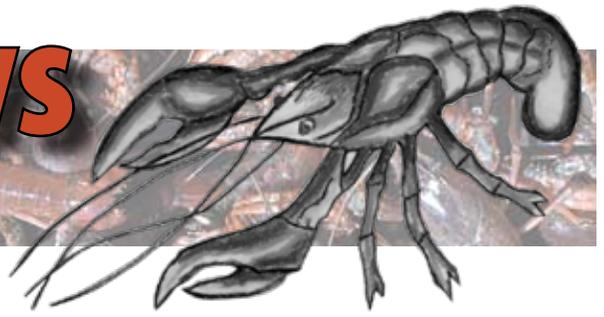


# Crawfish News



June 2010 Volume 3 Number 4

## When Should You Stop Harvesting?

Many crawfish farmers have ceased harvesting operations in the past month, but others are still actively trapping. The record-cold winter delayed the state's crawfish crop by several weeks, and some farmers obtained catches in May and early June that they normally would expect in April and May.

We have received a number of inquiries from crawfish producers who are still actively trapping and want to know if they should cease harvest operations. Their concern is whether or not trapping later into the summer could potentially hurt next season's crop by "overtrapping."

All biological evidence shows it is not possible to over-trap a population of red swamp crawfish. Current harvesting methods are inefficient and cannot remove enough reproductively mature females to negatively affect reproduction for next season's crop.

In our opinion, you can continue harvesting as long as you are making money. When active burrowing by females occurs and the water becomes exceedingly hot, the catch usually will drop to a level that signals it is time to cease harvest. Of course, if the ponds or fields need to be prepared for planting another crop or require renovation, you should stop harvesting when it is convenient to do so.

## Crawfish Forage Planting for 2010-2011 Crawfish Crop Year

Producers who farm crawfish behind a rice crop grown for grain production have their crawfish forage needs satisfied by the established rice crop, so these recommendations are largely for farmers who produce crawfish in ponds dedicated only to crawfish – monocropping or single-crop crawfish operation.

A producer must first decide whether to plant a forage crop or rely on volunteer native stands of weeds and grasses. If the crawfish population density is anticipated to be moderate to high, we recommend that rice or sorghum-sudangrass be planted as forage. Volunteer stands of grasses, sedges, and other weeds are less desirable than planted stands if crawfish populations are high because nonplanted stands of vegetation usually don't provide sufficient food resources.

**Rice.** Rice is the preferred crop to use in a crawfish pond, even when there is no intention of harvesting the grain. It sometimes can be difficult to get a good stand of rice in the heat of late summer, however, so the time of planting is critical. In south Louisiana, the best time to plant rice as crawfish forage only is during the first two weeks of August. Planting rice earlier usually will result in grain formation, an undesirable condition for crawfish, unless waterfowl management takes priority over the crawfish. Planting rice later than mid-August usually will result in reduced tonnage of forage. Medium-grain varieties, in general, may have a slight edge over long-grain varieties in a crawfish pond, and a mixture of rice varieties may be even better than planting a single variety. As general rule, management usually is a more important factor influencing the quality and amount of the forage than the variety of rice selected. "Ecrevisse," the rice variety developed several years ago specifically for use in crawfish-only systems, is not commercially available.

**Sorghum-sudangrass.** Sorghum-sudangrass can be an acceptable substitute for rice, such as when irrigation water is difficult to obtain during the summer and/or when the optimum window for rice planting has passed, but sorghum-sudangrass may be a poor choice if not managed properly.

## Draining Ponds

In last month's newsletter (May 2010), we discussed crawfish stocking and burrowing. This time we will give tips about draining ponds.

When draining your pond at the end of the harvest season or after stocking a new pond or a renovated pond, it is advisable to keep water in the pond until you observe active burrowing by females along the levees.

When active burrowing is observed in ponds that are not overpopulated, drain the pond in stages over several weeks. Drain a portion of the water, hold it at that level for at least several days, and then repeat the process until all water has been removed. Holding the water at a somewhat constant level between water releases may assist females in successfully establishing burrows rather than being stranded "high and dry" before the burrow can be completed.

Also, keep water in newly constructed or renovated ponds with hard, compacted levees, as long as possible to soften the levees to aid the crawfish in burrowing.

Ponds that are overpopulated with crawfish (characterized by having stunted crawfish) should be drained quickly to kill as many potential broodstock as possible.



*Sorghum-sudangrass (left) and late planted rice (right) forages planted in a crawfish monocropping system.*

Like rice, time of planting is critical for sorghum-sudangrass. Sorghum-sudangrass is best planted in the last two weeks of August if the pond is to be flooded in early October. Book your seed early. In past years, sorghum-sudangrass has at times been difficult to obtain.

**Forage Crop Stand Establishment.** When planting forage during summer, having good seed contact with the soil is vital to achieving a good stand and getting that contact requires a prepared seed bed. With rice, avoid water seeding, if possible, because it may be difficult to achieve a good stand in the heat of summer, especially when the pond bottom is not level and contains pockets or “pot holes” that do not drain well. Broadcasting dry seed on a tilled seedbed and covering the seed slightly usually is the best approach, especially when rainfall occurs frequently enough to avoid having to flush (irrigate) the field. If large areas of the pond retain puddles of water from irrigation during August, the water may become so hot that it kills stands of young rice from what is appropriately called scalding. That said, irrigation of the field for rice may be needed if timely rains do not occur after planting. As with any crop, fertilizer needs must be met, and damaging insects, such as army worms, must be controlled. Fields planted with rice for crawfish forage do not have to be as weed free as they do for grain production. Some aquatic weeds are acceptable and may even be desirable as long as they are controlled. See your LSU AgCenter parish extension agent if you need more information on planting crawfish forage crops.

*For more detail on crawfish forage management and planting recommendations, see the Louisiana Crawfish Production Manual.*

## Should I Lime My Ponds?

We are continually asked whether or not crawfish ponds need lime to enhance production.

Agricultural limestone contributes both calcium and carbonate minerals to the soil and water. Crawfish need calcium for shell formation.

Some believe harvesting crawfish from ponds over the years depletes the water and soil of calcium – leading to reduced crawfish production. But the calcium available in the soil and water in crawfish growing areas of Louisiana is many

times higher than required by crawfish. In addition, crawfish obtain calcium from the food they eat.

Therefore, we do not recommend that crawfish ponds and rice fields used to grow crawfish be limed unless a water and soil analysis specifically shows it is needed for the forage being planted. If sufficient calcium and carbonates are present in the soil to meet the needs of the forage crop being grown, it will satisfy the calcium needs of the crawfish. This also applies to ponds that use volunteer native stands of weeds and grasses as crawfish forage.

Liming crawfish ponds when not needed could have negative consequences to the cultivated forage, particularly rice. Rice is a plant that grows best in acidic soils. Adding agricultural lime in excess of what is considered optimal for the rice crop will reduce nutrient availability to the plants, and grain yield and forage supplies could be reduced.

Contact your local LSU AgCenter extension office for instructions on collecting and submitting water and soil samples to the LSU AgCenter’s Soil Testing and Plant Analysis Laboratory for analysis. The cost is \$10 per sample. County agents or crawfish specialists with the LSU AgCenter can assist you in interpreting the findings and making a decision to lime or not.

For more information on this subject, read the article “Should I Lime My Crawfish Ponds” on the LSU AgCenter crawfish website: [www.lsuagcenter.com/en/crops\\_livestock/aquaculture/crawfish](http://www.lsuagcenter.com/en/crops_livestock/aquaculture/crawfish)

## Importance of Record Keeping

A record-keeping system is needed to generate financial reports and production records. Good records can be an important resource when dealing with government crop programs or litigation.

Financial reports that give the manager vital information about the business are the most important function in record-keeping. Through financial statements, a manager can determine profits (or losses), the feasibility of the business plan, the accumulation of net worth in the business and the profitability of each part of the business. Financial reports

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consist of income statements, balance sheets, cash-flow statements and enterprise reports.

A good records system allows the manager to see what is going on in the business, decide what is working and what is simply costing too much.

A good example in crawfish farming involves multiple fields within an operation and the decision process to allocate harvesting and pumping resources among the various fields. Reviewing and evaluating production and financial records during the year is critical to keeping costs as low as possible while increasing income. Producers often don't know how much has been spent in total or by item (bait, fuel, supplies, etc.) and therefore cannot stop wasteful practices.

Financial planning for the coming year is needed to decide if sufficient net income will be generated to meet business goals. As prices paid and received change, the ability to pay bills on time and service debt can change. A projected cash flow will show the feasibility of the business plan.

Production records and reports contain information about the technology used in production. It's important to maintain records of pumping time, traps used, bait (type and amount), water quality information, crawfish production time (hours, labor), results of grading and sales income per acre and per day or month. Careful analysis will identify the strengths and weaknesses of the production process. Future management decisions concerning forage, water, population dynamics, harvesting strategies and marketing are easier and more accurate if good records are kept. Correction of problem areas results in increased production efficiency.

Also, when a crop is lost because of a natural or man-made disaster, records are needed to prove losses.

Records can be kept either in handwritten ledgers or by computer. Either method takes about the same amount of time to record information. The LSU AgCenter's Cooperative Extension Service has several publications that can be used to form a basis for your own record-keeping system. These include the "Louisiana Farm Record Book" and the "Louisiana Farm Inventory Book."

A computer software program allows reports to be prepared much more easily and quickly, however. More experienced computer users may prefer to use spreadsheet programs rather than prepackaged business management software.

Dr. Kurt Guidry, an LSU AgCenter agricultural economics specialist, developed a "Crawfish Production and Marketing Record Keeping System" that uses Microsoft Excel spreadsheet software. The program provides crawfish producers with a method of tracking crawfish production, sales and expenses through the production season. The software program is free, and you can obtain a copy by contacting Guidry at [kmguidry@agcenter.lsu.edu](mailto:kmguidry@agcenter.lsu.edu) or 225-578-4567.

Contact your parish office of the LSU AgCenter's Extension Service for more information about financial planning for farming operations.

*This section was reprinted, with a few additions, from the Louisiana Crawfish Production Manual.*

**Burrow Ecology.** Red swamp and white river crawfish dig simple (unbranched), nearly vertical burrows, usually 40 inches or less in depth. Burrows serve as refuges from predators and provide moist or humid environments necessary for crawfish to survive through dry periods. Louisiana crawfish have evolved over millions of years to reproduce within the protection of their burrows. Most burrows are built at night and often require several days to complete. Crawfish burrows are usually dug by a single individual, and the burrow diameter is determined by the size of the crawfish. The burrow extends downward into a chamber slightly larger than the diameter of the tunnel.

Water levels in burrows vary with the moisture conditions in the soil. Free water at the bottom of the burrow is more often associated with "trapped or perched" water than with water that seeps into the burrow from the water table. Free water must be present in the terminal chamber of the burrow for the females to successfully spawn and hatch eggs.

Walls of the burrow and terminal chambers are extensively worked by the crawfish, possibly to ensure a good seal with the surrounding environment. The terminal chamber normally contains wet muddy slush when water is not present. This wet slush serves as a humidifier.

The entrance of the completed burrow is eventually closed with a mud plug. A mud chimney or stack of the soil removed during excavation often is present with newly constructed burrows. Burrow entrances at the water's edge often are associated with natural cover, such as vegetation or woody debris. Over the course of the summer, weathering and covering by vegetation may make the burrow entrance undetectable.

Burrows usually contain a single female, or sometimes a male and female together, but occasionally they may contain additional crawfish. Successful survival and reproduction within the burrow depends on many factors, such as the



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**Additional information** on crawfish aquaculture is available on the LSU AgCenter Web site at

**[www.lsuagcenter.com/en/crops\\_livestock/aquaculture/crawfish](http://www.lsuagcenter.com/en/crops_livestock/aquaculture/crawfish)**

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severity and length of the dry period, characteristics of the burrow (such as depth, soil type and moisture) and health of the animal.

Immature crawfish and crawfish forced to burrow by rapidly dropping water levels may construct shallow burrows that will not have sufficient moisture for survival during lengthy dry periods or drought. Soil types with limited clay content or soil with very high clay content that cracks when it dries also may limit crawfish survival while in burrows.

Once sealed in, crawfish are confined to the burrow until the hard plug that seals the entrance is sufficiently softened by external moisture from flooding or rainfall. Pond flooding, especially when associated with heavy rainfall, facilitates the emergence of crawfish from burrows.

## LSU AgCenter Crawfish News

**The Louisiana Seafood Bible: Crawfish.** Former LSU AgCenter fisheries extension specialist and professor (retired) Jerald Horst and his wife Glenda have authored a 224-page book titled "The Louisiana Seafood Bible: Crawfish" (ISBN 1589807693), Pelican Publishing Company, released February 2010 (\$25, hardcover). The book discusses the history of the crawfish industry, crawfish biology, the wild fishery and farm-raised industries, processing, and the nutritional aspects of crawfish. More than 80 recipes are provided, and the book is filled with color photographs. The book is available from Barnes and Noble or can be ordered from any number of sources on the Internet.

**Upcoming Crawfish Newsletters.** Following this June newsletter, we have an eight-page newsletter later this summer (early August) and four-page newsletters in September and November.