Vermillion Reservoir Telemetry and Hoopnetting Study 2016-17 (15-016)

Intermountain Sport Fish Enhancement (I.S.F.E.)

Report Prepared by:

Jonathan Stephens,

Regional Fisheries Biologist

Sustainable Development – Wildlife and Fisheries Branch

Intermountain Manitoba

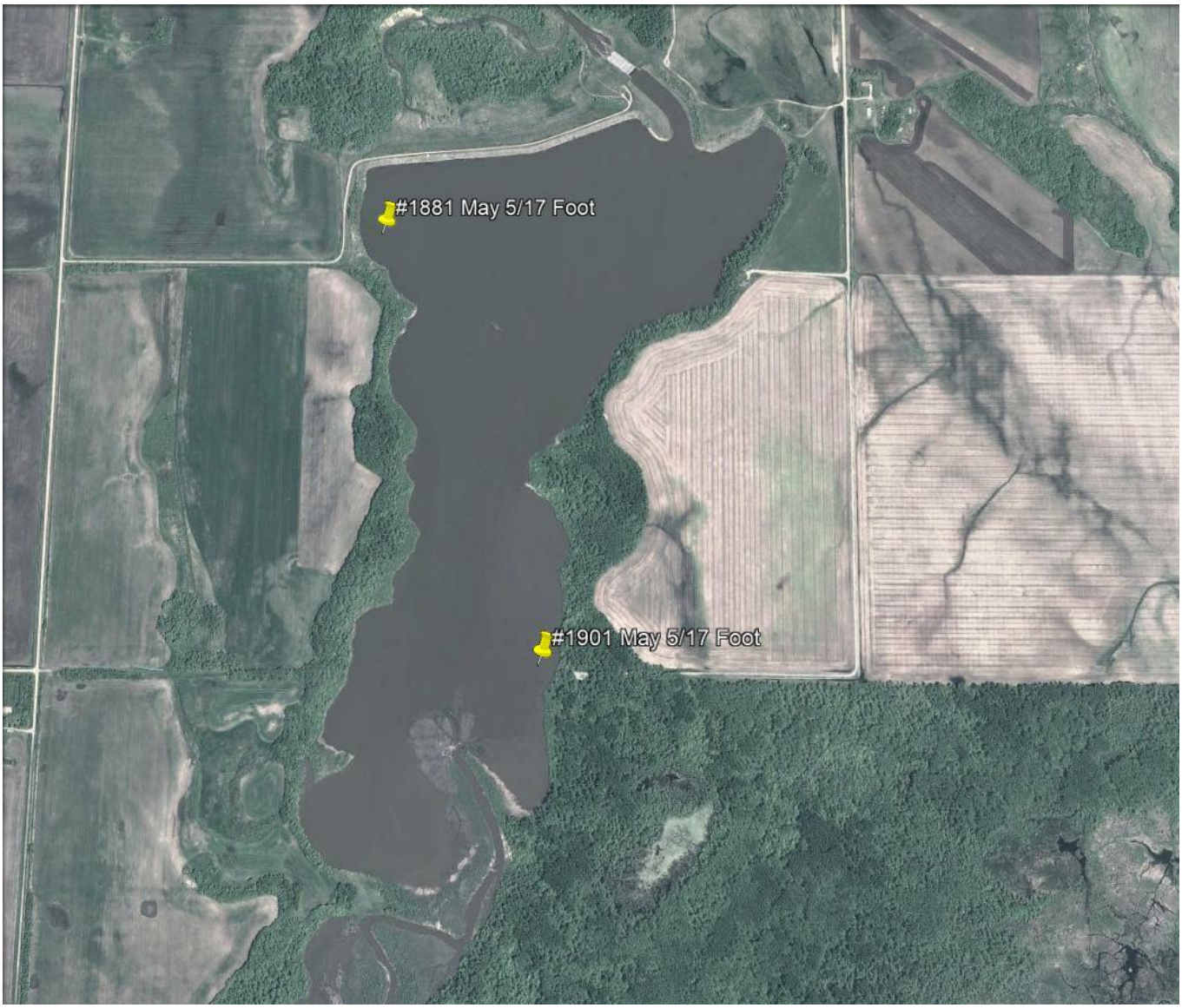
Introduction

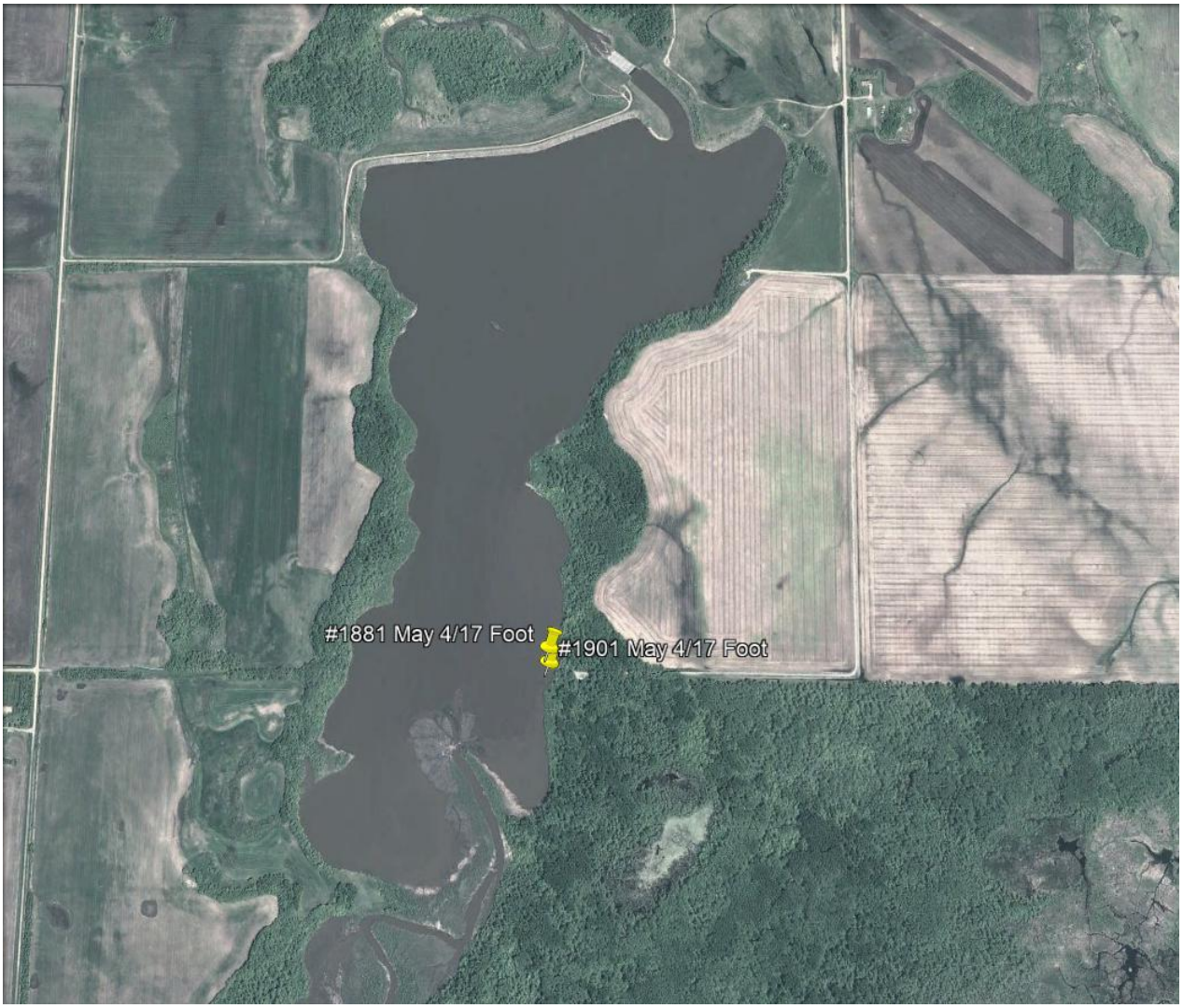
Since 2011, Intermountain Sport Fishing Enhancement Inc. (ISFE) has been studying Vermillion Reservoir and Lake Dauphin gathering biological and limnological information through support from the provincial Fisheries Enhancement Fund (FEF) and Fish and Wildlife Enhancement Fund (FWEF). The focus of the effort in Vermillion Reservoir has been on determining whether the walleye introduced by stocking fry and fingerlings have established a sustainable population in the reservoir.

In 2016-17 ISFE in cooperation with Sustainable Development- Wildlife and Fisheries Branch (SD-WFB), continued hoopnetting and radio telemetry efforts to acquire data needed to manage fisheries resources. Attempts were made to capture and track walleye over a wide range and variety of habitats and locations. Conclusions can then be made on walleye movements and population dynamics between zones, throughout the reservoir and Vermillion River.

Results

Detailed results of the hoopnetting in 2016 and 2017 can be found in the Appendix and show the date and GPS location where a fish was tagged and subsequent locations where that fish was tracked to. Nine of the walleye tagged in previous years still had active radio telemetry tags, of which four were located and tracked in 2015. In most cases Walleye appeared to move throughout the lake, with a few staying in the vicinity of where they were tagged. Maps below show the 2015 location of the 4 walleye that were found and where they moved from. This information overtime will help to determine whether walleye seemed to exhibit fidelity to a particular tributary for spawning.


#1881 May 5/17 Foot
#1901 May 5/17 Foot


#1881 May 4/17 Foot
#1901 May 4/17 Foot

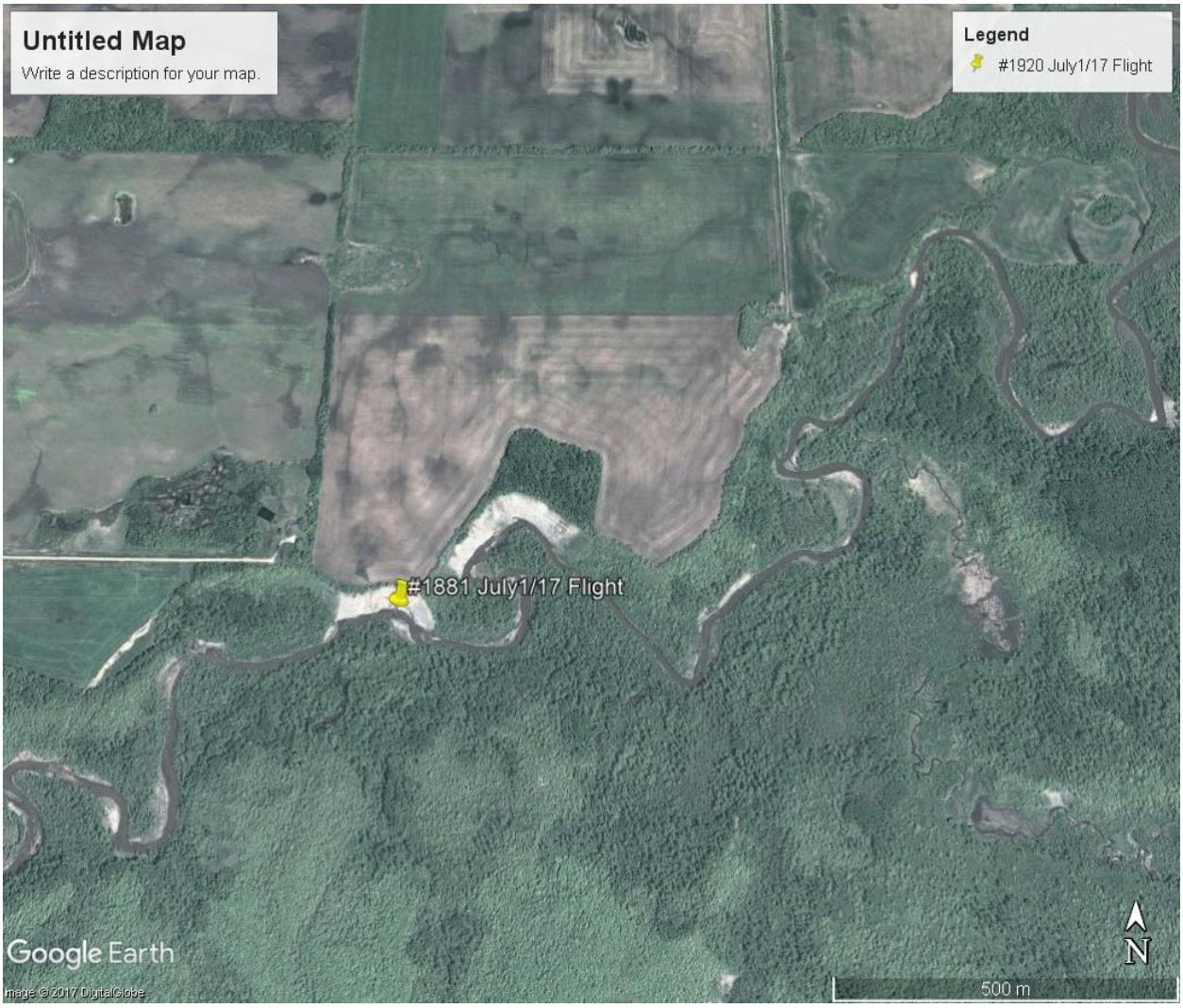

#1940 April 26/17 Foot
#1901 April 26/17 Foot

Flight Tracking

The second portion of this project was to fly the area to find any telemetry tagged fish that were not able to be tracked on land. The information log below shows observations from field

July 1, 2017 – Tag #1920
Vermillion River near bridge by Dauphin Lake
51°10’58.98N 99°52’28.98W

July 1, 2017 – Tag #1881
Vermillion River upstream of reservoir
50°39’31.42N 100°11’23.81W



Discussion

One of the goals of the telemetry project was to determine whether walleye stay in the reservoir, migrate upstream or go over the spillway and head back to Dauphin Lake from where they were transplanted from. For this experiment one walleye was captured and relocated to another location at least 20 Km away and then track that fish to see if there is any "homing" behavior associated with walleye. The walleye tagged with radio telemetry tag #1181 was moved from Crawford Creek up to Stony Point in 2013. When tracked in 2015 the walleye was found in the Valley River area. Based on the four walleye radio telemetry located and tracked data during the 2015 field season, some walleye showed signs of fidelity to a particular tributary for spawning or area of Lake Dauphin when compared to their tagged locations in 2013/2014. Walleye spawn monitoring observations of tributaries found one white tagged walleye in Crawford Creek, which is a tag marking from previous years where white Hallprint tags were put on walleye captured and live released in the southern portion of the lake. The fish was not able to be captured to determine the specific tag number, but a large portion of those tagged with white Hallprint tags was done on Crawford Creek during the 2014 spawning season. These observations when combined with the 2014 Dauphin Lake Trap Net and Telemetry Study report show that the walleye exhibit unique movement patterns depending on the individual tracked with some staying in a particular area of the lake and others moving great distances within the lake and tributaries and one of the tagged walleye being recaptured in Lake Winnipegosis.

Due to the limited resources and low probability of regularly tracking movements of radio tagged walleye there was limited information to be able to draw conclusions with regards to some of the other goals hoped to be achieved when tagging efforts originally began such as regular tracking of all tagged fish throughout the year to build a spatial database for walleye spawning, feeding, overwintering, and the durations in which they use these locations.

The monitoring of the walleye spawn to help identify barriers to spawning was successful in identifying tributaries with impediments to spawning migration and/or allowing safe return of the walleye to the lake when spring flows recede. Actions taken during the 2015 spawn of clearing beaver dams to allow fish passage resulted in walleye and other tributary spawning fish having access to historical spawning grounds with ideal habitat for successful recruitment. Efforts made relocating walleye from the Bennett Drain in 2016 also helped in limiting the fish kill in the drain caused by walleye getting caught in the heavy vegetation in the drain when the spring freshet receded in a short period of time due to limited spring precipitation events.

Conclusion

Continued telemetry tracking efforts would be helpful while radio tags are still active to monitor where walleye migrate and add to the dataset for those remaining tagged fish. Future hoopnetting would also be recommended every 3 to 5 years or so to track the establishment and success of natural recruitment in the reservoir.

Acknowledgements

Intermountain Sport Fishing Enhancement would like to thank everyone who participated in the Dauphin Lake Tagging and Telemetry Project.

Don Stokotelny, Fisheries Technician, ISFE

Nicole Yerama, Technician Assistant, ISFE (2016)

Haley Stokotelny, Technician Assistant, ISFE (2017)

Sustainable Development:

Jonathan Stephens, Fisheries Biologist

Steven Gray, Resource Management Assistant

Project Partners:

Fish and Wildlife Enhancement Fund

Intermountain Sport Fishing Enhancement

Manitoba Sustainable Development

APPENDIX

Hoopnet locations from 2016 and 2017