

## State of the Watershed Report – Seine River Watershed – Fisheries

### Background

Fishery resources are being impacted to various degrees by human activities and natural occurrences in all agro-Manitoba watersheds and the Seine River watershed is no exception. The watershed itself is fairly void of fish-barring waterways with the exception of the Seine River itself along with some man-made drains.

Historical fishery/stream inventory data in combination with recent stream and drain inventory data provide a snapshot of the state of the fisheries in this watershed. In particular, the 2005 Seine River Survey and Restoration Planning Project, which was funded by the Fisheries Enhancement Initiative and coordinated by the Seine Rat River Conservation District, provided some current information on a number of stream parameters affecting the health of the river including some possible mitigation solutions.

### Existing Fishery Resources Conditions

As many as 32 different fish species have been documented in the Seine River during high flow years when spawning runs of Red River fish are able to access the Seine River via the Seine River Diversion. Also, several fish species can enter the mouth of the river in proximity to the Red River. Species that have been documented in the Seine River system include: bigmouth buffalo, black bullhead, black crappie, blacknose dace, blackside darter, brook stickleback, brown bullhead, burbot, carp, central mudminnow, channel catfish, common shiner, emerald shiner, fathead minnow, freshwater drum, golden redhorse, goldeye, goldfish, johnny darter, longnose dace, northern pike, pearl dace, quillback sucker, rock bass, sauger, shorthead redhorse sucker, spottail shiner, tadpole madtom, trout perch, walleye, white sucker, and yellow perch. *It should be noted that the bigmouth buffalo is presently listed as a special concern under the federal, species at risk act.*

It appears that most fish species including young of the year find their way back to the Red River prior to low water conditions and subsequent poor aquatic habitat conditions that arise in the summer along mid and upper reaches of the Seine River. Seine River reaches in close proximity to the Red River are no doubt utilized by Red River fish species more frequently throughout the open water season.

In contrast to spring fish presence, many fewer summer resident species are found in mid and upper reaches of the Seine River, particularly in lower flow years. Most of the summer resident species are fish species such as: bullheads, sticklebacks, suckers, fathead minnows, and central mudminnows that have a higher tolerance to degraded water quality than other fish species. It should be noted that summer kill conditions have been also reported for fish species along mid and upper reaches of the river in previous years.

This is due to low oxygen conditions and excessive water temperature--indicating an aquatic system in stress.

Recent fishery inventories that have been done on drains in this watershed during the spring indicate the presence of a few tolerant species. It is expected that most of these drains do not provide suitable habitat for fish presence past spring due to low water conditions.

### Issues/areas of concern

As presented in the 2005 Seine River Survey and Restoration Planning Project report, the aquatic and fishery health of the Seine River is being greatly impacted by excessive nutrient loading from agricultural, municipal, and residential sources.

Furthermore, degraded riparian buffer zones and associated drainage networks reduce the buffering of nutrient and sediment loading into the river from nutrient loading sources.

Reduced flow in the natural river section due to the Seine River Diversion also greatly reduces the quality of aquatic habitat for fish species. Several potential fish migration blockages have been identified along the river with the floodway siphon and the Seine River Diversion (both ends) being considered major impediments to passage of fish running upstream from the Red River.

The recent assessment also indicated a general lack of spawning habitat for gravel/cobble spawning fish species.

### Data Gaps/Future Considerations

Winter oxygen readings are required along the Seine River to determine the extent of winter kill conditions. The most indicative readings can usually be obtained in mid-February.

### Management Recommendations

Follow the recommendations of the 2005 Seine River Survey and Restoration Planning Project report--including the best management practices recommended. As far as fishery concerns go, it would be essential to address water quality and quantity issues along the river prior to addressing fish passage issues. Water quality and quantity problems would have to be improved along the river system in order to sustain an increased fish presence that would be expected from mitigating major fish-passage blockages sites.