Intensive Grazing on Irrigated Pastures
Adapted from ATTRA’s new publication, Why Intensive Grazing on Irrigated Pastures? by Dave Scott, NCAT Livestock Specialist

Management-intensive grazing, intensive grazing, short-duration grazing, and holistic-management grazing are all variations on the same theme. They all make use of short paddock grazing periods, high stocking densities, and planned pasture-recovery periods designed to optimize forage quality, diversity, and longevity. Combined, these three components enable ranchers to improve forage production and harvest, thereby maximizing net profit. All intensive grazing schemes are defined by:

- Paddock grazing periods of one to four days
- Stocking densities of 50,000 to 500,000 pounds per acre
- Pasture-recovery periods of 20 to 35 days

Advantages of Intensive Grazing Over Continuous Grazing or Haying

- Double your stocking rate, compared to continuous grazing.
- Harvested forage dry matter costs several to 10 times less than haying ($4.85 to $6.50/ton vs. $50/ton).
- Produce and harvest stockpiled forage for $60/ton vs. $100/ton.
- Control parasites without wormers by maintaining a 5-inch stubble.
- Increase your control of pasture species, resulting in greater legume populations, more diverse stands, and less fertility inputs.
- It is easier to predict forage inventory at any given time during the grazing season.
- Provide stockpiled least-cost forage for winter. See page 4.
- Grass uses 25% less water than alfalfa over the crop season.

Considerations

- Requires slightly more planning and management than other grazing systems or haying.
- Increases labor. You are harvesting your crop (i.e., moving livestock) every day or two instead of every week or two.
- Uses more temporary fencing than continuous or conventional rotational grazing.
- Requires more fertility (mostly nitrogen) than conventional grazing systems because of higher forage production.

Will It Work for Me?

- Am I willing to devote a little more time each day to management? Use of ATTRA’s new Grazing Calculator (see page 2) will greatly simplify pasture and irrigation management.
- Am I willing to allocate labor to move stock every one to four days?
- Always maintain a grass gradient. Look ahead. Use the Grazing Calculator to estimate how many pounds of dry matter per acre your grass produced over the last week? How many pounds per acre are currently in the paddock where the stock will be one week from today? At the present growth rate, will there be enough forage to meet the grazing unit’s daily dry matter intake?

Bottom Line

In the long run, intensive grazing will decrease forage harvesting costs by a factor of several to 10 times. It diverts investment capital from high-cost forage-harvesting equipment to livestock. Over time, livestock reproduce and appreciate in value. Haying machinery will only break down.

The cost is your management time and labor. Are you allocating your time to its best advantage?
Intensive Grazing Resources

• American Forage and Grassland Council
  P.O. Box 94, Georgetown, TX 78627
  800-944-2342
  www.afgc.org

• American Grassfed Association
  P.O. Box 400, Kiowa, CO 80117
  877-774-7277
  www.americangrassfed.org

• California Grazing Academy
  Contact: Roger Ingram, University of California Co-op Extension Livestock and Natural Resources Farm Advisor,
  rsingram@ucdavis.edu, 530-889-7385

• Eat Wild website lists farmers and ranchers who raise livestock on pasture and sell directly to consumers.
  www.eatwild.com

• Extending Grazing and Reducing Stored Feed Needs

• Graze magazine
  P.O. Box 48
  Belleville, WI 53508
  608-455-3311
  www.grazeonline.com

• Grazing Systems Planning Guide
  www.extension.umn.edu/distribution/livestocksystems/DS17606.html

• Holistic Management International
  5941 Jefferson St. NE, Suite B
  Albuquerque, NM 87109
  505-842-5252
  www.holisticmanagement.org

• NRCS Grazing Lands Technical Publications

• Natural Resources Conservation Service has grazing specialists in every state. Contact your county office.
  www.glti.nrcs.usda.gov

• Pastures for Profit: A Guide to Rotational Grazing
  http://learningstore.uwex.edu/pdf/A3529.pdf

• Quivira Coalition
  1413 2nd Street, Ste. 1
  Santa Fe, NM 87505
  505-820-2544
  www.quiviracoalition.org

• Stockman Grass Farmer magazine
  P.O. Box 2300, Ridgeland, MS 39158
  800-748-9808
  www.stockmangrassfarmer.com

• Weston A. Price Foundation
  4200 Wisconsin Avenue NW
  Washington, DC 20016
  202-333-HEAL
  www.westonaprice.org/farming/splendor.html

ATTRA Resources for Intensive Grazing

The following ATTRA publications and resources include useful information related to intensive grazing management. These resources and many more can be found in the Livestock and Pasture section of ATTRA’s website, www.attra.ncat.org. Call 800-346-9140 for a printed copy. Prices vary. Many resources are free. SP* titles are also available in Spanish.

• A Brief Overview of Nutrient Cycling in Pastures IP221
• Assessing the Pasture Soil Resource IP128
• Converting Cropland to Perennial Grassland IP244
• Dung Beetle Benefits in the Pasture Ecosystem CT155
• Grazing Contracts for Livestock IP247
• Grazing Networks for Livestock Producers CT166
• Managed Grazing in Riparian Areas IP223
• Multispecies Grazing CT147
• Nutrient Cycling in Pastures IP136
• Paddock Design, Fencing, and Water Systems for Controlled Grazing IP152
• Pasture, Rangeland, and Grazing Management IP306
• Pastures: Going Organic IP297
• Protecting Riparian Areas: Farmland Management Strategies IP186
• Pressure-Treated Wood: Organic and Natural Alternatives IP362
• Rotational Grazing IP086
• Ruminant Nutrition for Graziers SP* IP318
• Tools for Managing Internal Parasites in Small Ruminants: Animal Selection IP400
• Tools for Managing Internal Parasites in Small Ruminants: Pasture Management IP401
• Pastures: Sustainable Management IP284
• ATTRA's New Publications about Intensive Grazing Management

• Grazing Calculator: Extended Cow-Calf Pair IP458 (Download only)
  This calculator provides a simple and quick way to analyze your grazing program as you work your way through the grazing season. It will make management decisions much easier and give you confidence that you’re on track with your grazing plan.

• Irrigated Pastures: Setting Up an Intensive Grazing System that Works IP456

• Why Intensive Grazing on Irrigated Pastures? IP457
  Updated —
  • Pastures: Sustainable Management IP284

Other New and Updated ATTRA Publications

• Bringing Local Food to Local Institutions IP242
• Community Orchards IP446
• Food Hubs: A Producer's Guide IP455

ATTRAnews: www.attra.ncat.org
A successful multi-paddock, intensive grazing system must provide least-cost nutrition for sustained animal production. It must optimize not only forage quantity, but also the quality, diversity, and longevity of the forage stand. Ranches that successfully attain these goals will profit immensely from the sustainability that will inherently follow.

The very first steps in designing a successful intensive grazing system are to determine:

1. Paddock grazing period
2. Pasture-recovery period, or rest period

**Some Paddock Grazing Period Considerations**

- To minimize the potential for selective grazing on different pasture species, such as legumes, the grazing period should be no more than two days. The use of legumes and associated mycorrhizal symbiosis with grasses offer new potential for high forage production without large inputs of commercial fertilizers.
- Grazing below the growing point of grass will result in one week of lost production. Two-day grazing periods limit this over-grazing. Learn the grazing point of your pasture species. One or two days of less fence moving at the cost of a week’s worth of production is not a good trade.
- For dairy, higher dry matter intake—and more milk—is achieved with 12-hour grazing periods.
- Don’t overlook the importance of labor. If you want the increased net income that results from an intensive grazing system, you must put in the time. Look elsewhere to reduce labor. Intensive grazing gives you more stockpiled winter pasture. Could you hay less?

**Some Grazing Recovery Period Considerations**

- In any particular region, the grazing recovery period will depend on the species of forage. For example, orchard grass and meadow bromes need a minimum of 20 days of rest, and perennial ryegrasses need two weeks. If you disregard this need in temperate climates, you will lower production. In the Rocky Mountain West, the stand could very well suffer winter kill. Additionally, shorter rest periods (20 days) have higher nutrient uptake demands (hence, more added fertilization) than longer rest periods.
- Shorter rest periods tend to keep the forage vegetative and of higher feed quality.
- Legumes do well with longer rest periods. In temperate climes, you can get away with 20-day rest periods. In the Rocky Mountain West, legumes need 35 days minimum or the legume will suffer winter kill.
- In general, rest periods of 35 days allow cool-season forages to mature and fully recover. As long as this meets the grazing animal’s nutrient requirements, full plant recovery should be your goal. This positions you to achieve highest forage and animal production for least cost. Rest periods of 35 days produce about 15% to 20% less dry matter grass yields than 20-day periods. There is also a corresponding 25% decrease in plant nutrient uptake. Less nutrient demand combined with the use of long-lived legumes may allow a more sustainable production model.
- Intensely high production can only be sustained by high nutrient inputs. In these days of high fertilizer prices, you may reach a point of diminishing returns.
- For parasites, a 30- to 35-day rest period seems to limit infective larval survival as opposed to 20-day periods. This opens up the opportunity to control parasites effectively without the use of wormers.
Stockpiling is defined as letting forage grow during summer and deferring grazing to the fall or winter. This is an effective way of providing winter forage in some areas and can reduce the need for harvested forage. If it reduces hay use at all, significant savings can be realized.

Stockpiling has been shown to work well given appropriate pasture management and efficient allocation of dormant pasture during the winter. Many grass species will maintain a relatively high nutrient content and palatability for several months after dormancy begins. Two extra months of grazing can significantly reduce the costs associated with producing and feeding hay. In some cases, producers have been able to utilize stockpiled forage and eliminate the need for hay feeding completely. This usually works better in climates where the dormant grass can be preserved longer under adequate snow cover or because of reduced microbial decomposition caused by low temperatures and limited moisture.

Stockpiled forages can be fed by either limit-feeding (allowing only so many hours of grazing per day) or by strip-grazing with a movable electric wire or tape.

Another option for feeding stockpiled forages is to swath them with a hay mower and then rake them into windrows. Cattle can graze directly off the windrow during the winter by using an electric wire or electric tape to ration hay on a daily basis. This method, while still relying on a tractor to cut and windrow the hay, reduces the amount of fuel, materials, and equipment needed by eliminating the baling process altogether. This method works best in dryer regions where weathering is less likely to reduce the nutritional quality and palatability of the hay. For more information on stockpiling forage, see *Extending Grazing and Reducing Stored Feed Needs*, listed in Resources, page 2.