

Best Management Practices for Hybrid Striped Bass Culture

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Duration: June 2010 to November 2012
Funding Source(s): Iowa DNR
Goals and Objectives:

- Perform literature search on extensively-reared hybrid striped bass (HSB) and review past hatchery records to determine relationships between rearing techniques, survival, and water quality.
 - Identify best management practices for movement of hybrid striped bass fry to Iowa's hatcheries.
 - Identify best management practices for culturing hybrid striped in plastic-lined and earthen ponds in Iowa.
 - Compile, analyze, and publish in federal aid documents and appropriate journals the best management practices for rearing hybrid striped bass in earthen and plastic-lined ponds
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Progress:

In addition to the field portion of this study, we also conducted a Hybrid Striped Bass Survey in 2011. The survey was sent to hatcheries throughout the US with questions pertaining to physical, chemical, biological, and logistical components of HSB production. The goal of this survey was to 1) identify existing production practices, 2) examine the success of each technique, and 3) determine the best management practices for culturing phase-I and II HSB in Iowa hatcheries. Survey results were compiled and compared to values published in literature. This information, as well as previous production experience at Mt. Ayr, was used to guide our HSB culture operations starting in 2011 and 2012..

The 2012 culture season focused on three experimental studies. In the first study, we tested the difference in production of two different crosses of hybrid striped bass (palmetto and sunshine bass) in plastic-lined ponds at the Rathbun Research Facility. Similar to 2011, the second study focused on the need of organic fertilizers in earthen ponds at the Mt. Ayr Hatchery. However, the 2012 study at Mt. Ayr had a greater stocking densities and a different hybrid striped bass taxa than in 2011. The third study was conducted at the ISU horticulture station and focused on determining an appropriate stocking density for hybrid striped bass in earthen ponds. Palmetto bass were flown in from Kansas on May 15 while sunshine bass were shipped in from Keo-Fish Farms, AR two days later. Fry were stocked at 160,000/acre, 4-6 days after pond flooding at both the Mt. Ayr and Rathbun facilities. Stocking densities at the ISU horticulture station were 80,000/acre and 160,000/acre. Due to high ammonia levels within ISU source water, we began filling ponds 8 days prior to stocking in an attempt to dissipate excess ammonia.

Although there is still a question concerning whether or not there are production differences between palmetto and sunshine bass, results from the 2012 culture season indicate that sunshine bass may grow longer and heavier during phase I. However, increased growth rates during phase I is likely attributed to higher mortality rates of the sunshine bass. Because both crosses of hybrid striped bass performed similarly during phase I culture, other considerations, such as fry or brood stock availability or post-stocking survival and growth of juveniles and adults, may dictate which cross the IDNR chooses to culture for sport fishery enhancement.

Funding to complete this study was removed prior to data analysis of the Mt. Ayr Hatchery experiment; excessive ammonia within ISU source water resulted in all fish being lost during the stocking density study. We hypothesize that high ammonia within our well water is directly likened to local drought conditions. Without the ability to remove ammonia from the water along with similar drought conditions forecasted, future research is on hold within ISU ponds.

Conclusions and Recommendations:

Final analyses of the 2012 culture season will be completed in 2013 with related publications published.