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## NCRAC Overview

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[From: <http://www.ncrac.org/Info/overview.htm>]

**The North Central Regional Aquaculture Center (NCRAC)** was formed in February 1988. It is one of five regional aquaculture centers administered by the U.S. Department of Agriculture's Cooperative State, Research, Education, and Extension Service. Programs of NCRAC are jointly administered by Michigan State University and Iowa State University. The Office of the Director is located at Michigan State while the Associate Director's Office is at Iowa State.

The mission of the Regional Aquaculture Centers is to support aquaculture research, development, demonstration, and extension education to enhance viable and profitable U.S. aquaculture which will benefit consumers, producers, service industries, and the American economy.

NCRAC is an administrative unit that relies on leaders in the aquaculture industry through an Industry Advisory Council for direction in its programs. A Technical Committee works with the Industry Advisory Council to formulate programs on priorities. Regional programs are meshed with activities of other centers to avoid duplication. Teams of aquaculture specialists from midwest universities, public agencies, and the private sector develop and implement projects to solve priority problems. A Board of Directors oversees administration and management of NCRAC's programs.

NCRAC serves 12 states in the heartland of America: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin. This region is home to over a quarter of the U.S. population, a large fraction of which are concentrated in major metropolitan areas such as Chicago, Detroit, Milwaukee, and Cleveland. The region's geography spans approximately 800 miles south to north and over 1,000 miles east to west. Aquaculture in the region is characterized by great diversity with over 50 different species of aquatic animals being cultured by more than 1,000 producers of food fish, baitfish, and fish for stocking into recreational water bodies. These producers are themselves highly diverse, ranging from well established producers who have made a significant capital investment and are interested in ways of reducing production costs while increasing output to those who could be classified as newcomers, who need training, capital, and an awareness of the potentially high risk, high investment, and low returns that most producers encounter.

Since its inception the Center has concentrated on funding projects for emerging species that have good potential as food fish for production in the North Central Region, such as yellow perch, walleye, and hybrid striped bass. In addition, NCRAC has supported projects on sunfish, salmonids, crayfish, baitfish, aquaculture wastes and effluents, aquaculture drugs, and more recently tilapia. All funded projects are directed at high priority industry needs that include development of new technologies and application of research findings that will benefit diverse constituencies. Therefore, research and extension activities have been integrated into all funded projects to develop and implement educational outreach materials and programs.

Every year the Center prepares an annual progress report that contains reports for all ongoing, or recently concluded, NCRAC-funded projects. These reports highlight accomplishments and impacts of the various projects that the Center has funded. All of these annual reports are available at NCRAC's Web site. A brief synopsis for some of the projects follows.

### **Regional Aquaculture Extension Program**

The Extension project is NCRAC's window for information developed by NCRAC research projects. Information is transmitted using the long established lines of communication in the State Cooperative Extension Service (CES) as well as by new technologies such as the Internet. A network of aquaculture extension specialists has been established among states served by NCRAC. These individuals coordinate development and distribution of educational materials on all phases of aquaculture ventures, and conduct training workshops for extension colleagues and members of the industry. Regional networks of each center in the U.S. are also linked to facilitate the flow of aquaculture information nation-wide.

**Hybrid Striped Bass**

Hybrid striped bass are offspring of a cross between white bass native to the region and striped bass from states in coastal areas. The hybrid is a fast growing fish with high quality meat. The project participants have developed procedures for reliable short-term storage (refrigeration) and long-term storage (cryopreservation) of striped bass semen. They have also developed out-of-season spawning techniques and have established facilities for the intensive rearing of larval white bass.

**Walleye**

Walleye is a popular food fish in the North Central Region. It has not been widely cultured in private industry. Where it has been cultured, fertile eggs have been obtained from wild stocks of fish. Scientists on this project are working on control of the reproductive cycle for out-of-season spawning to level out the seasonal flow of product to market, genetic aspects of brood stock development, and other problems facing the commercial production of this species. Much of the NCRAC-funded research has been recently published in a 415-page state-of-the-art Walleye Culture Manual. The manual is available for \$25.35 which includes shipping and handling. For information on how to order the manual contact the NCRAC Publications Office at Iowa State University or visit the Center's Web site.

**Yellow Perch**

Yellow perch are an important food fish in markets of much of the North Central Region. Commercial harvests from the Great Lakes and other sources are diminishing. Commercial feasibility of raising food-size perch using a variety of culture systems and best available formulated feeds as well as best intensive tank and pond-rearing practices for large-scale culture of fry to fingerlings are being evaluated. Other research deals with performance comparisons of normal diploid versus triploid fish.

**Sunfish**

Little effort has been made in the past to develop culture technology for growing these sport fish for food. This is because of legal constrictions preventing the sale of sport fish. However, some states are removing restrictions. The species tend to put a lot of energy into mating activities and production of numerous offspring. Work has been undertaken to control reproduction and promote rapid growth of several species and their hybrids using different cultural practices and low cost, high performance diets.

**Salmonids**

Members of the salmonid family, including various species of trout and salmon, are among the principal commercially cultured fishes in the North Central Region. This project is designed to improve production in salmonid aquaculture through work on genetics and development of a regional brood stock, improved diet formulations to reduce pollution from culture facilities, and defining the maximum loading density that trout will tolerate without significant detrimental impacts.

**Crayfish**

Crayfish for human consumption is a large U.S. aquaculture industry. Most production and consumption take place in the South and is a seasonal crop from December through May. However, in the midwest, growth of native crayfish occurs during the summer and fall, thus possibly presenting a window of opportunity for aquaculturists in the region. Evaluation of the crayfish industry, life histories of native species and performance evaluations of several promising indigenous species have been undertaken.