  
   3) Bay Checkerspot Butterfly  
Assignments  
A) Text Chapter 1-An Ecological Perspective (M1)  
B) Grazing in Arid North America (M1, P1)  
C) Transhumance (M1, P2)  
D) Pastoralism (M1, P2)  
E) Global CRSP 3rd World Nutrition (M1, P2)  
F) FRRAP Report (M1, P2)  
G) Rangeland Mapping and Information (M1, P3)  
H) Stages of Maturity (Phenological Stages) Document (M1, P4)  
I) How Grass Grows (M1, P4)  
J) Grass Growth (M1, P4)  
K) Nutrient Cycling in Pastures (M1, P6)  
L) Oak-Woodland Nutrient Cycle (M1, P6)  
M) California Rangeland Coalition (M1, P4)  
Links to Additional Resources  
A) Rangeland Acreage Spreadsheet (M1, P1)  
B) Grass brochure  
C) http://forages.oregonstate.edu/projects/regrowth/main.cfm?PageID=35  
D) http://forages.oregonstate.edu/index.cfm  
E) Plant Succession  
F) Herbivory Matrix  
G) Mod1.Effects of Grazing Bibliography (M1)