



IOWA DEPARTMENT OF NATURAL RESOURCES

Sport Fish Restoration Research Findings

Evaluation of the Impact of Common Carp on an Intensively
Managed Largemouth Bass, Channel Catfish, and Panfish
Fishery



Project Duration: 1992 - 1996

Location: Swan Lake, Carroll County

Small Impoundments

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Evaluation of the Impact of Common Carp on an Intensively Managed Largemouth Bass, Channel Catfish, and Panfish Fishery

The author evaluated the effects of an unanticipated Common Carp introduction on a renovated fishery in West Central Iowa. Swan Lake is a 112 acre man-made lake with a maximum depth of 14 feet and mean depth of 5.6 feet. An educational center is located on the lake as well as an enclosed fishing pier. The fishery renovation was completed in 1985 and then stocked with Largemouth Bass, Bluegill, Channel Catfish, Grass Carp, and Black Crappie. Common Carp entered the lake in 1990 when water levels in the outlet structure rose to a level that allowed Common Carp to jump into the lake.

Goals

- Recreational use, water quality, aquatic vegetation, and sport fish populations were affected by the addition of Common Carp to Swan Lake's fishery. These changes were documented 1987 - 1996.



Results

- Increases in total suspended solids were significant ($P < .05$) 1993 – 1996 and mean secchi depth decreased by 50% to .23 feet in 1996.
- Aquatic vegetation was chemically treated in 1987, 1988, and 1989 to improve angler access. During this time period water clarity was $> .64$ feet. At this point, Grass Carp were not adult size and Common Carp had yet to enter the lake.
- After a reduction in aquatic vegetation biomass blue-green algae blooms were chemically treated in 1993.
- Overall fishing pressure decreased, species preference changed, and fish biomass shifted between species in 1991 - 1996.
- Boat angling decreased and shoreline angling increased after Common Carp were found in the lake.

- Pressure increased for Bluegill and Crappie while decreasing for Largemouth Bass. Largemouth Bass and Channel Catfish catch rates decreased while Bluegill and Crappie catch rates increased.
- Reductions in sport fish biomass were documented after Common Carp entered Swan Lake. Common Carp biomass dominated the fishery in Swan Lake by 1996.



Conclusions

- Renovate the fishery and install a new outlet structure to keep Common Carp out of Swan Lake.
- Chemical treatment of aquatic vegetation may be needed in newly renovated small shallow lakes until the lake ages or there is no public outcry for aquatic plant control.
- Allow plants to colonize some areas of the lake to prevent harmful algae blooms.
- An established sport fishery in a shallow lake can be dominated by Common Carp within three years of introduction. Quick action should be taken to remove Common Carp and reestablish sport fish populations.