

APPENDIX G – DFO HABITAT MAPS FOR SHANNON CREEK

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## **BACKGROUND AND FREQUENTLY ASKED QUESTIONS FOR FISHERIES AND OCEANS DATA REPORT**

Milani, D.W. 2013. Fish community and fish habitat inventory of streams and constructed drains throughout agricultural areas of Manitoba (2002-2006). Can. Data Rep. Fish. Aquat. Sci. 1247: xvi + 6,153 p.

### Background:

After the creation of the Province of Manitoba in 1870, networks of surface ditches were constructed in several areas of wetland and wet prairie in the south to increase arable lands, facilitate rapid spring runoff, and prevent flooding of crops during heavy summer downpours. The constructed channels often drained fish bearing wetlands used by many large bodied fish seasonally for spawning and rearing, and providing year round habitat for forage fish. The increased speed of runoff from draining these wetland areas often resulted in downstream flooding, and the continuation of drainage works to include channelizing and diking natural waterways to increase flow capacity. Many of these drains continue to be utilized seasonally by fish, and some perennial drains provide permanent habitat for forage fish, and often for large bodied fish species as well.

While the Governments of Canada and the Province of Manitoba recognize the important socio-economic benefits derived from well-drained agricultural land, both governments also share the mandate to conserve and protect water resources and fish habitat. In 2001, the Manitoba Drain Maintenance Committee (DFO, Manitoba Conservation and Water Stewardship) was convened to gain a better understanding of the role of drains as fish habitat and to document the mechanical processes required for effective drain maintenance.

This report documents the results of five years of field surveys (2002-2006) and summarizes the data and methods used to develop the first iteration of classified fish habitat maps for the study area. The classified fish habitat maps break the habitat of agricultural waterways into 5 habitat types, A,B,C,D or E, based on gross measurements of fish habitat complexity and the fish species presence (Commercial, Recreational, Aboriginal or SARA listed fish species captured or expected vs. Forage Fish species captured or expected vs. no fish captured or expected).

Generally A and B habitat types support Commercial, Recreational, Aboriginal or SARA species with Type A habitat being complex and Type B habitat being simplified. Habitat Type C and D drains support Forage Fish species with Type C habitat being complex and Type D habitat being simplified. Habitat Type E drains can be simple or complex but provide indirect fish habitat.

The maps provide information that can be used for a quick risk assessment for the potential of impacts to fish and fish habitat in Agro-Manitoba from a variety of works that occur in and near water, not just drain maintenance. While the maps can help to inform DFO and other regulators of potential risks, they cannot anticipate all situations. Site specific information should always be used in conjunction with the maps to make informed regulatory and management decisions.

### Frequently Asked Questions:

Q: My project is on Type A habitat, does that mean I can't do it?

A: While Type A habitat is generally the highest quality fish habitat, projects will be considered based on the type of work proposed, the scale of the project, and site specific information. Generally if your work is not covered by a DFO Operational Statement or other standard or guideline then you should talk to DFO about site specific assessment and review on Type A habitats.

Q: What if I disagree with the assessed habitat type on a stream and feel that it should be a different habitat type?

A: The habitat classifications have been completed based on large scale assessments of habitats and fish presence/absence. Should site specific information and more detailed information on a watercourse or watershed lead to the conclusion that the habitat type should be different, then that information should be presented to DFO and other regulators in your environmental assessment when you are seeking approvals. DFO will make management decisions based on the information that is available. The maps have been labeled as "Draft Data subject to ongoing review" to highlight to users that the information on the maps could change.

Q: Are Type A habitats considered pristine?

A: Generally Type A habitats have the best combination of stream and riparian habitat characteristics to provide the highest quality fish habitat in Manitoba. Many streams with Type A habitat have been impacted and degraded by human activities, often with reduced water quality from nutrient and sediment runoff, and from dams, perched culverts and water management issues. If these issues are addressed however these habitats are often very resilient and will recover their productive capacity.

Q: Does DFO have any concerns about works in Type E habitats:

A: Generally Type E watercourses provide water and nutrients to downstream portions of the watercourse but fish don't live there directly. Pollution and sediment can run down a Type E watercourse and impact fish and habitat downstream and need to be properly considered and managed. Similarly projects that remove all water from a type E (e.g. dam and pump) or projects that greatly increase flows in a Type E (e.g. a water diversion) can greatly affect fish use in the watershed, and should be considered carefully. Generally projects such as a drain clean out, and culvert installation and maintenance can occur in Type E watercourses following best management practices. DFO is working on a Standard Advice document for drain cleanouts in Type D and E habitats.

Q: The watercourse I am interested in is not covered by any of these maps. How do I know the habitat?

A: This inventory program only covered the parts of Manitoba that are currently used for agriculture, approximately 20% of the province. Watercourses outside of these areas were not inventoried by this program. The methods used in this assessment program can be applied to areas outside of those assessed in Agro-Manitoba to determine habitat type. Caution should be used if you wish to apply this assessment methodology outside of Manitoba, as several other provinces have their own habitat classification and mapping methods and requirements (e.g. Alberta Codes of Practice maps).

Q: The drain that I am interested in is not drawn on the map which shows other drains around it. How do I get the habitat classification?

A: Since drain construction is a dynamic process in Manitoba, the base electronic maps are not always up to date. Certain drains can be missed on the maps (e.g. the floodway around the town of Rosenort on the Morris River) and have not been classified. To be cautious the unmapped waterway should be considered the same classification as the watercourse it flows into unless a qualified aquatic environment specialist (e.g. a fisheries consultant) has good information to decide otherwise or if you receive guidance on your project from DFO.

Q: Will the maps be updated with new information?

A: While it is the intention of DFO to update maps periodically there is no fixed schedule for this. The maps have been labeled as "Draft Data subject to ongoing review" to highlight to users that the information on the maps could change. If maps are updated they will likely be released in a new Data or Technical Report, or potentially through the provincial Manitoba Land Initiative (MLI) website. DFO is looking to partner with the Province of Manitoba to have maps placed on the MLI website.

Q: How will these maps be used with the amended Fisheries Act?

A: These maps are useful tools for making quick risk management decisions. They may be referred to in future guidelines, Operational Statements or Standards that are made for Manitoba. Regulatory decisions will be made based on several factors including the fish species, habitat sensitivity, and the type and scale of project being proposed. Site specific information and factors will always be used to inform DFO's regulatory decisions.

Q: How do I know where aquatic species at risk are on this map?

A: While fish species listed under the Species At Risk Act (SARA) as threatened or endangered were considered as indicator species during this inventory, the list of aquatic species at risk is under constant review. Please visit the SARA registry website for details and recovery plans for distribution maps. If an aquatic SARA species is known or suspected in a drain then the habitat of that drain should be considered Type A until site specific review can be completed and information provided by the DFO Fisheries Protection Program and/or Species at Risk Program.

Q: I wish to use the raw data in the Excel spreadsheet, and the GIS shape files for the habitat classifications. How should I cite this information?

A: All of the data tables and classified line segments are found in the data report. The original report should be cited if you use the shape files or Excel spreadsheet to make maps in your GIS, or to present that information in a report. You should indicate that it was adapted from Milani, D.W. 2013. Fish community and fish habitat inventory of streams and constructed drains throughout agricultural areas of Manitoba (2002-2006). Can. Data Rep. Fish. Aquat. Sci. 1247: xvi + 6,153 p.

Q: I have downloaded some of the shape files but they are not displaying properly on my GIS. What could be the problem?

A: Be sure to download the "Project File" or .apr file, and all five of the files associated with each of the shape files. Each file (e.g. indicator\_species, non\_indicator\_species, no\_catch, des\_lines etc.) has a series of similarly named files with different formats including .dbf, .sbn, .sbx, shx, and .shp. Place all the files into the same registry as all are needed to properly display the data. Then when you open the .apr file and point to all the included .shp files when prompted the map is built and displays properly.

The ESRI files that include "basemap" in their name do not need to be downloaded but do provide the study area as "clip" of the entire province. All of the "basemap" ESRI files are public but will not likely be required if inputting the shape files into an existing GIS.

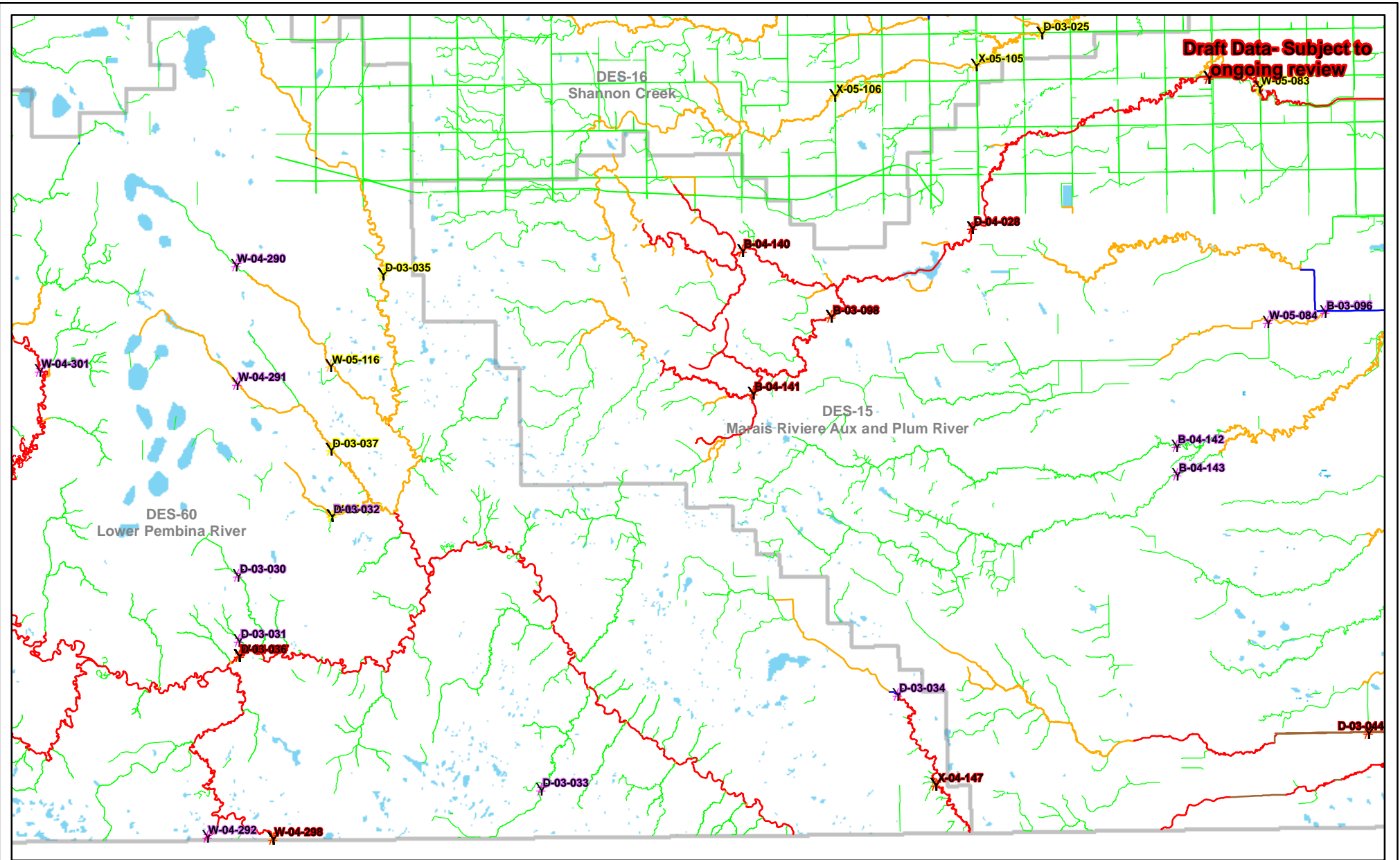
Note: The files are geo-referenced in decimal degrees. If you are using UTM referencing you will need to convert the files from decimal degrees to UTM coordinates (NAD 83, Zone 14).

Q: Our GIS guy is going to add the DFO habitat map layers to Google Earth for us but he had a question about one of the data folders called DES\_Line\_Data which contains three categories called "Type", "New Type", and "Type 08". He was assuming they refer to the new and old habitat classifications for the watercourses and was wondering which one should he use?

A: To properly display the Type A to Type E classifications have your GIS specialist input the DES lines, the NHN (NTS) lines and the NHN polygons. In each of these data sets the field to the far right side of the tables displays the most recent classification (A to E). Each of these unique values has to be assigned a colour; my colours used in the data report were A= Red, B= Brown, C= Orange, D= Blue, E= Green. Do that for each data set then stack the data so that it displays properly (i.e bottom layer = NHN polygons, next layer NHN lines, then top layer = DES lines).

Q: I have found some typo's in the report, or want to suggest changes to stream classifications based on site specific assessments. Who should I report this to?

A: Please direct your comments in an email to [Todd.Schwartz@DFO-MPO.GC.CA](mailto:Todd.Schwartz@DFO-MPO.GC.CA) and I will record them. Should significant mistakes be brought to our attention we will add an errors/errata page to the report or otherwise update it on WAVES (the DFO library site).



**Draft Data- Subject to ongoing review**

062G07	062G08	062H05
062G02	062G01	062H04

**Habitat Classification**

- A
- B
- C
- D
- E

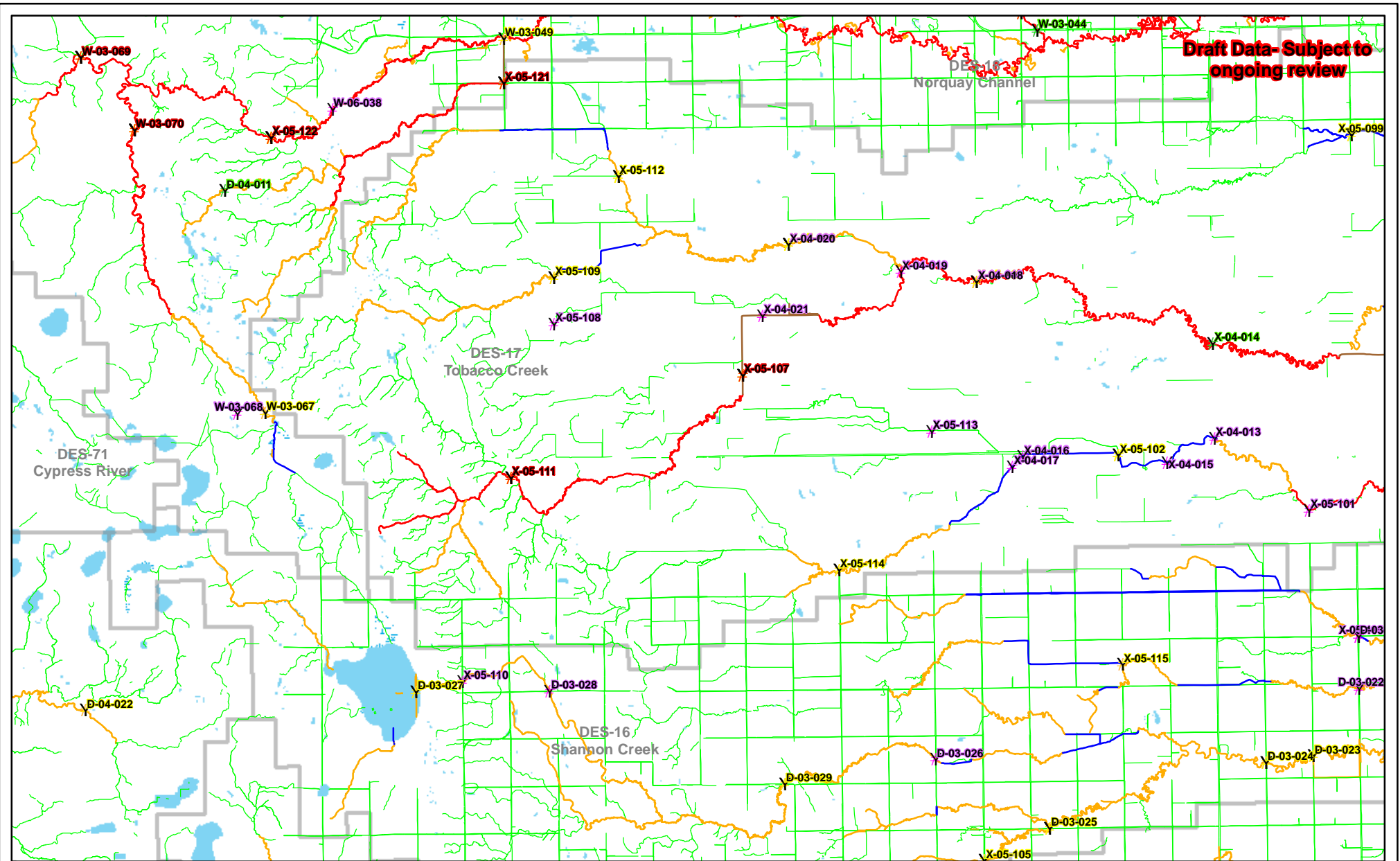
**Fishing Results**

- Indicator Species
- Non-Indicator Species
- No Catch
- No Fishing Effort

**Appendix 9**  
**Sampling sites, fish captures and habitat classification**  
**of streams and constructed drains throughout**  
**agricultural areas of Manitoba (2002 – 2006)**

**062G01**

Produced April 2012



062G10	062G09	062H12
062G07	062G08	062H05
062G02	062G01	062H04

**Habitat Classification**

- A
- B
- C
- D
- E

**Fishing Results**

- Indicator Species
- Non-Indicator Species
- No Catch
- No Fishing Effort

**Appendix 9**  
**Sampling sites, fish captures and habitat classification**  
**of streams and constructed drains throughout**  
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**062G08**

Produced April 2012