Appendix G12

2015 Hamlet of Baker Lake Harvest Study – Creel Results

Nunavut ENVIRONMENTAL CONSULTING LTD

MEMORANDUM

TO: Kevin Buck – Agnico Eagle
Ryan Vanengen – Agnico Eagle
Manon Turmel – Agnico Eagle

DATE: 10 February 2016

FROM: Martin Gebauer

Subject: 2015 Hamlet of Baker Lake Harvest Study – Creel Results

The memorandum is summarizing the 2015 creel results from the annual hunter harvest study conducted in the Hamlet of Baker Lake.

Background

In March 2007, a harvest study was initiated by Agnico Eagle in association with the Baker Lake Hunters and Trappers Organization (HTO) in order to monitor and document the spatial distribution, seasonal patterns and harvest rates of hunter kills before and after construction of the Meadowbank All-Weather Access Road (AWAR). The harvest study is conducted annually and is open to Inuit and non-Inuit residents of Baker Lake who are at least 16 years of age. The harvest study focuses primarily on terrestrial wildlife harvests; however, fishing results are also recorded by the harvest study administrator in support of on-going creel surveys. This memo is required to meet Fisheries and Oceans Authorization NU- 03.0190 condition 5.2.4.

Fish Species

The four species commonly reported in the harvest study are: Arctic Char (*Salvelinus alpinus*), Arctic Grayling (*Thymallus arcticus*), Lake Trout (*Salvelinus namaycush*) and Lake Whitefish (*Coregonus clupeaformis*).

2015 Results

Creel results for 2015 are summarized in **Table 1** for four main species. Parameters for fishing effort, including number of participants and number of fishing trips, are summarized in **Table 2**. Results from previous years are provided for comparative purposes.

In 2015, creel results were collected from 16 participants over the course of the year. For comparison, nine (9) participants recorded fish harvests in 2014 (**Table 2**). The number of participants from whom creel results were collected had dramatically decreased in 2014, but increased again in 2015, although the participation rate was still average to low. Lower numbers are likely a reflection of participant fatigue and declining response rate, given the length of time the study has been ongoing.

Table 1: 2015 Creel Results and Historical Results to Date

Species	2015	2014	2013	2012	2011	2010	2009	2008	2007
Arctic Char	41	22	96	24	113	103	117	24	3
Arctic Grayling	29	-	-	1	1	3	1	-	-
Lake Trout	370	353	490	1,014	1,710	860	525	825	210
Lake Whitefish	1,386[a]	651[b]	50	471	460	326[c]	51	192	-
Totals	**1,826**	**1,026**	**636**	**1,510**	**2,284**	**1,292**	**694**	**1,041**	**213**

[a] Annual catch of 1,016 for one participant in 2015

[b] One participant reported 648 Lake Whitefish caught over the year, mostly in November and December.

[c] Single report of 300 Lake Whitefish captured via nets south of Baker Lake.

Table 2: 2015 Fishing Effort and Historical Results to Date

Parameter	2015	2014	2013	2012	2011	2010	2009	2008	2007
Total Fish Catch	1,826	1,026	636	1,510	2,284	1,292	694	1,041	213
Number of Participants Reporting Fish	16	9	23	31	38	30	24	10	16
Number of Trips	161	128	93	177	400	155	144	102	29
Number of Trips per Participant	10.1	14.2	4	5.7	10.5	5.2	6	10.2	1.8
Number of Fish per Trip	11.3	8.0	6.8	8.5	5.7	8.4	4.8	10.2	7.3

Discussion

Total fish harvest was highest in November 2015, followed by December (**Figure 1**). The number of fish reported caught in November 2015 was the highest monthly catch recorded during the creel study to date. The high catch number recorded by one participant for November 2015 has skewed the total reported fish catch, which is the second highest total annual catch recorded, despite participation rates in the creel study being average to low (**Tables 1** and **2**). Reported total fish catch increased slightly in 2015, as would be expected with the small increase in participation observed from 2014 records. In previous years, a comparable summer and winter peak in fish catch was observed; however, summer fish harvest in 2014 and 2015 was much lower than winter harvest. A smaller peak in fish caught was observed from May to July, but amounts were lower than previously (**Figure 1**).

When data are standardized for fish harvested by the number of participants each month, the highest number of catches per participant occurred in November and December, when fewer participants are fishing but catches are much higher (**Figure 2**). Over the last two years of the creel study, participant harvest rates in November were the maximum observed in the historical dataset (2007 to 2015 inclusive). Excluding November and December 2015, the average monthly catch per participant was generally comparable to median monthly trends for most of the year (**Figure 2**).

Total catch for each species is considered in context with changes in participation and reporting rates (**Table 1**). Arctic Grayling catch was the highest reported to date, with 29 fish caught (by one participant) compared to a previous record of three (3) fish caught in 2010. Arctic Char catch in 2015 increased over 2014 records, likely reflecting higher participation rates. Lake Trout harvest rates remained comparable to recent years. Lake Whitefish catch continues to vary widely, often a result of very few participants catching a large quantity of fish in November and December. One participant reported catching over 1,000 Lake Whitefish, resulting in the highest reported total annual harvest for this species, despite an average to low year for participation.

Participation levels were higher than in 2014, but overall fishing effort per participant decreased (**Table 2**). The number of fish harvested per trip was at its highest level in 2015 (11.3 fish per trip on average), again because of high daily catch rates for whitefish.

The spatial distribution of harvests from 2015 creel data is presented in **Figure 3**. Data are presented as the average number of fish caught per fishing trip, to represent the frequency of visits and success. Fishing trips, regardless of relative success rate, did not generally venture beyond the immediate areas of Baker Lake, Whitehills Lake, and along the AWAR.

The number of fishing trips and total fish catch in the study area in 2015 is presented in **Figure 4**. Most fish reported harvested in 2015 were caught near the Hamlet of Baker Lake. Some fishing activity was observed north of Whitehills Lake and north of Meadowbank in 2015. Cumulative harvest frequency, distribution, and success for all years of the creel study is presented in **Figures 5** and **6**.

The majority of participants continue to fish around the perimeters of Baker Lake and Whitehills Lake. High fishing rates were also reported for Whitehills Lake in 2007 and 2008 prior to AWAR construction. Some fishing effort was observed north of Whitehills Lake in 2015, which was not observed in 2014, but results generally indicate that study participants are less willing to travel long distances to catch fish, regardless of AWAR access, likely due to the abundance of fish in close proximity to the Hamlet of Baker Lake.

Figure 1: Fish Harvests per Month (2007 to 2015)

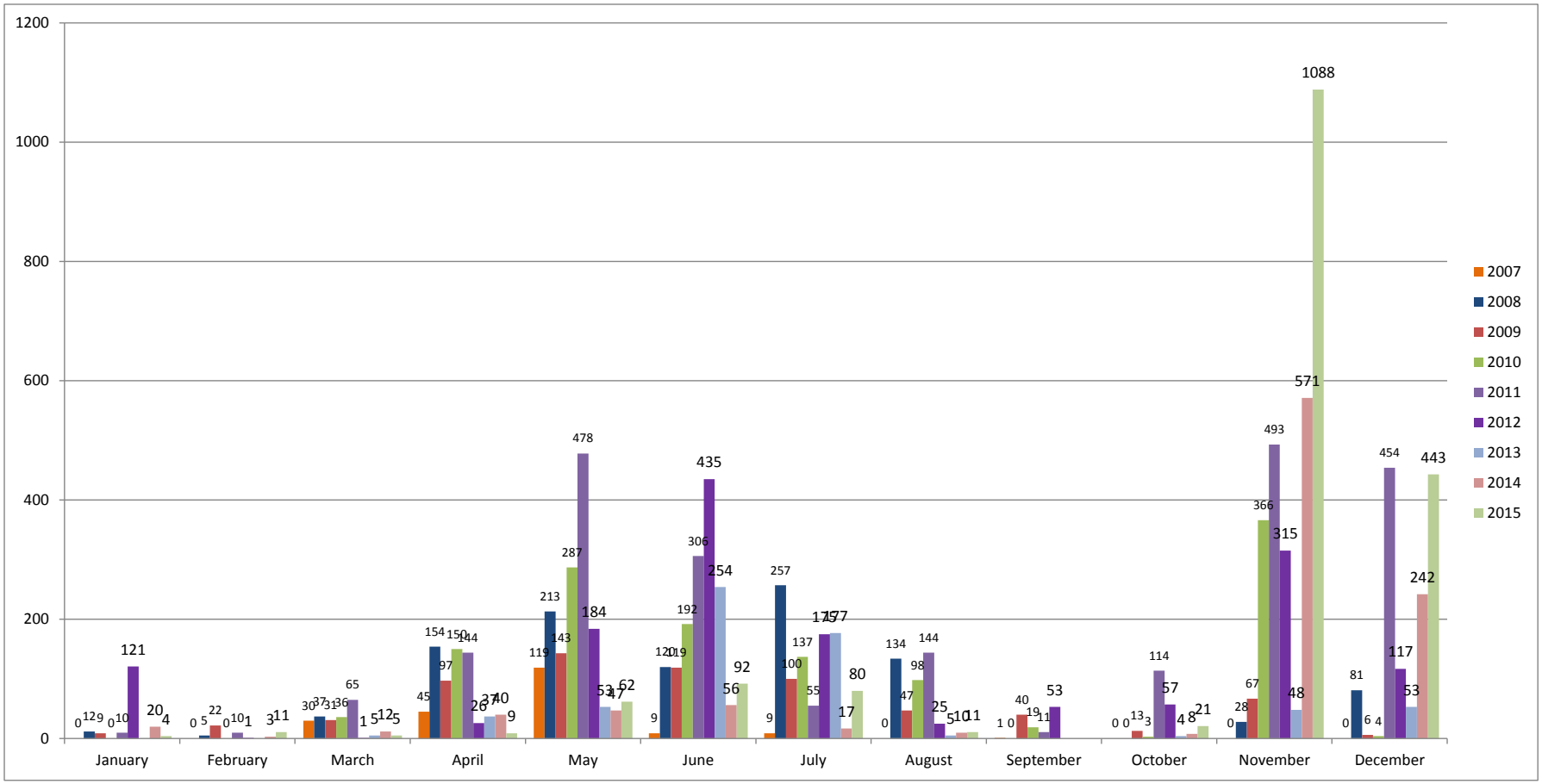
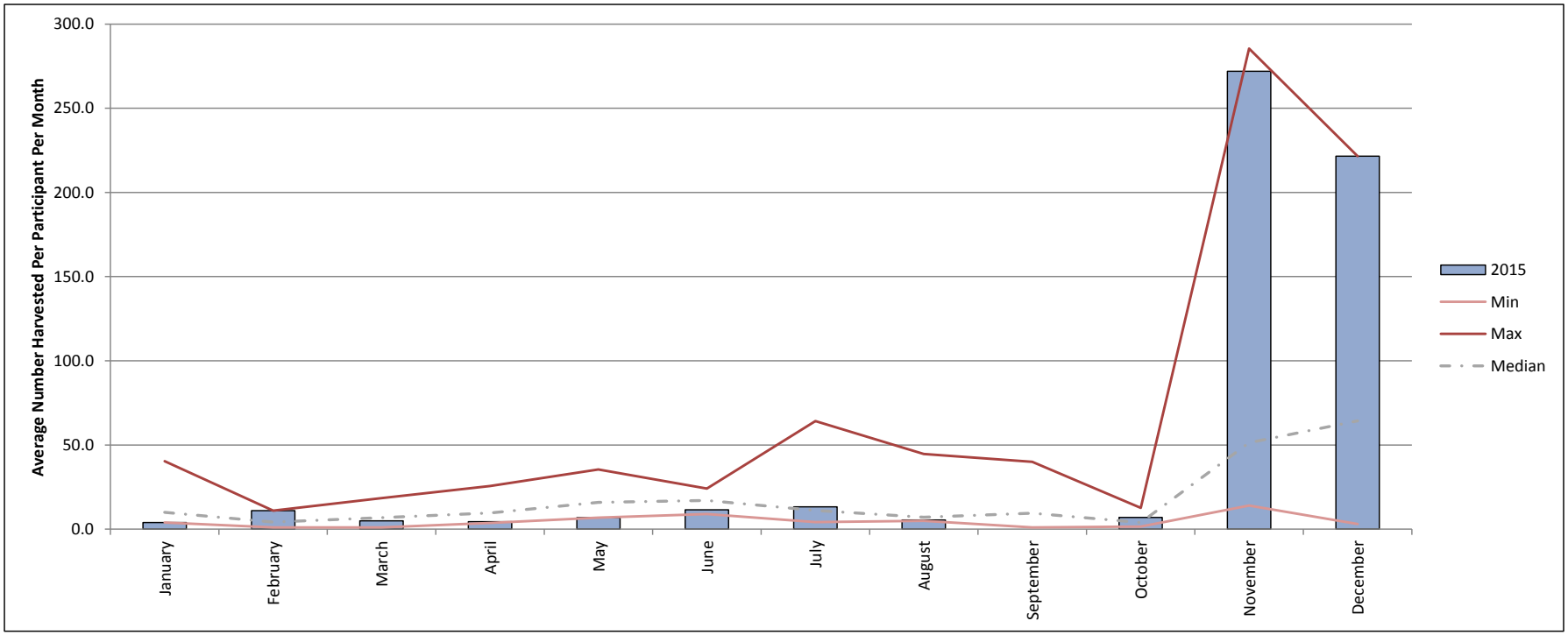


Figure 2: Average Fish Harvests per Month per Participant in 2015 Compared to Historical Data Averages (2007 to 2015)



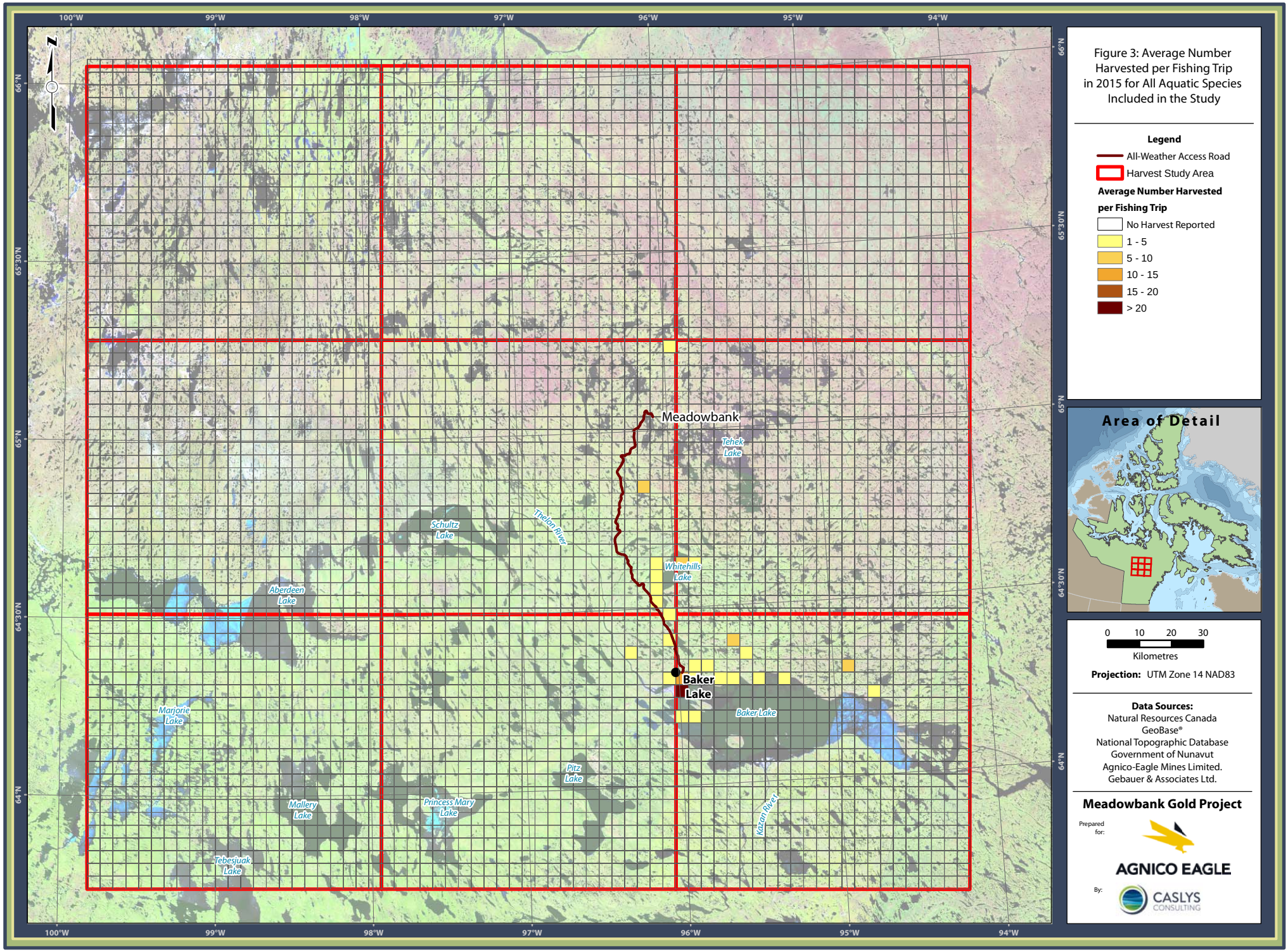


Figure 3: Average Number Harvested per Fishing Trip in 2015 for All Aquatic Species Included in the Study

Legend

- All-Weather Access Road
- Harvest Study Area

Average Number Harvested per Fishing Trip

- No Harvest Reported
- 1 - 5
- 5 - 10
- 10 - 15
- 15 - 20
- > 20

Area of Detail

0 10 20 30
Kilometres

Projection: UTM Zone 14 NAD83

Data Sources:
Natural Resources Canada
GeoBase®
National Topographic Database
Government of Nunavut
Agnico-Eagle Mines Limited.
Gebauer & Associates Ltd.

Meadowbank Gold Project

Prepared for: AGNICO EAGLE

By: CASLYS CONSULTING

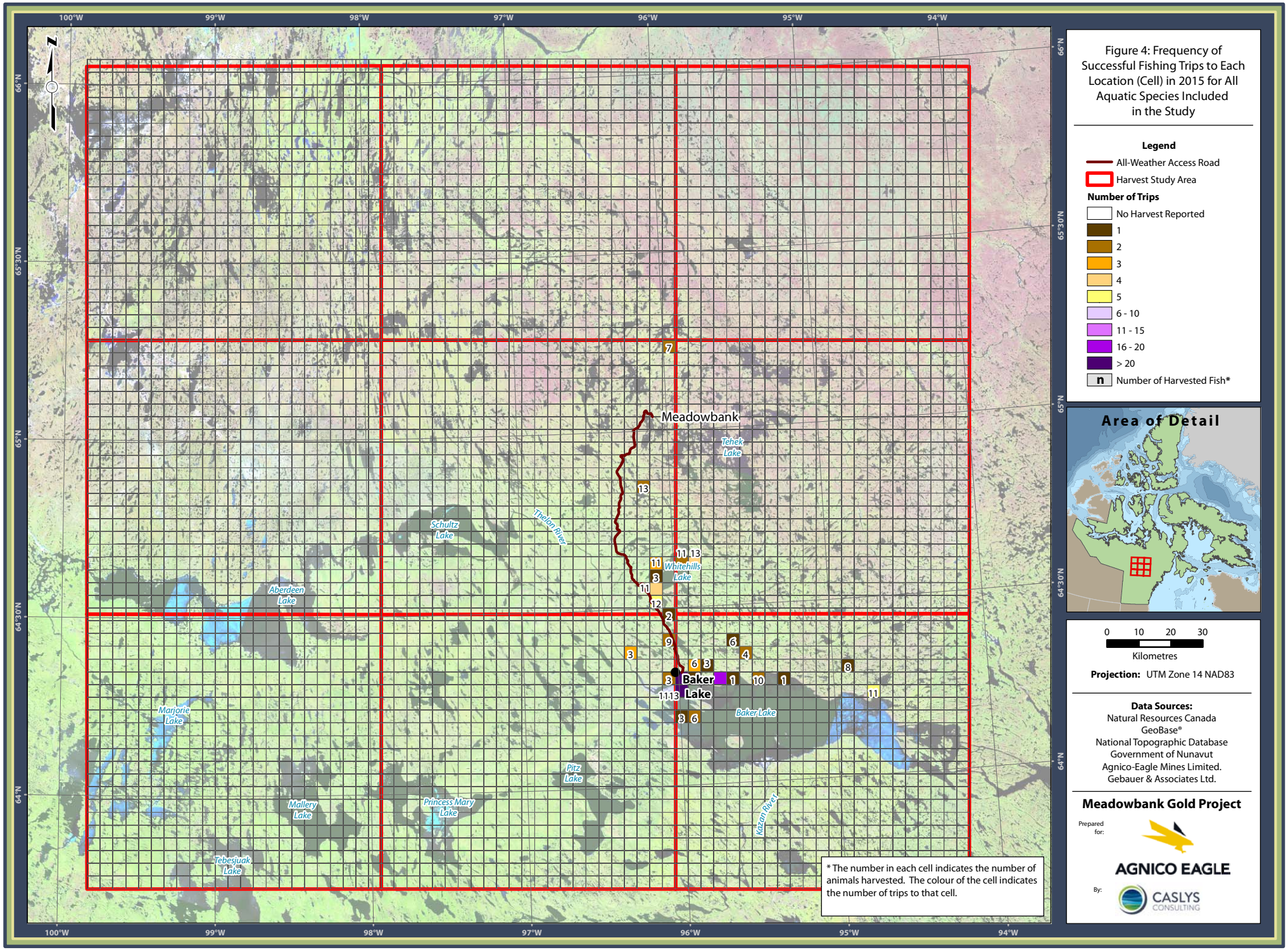


Figure 4: Frequency of Successful Fishing Trips to Each Location (Cell) in 2015 for All Aquatic Species Included in the Study
Legend
All-Weather Access Road
Harvest Study Area
Number of Trips
No Harvest Reported
1
2
3
4
5
6 - 10
11 - 15
16 - 20
> 20
n Number of Harvested Fish*
Area of Detail
0 10 20 30
Kilometres
Projection: UTM Zone 14 NAD83
Data Sources:
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* The number in each cell indicates the number of animals harvested. The colour of the cell indicates the number of trips to that cell.
Meadowbank
Baker Lake
Tehek Lake
Schultz Lake
Thelon River
Whitehills Lake
Aberdeen Lake
Marjorie Lake
Pitz Lake
Mallery Lake
Princess Mary Lake
Tebesjuak Lake
Kazan River
100°W
99°W
98°W
97°W
96°W
95°W
94°W
66°N
65°30'N
65°N
64°30'N
64°N

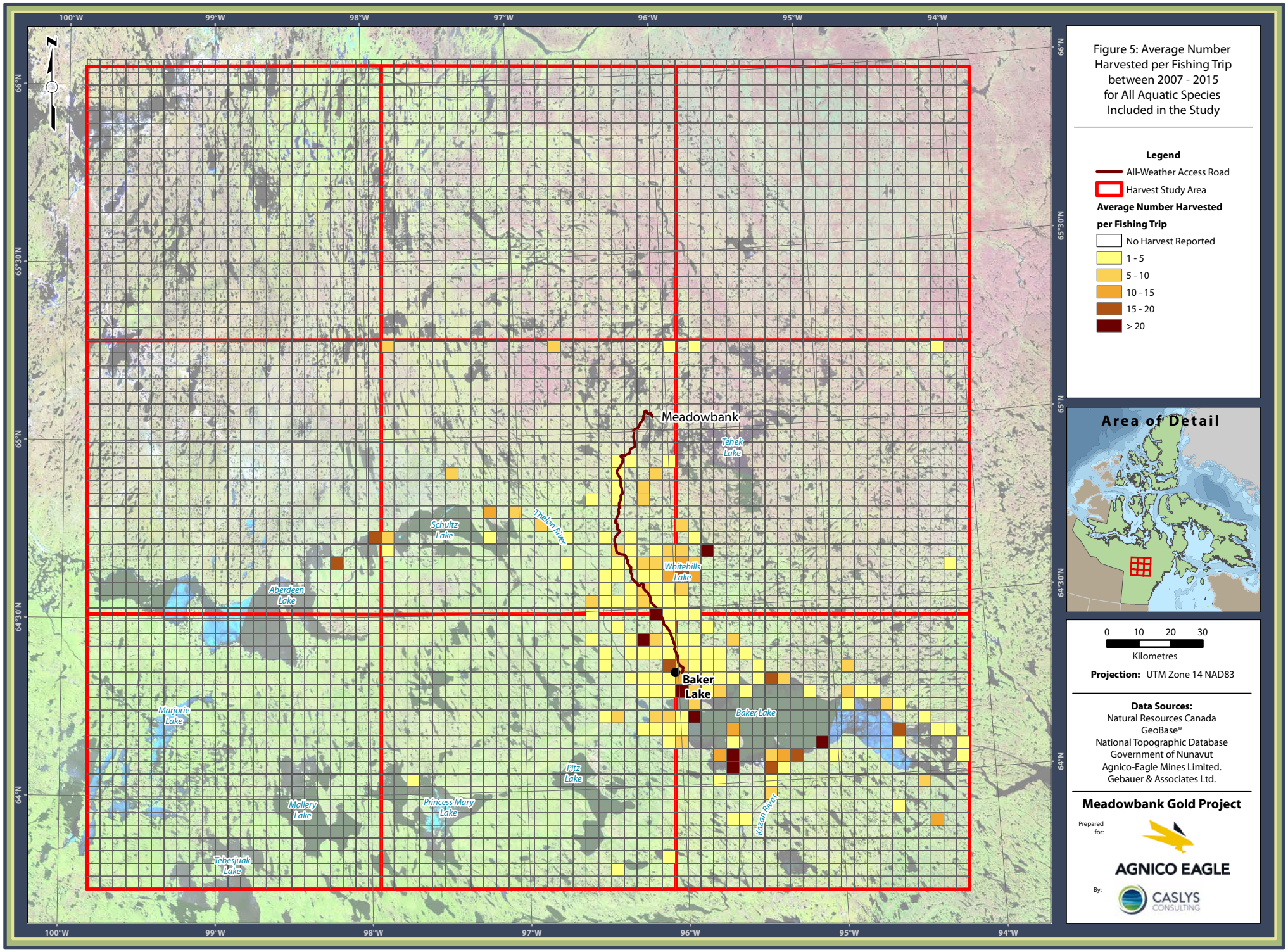

Figure 5: Average Number Harvested per Fishing Trip between 2007 - 2015 for All Aquatic Species Included in the Study

Legend

- All-Weather Access Road
- Harvest Study Area

Average Number Harvested per Fishing Trip

- No Harvest Reported
- 1 - 5
- 5 - 10
- 10 - 15
- 15 - 20
- > 20

Area of Detail

0 10 20 30

Kilometres

Projection: UTM Zone 14 NAD83

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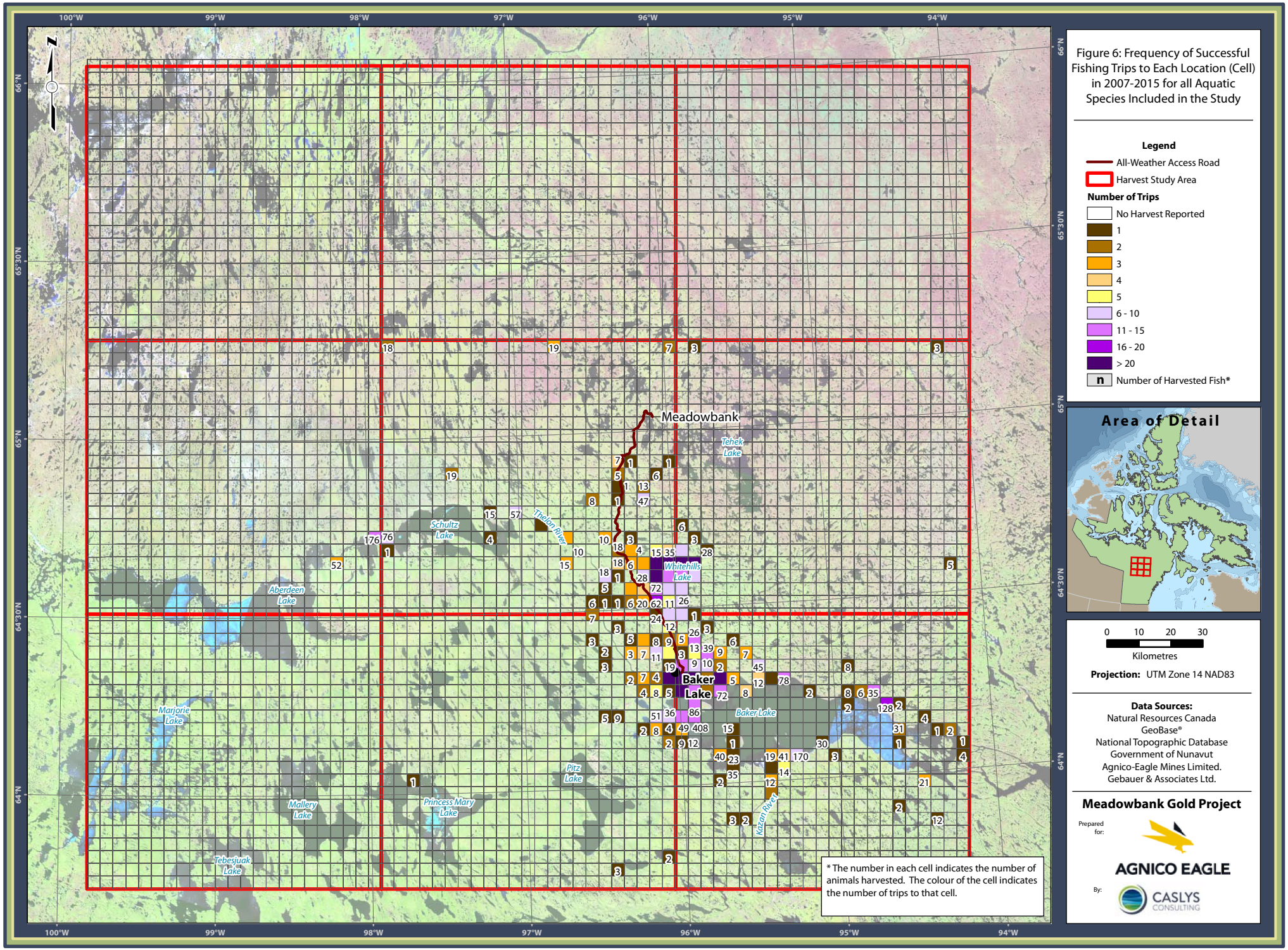
Figure 6: Frequency of Successful Fishing Trips to Each Location (Cell) in 2007-2015 for all Aquatic Species Included in the Study
Legend
All-Weather Access Road
Harvest Study Area
Number of Trips
No Harvest Reported
1
2
3
4
5
6 - 10
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16 - 20
> 20
n Number of Harvested Fish*
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Meadowbank
Baker Lake
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96°W
95°W
94°W
66°N
65°30'N
65°N
64°30'N
64°N