Introduction to the Grazing Management

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Trees, shrubs, and grasses are very important in all the watershed zones, especially in the collection zone.

**COLLECTION ZONE**

- Vegetation reduces hillside erosion
- Reduces topsoil loss
- Traps snow melt on the slope
- Allows the water to sink into the ground instead of running off
- Recharges ground water
Management in the Collection Zone

- Keep hillside grasses healthy and strong
  - Proper grazing use
  - Control weeds
- Protect the hillside trees and shrubs from grazing and illegal harvesting
- Eat half and leave half of the grass plants
- Train the herders
How Grass Grows

• Grass leaves use sunlight for energy to make plant food
• Grass leaves use carbon dioxide from the air to make plant food
• Grass leaves make plant food which is used for:
  • Growth
  • Seed production
• Roots
  • Take in water and minerals used by leaves to make plant food
  • Store plant food for next season
  • Hold the plant in place
• Roots

• Are different for grasses, shrubs, and trees
• Some are hair-like and shallow
• Some are deep with few hair-roots
Hillside Grass in good condition

- Grass rebuilds the soil
- Plants produce seeds that produces a new generation of grass
- Provides erosion control for the hillside
- Minimizes loss of water by runoff
- Maximizes water absorption
Hillside Grass in good condition

- Allows adequate storage of plant food for next season
- Evens out soil temperatures
- Maintains soil fertility
- Promotes active bacterial action to help with mineral and nutrient uptake
Hillside grass that is grazed beyond 50% means:

- Seed, Litter, and plant residue are removed
  - so next season’s grass crop will be smaller
- Runoff will increase
- Water absorption will decrease
- Soil will become hard and caked
- Not enough plant food will be stored in the reduced roots for next season’s growth
If 50% of the leaves are removed, only a small amount of the root growth is stopped.

<table>
<thead>
<tr>
<th>Percent leaf volume removed</th>
<th>Percent root growth stopped</th>
</tr>
</thead>
<tbody>
<tr>
<td>10%</td>
<td>0%</td>
</tr>
<tr>
<td>20%</td>
<td>0%</td>
</tr>
<tr>
<td>30%</td>
<td>0%</td>
</tr>
<tr>
<td>40%</td>
<td>0%</td>
</tr>
<tr>
<td>50%</td>
<td>2-4%</td>
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<tr>
<td>60%</td>
<td>50%</td>
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<tr>
<td>70%</td>
<td>78%</td>
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<tr>
<td>80%</td>
<td>100%</td>
</tr>
<tr>
<td>90%</td>
<td>100%</td>
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</tbody>
</table>

If 60% of the leaves are removed, as much as 50% of the root growth is stopped.
As the grass plants are over-grazed year after year:

- Grass plants produce less
- Seed for the next grass generation is lost
- Plants are not strong
- Plant food is not stored in roots for next season
- Plant Roots will die off
  - weeds will invade without competition from grass roots
When weeds replace hillside grass:

- Weeds produce significantly less pounds of feed than grass
- Weeds do not have as much protein as a grass
  - This means skinny sheep
- Weeds are a high fire hazard
- Runoff increases
  - Rain or snowmelt only wets the soil surface
- Soil erosion is increased
When weeds replace hillside grass:

• Livestock do not like to eat weeds as much as grass

• Weed roots crowd out new grass plants

• Recovery of the hillside grass takes much longer
To get the best production of hillside grass:

1. Delay initial grazing of the grass plants until June.

2. Keep early grazing periods short when the grasses are just starting to grow.

3. Eat half and leave half during each grazing period.
To get the best production of hillside grass:

- Allow 28-30 days between grazing periods
  - For leaf re-growth
  - Allows surplus plant food to be stored in the roots

- At the end of the grazing season,
  - Leave half of the growth to produce enough plant food to fill the roots before the plants go dormant
  - Leave enough residue on the plant to provide insulation from the cold winter temperatures
Training the herders

- Keep the vegetation on the slope
  - **Control grazing**
    - Move the herds as they graze the plants down
  - Keep them out of the riparian areas
- **Train the herders**
  - Not to allow the sheep and goats to take all the vegetation
  - Recognize areas not to graze
Training the herders

• Keep the vegetation on the slope
  • Take only 50% of the plants each year
    • Leave some grass on the hillside
  • Rotate time of use
    • In each pasture
    • Each year
    • Early grazing should only happen 1 out of 3–4 years in each pasture
Training the herders

- How to measure 50% of the plants each year?

1. Find a sample grass plant that has not been grazed

2. Take all the seed heads and leaves in hand
Training the herders

• How to measure 50% of the plants each year?

3. Cut the grass bunch off at ground level
   • Include all the seed heads and leaves down to the ground

4. Hold all the cut parts of the plant in your hand
   • Do not loose any of the seed heads or leaves
Training the herders

• How to measure 50% of the plants each year?

  5. Tie the bundle of seed heads and leaves together with a leaf or string

  6. Place the tie in about the middle of the bundle where you think half is
Training the herders

- How to measure 50% of the plants each year?

7. Place the middle of the bundle on your outstretched finger

8. Attempt to balance the bundle on your finger

9. Move the bundle back and forth on your finger until it balances
Training the herders

• How to measure 50% of the plants each year?

10. Once the bundle balances on your finger, this is approximately the center of the plant mass
Training the herders

• How to measure 50% of the plants each year?

12. Cut the bundle at the point of balance

13. The bundle base is about half of the whole plant
Training the herders

• How to measure 50% of the plants each year?

12. Measure the height of the cut base bundle
13. This is 50% of the grass plant that must be left

This is an easy way for the herder to determine the “eat half and leave half” in the field.
Management in the Transport Zone

- Protect Riparian buffers
- Protect the trees and shrubs along the rivers and creeks
- Trees and shrubs provide shade and filtering of sediment and nutrients
Management in the Transport Zone

• Provide adequate moisture for riparian trees and shrubs

• Keep grass on the hillsides to catch snow runoff

• Recharge ground water
Management in the Transport Zone

- **Control grazing**
  - Keep livestock out of the riparian areas
  - Do not let the sheep eat all the grass in the riparian area in late fall
Management in the Transport Zone

- Control access to the riparian area
  - Water animals in one place not all along the river
  - Allows plants to grow along the river and protect the banks
- Control weeds
  - Weeds will limit the grass production
Management in the Deposition Zone

- Preserve the vegetation
- Control grazing
- Control dust by planting a cover crop
- Plant windbreaks to decrease dust and protect plants
- Rehabilitate or build wetlands to help clean the water
Test Time

What is wrong here?

1) Herder is not paying attention to the goats
2) Animals have been in one place too long
3) No riparian buffer
Test Time
What is wrong here?

1) Where is the herder?
2) Sheep are grazing more than half the grass plants