

Irrigation During a Drought

CONSIDERATIONS FOR NON-IRRIGATING FARMERS

Drought conditions are great anxiety producers, especially if you don't normally irrigate your crops. As painful as it may be, however, the best advice for non-irrigators is often to wait things out during a drought. While some irrigation equipment may be available on an emergency basis from dealers or area irrigators, the permitting process for surface water or groundwater sources can take well over a month. Furthermore, the manpower, training, and financing needed to develop an irrigation system make it unrealistic as a short-term solution. Running an irrigation system can be a full-time job in itself, one that can take three years to master, and one that may take ten years to pay off through increased production.

One thing you can do is realistically evaluate whether an irrigation system makes sense for you in the the long run. Follow the guidelines at right to make this determination and to understand the processes involved in setting up an irrigation system.

DO SOME RESEARCH

Consider irrigation in relation to your type of crops, soil, water availability, time and farm budget. Irrigation systems have become increasingly sophisticated—something that makes them more valuable in terms of productivity, but also more of a commitment in terms of time, management and financial investment. Discuss the matter with your county Extension office, other irrigators and equipment dealers.

- ◆ *Collect information on your soils and local climatic conditions.* If you have a sandy soil with lower water-holding capacity, for instance, an irrigation system can make a significant difference in crop yields. You can get a county soils report from the local USDA Soil Conservation Service office, county Extension office or Land Conservation department.
- ◆ *Examine the types of crops you currently grow for root depth and therefore, water needs.* You want to be sure that irrigation equipment costs will be offset by an increase in yields or quality of crop. You should also consider the possibility of growing higher value crops (using irrigation) such as potatoes, strawberries, sweet corn, dry beans, snap beans, cucumbers, potatoes and carrots. Are they realistic for your soil type and climatic conditions?
- ◆ *Consider water sources.* Contact the Wisconsin Geological and Natural History Survey for information about groundwater sources for your area. See the section below for guidelines regarding surface water.
- ◆ *Talk to irrigation equipment dealers about irrigation systems and what might be appropriate for your current or future needs.* Topography and field size are two of many factors affecting system needs.
- ◆ *Consider the economics of irrigation.* Discuss potential yields with other area irrigators as well as your Extension agent. In general, irrigation may more than double yields in a field, and pay for itself within 10 years. Increases may be 75-80 bushels of corn per acre and four tons more alfalfa per acre. However, success with irrigation varies depending upon soils, weather, climate, type of irrigation, etc.
- ◆ *Assess your current economic conditions.* Talk to your lenders. Irrigation may not be a good idea right now because of the financial burden. However, it may be something to plan for in the future.

SURFACE WATER AS AN IRRIGATION SOURCE

Surface water diversions generally cover rivers, lakes and streams. Riparian land—land which adjoins these waterways—is the first requirement for irrigators. In order to obtain a surface water diversion permit from the DNR, you also will need:

- ◆ A legal description of the land to be irrigated, such as NE1/4 of SE1/4 of Sec. 23, T14N, R10E.
- ◆ A waiver from downstream irrigators, hydropower dams, municipal or industrial waste dischargers.
- ◆ A “chain of title” test (an abstract examined by an attorney), which determines the acreage of riparian land.
- ◆ The proposed diversion, including the maximum pumping rate of the diversion, the maximum acreage to be irrigated (tillable acres), the type of crop, inches of water per irrigation, maximum number of irrigations anticipated per growing season, start and end dates of irrigation per growing season.

GROUNDWATER AS AN IRRIGATION SOURCE

Groundwater diversions are covered by DNR high-capacity well permits. These wells pump 70 gallons per minute (gpm) or more. Contact a local well driller of the DNR District water manager to initiate the permitting process.

For a well permit, you will need:

- ◆ General information on water needs, property ownerships, location and operator.
- ◆ Design information, including a well driller's report and pump information.
- ◆ A DNR site inspection for local contamination.

IRRIGATION EQUIPMENT

Irrigation equipment dealers can be very helpful in assessing your needs and potential for irrigation. Equipment ranges from large-volume traveling sprinklers which can cover 100 acres in a week to center pivots which water up to 133 acres in two days. The supply of equipment is somewhat limited during the growing season. Most equipment is sold and delivered during the winter and early spring. Keep this in mind as you begin irrigation system planning.

Additional resources:

Your county agricultural agent, equipment dealers, the Department of Natural Resources, the Wisconsin Geological & Natural History Survey

Related publications:

UW-Extension publication—“Irrigation Management in Wisconsin—the Wisconsin Irrigation Scheduling Program,” (WISP), (A3600).