

## The results are in. Fishing was great

In the spirit of full disclosure before we look at the data: one of my favorite courses in college was “How to lie with statistics”. The data used for analysis is gathered through Census Sheets we ask all anglers to fill in, listing Pond/Species/Length/Harvest or Release. The results are based on Census Sheet and logbook records. *Measure nets have been available since 2015 to help with accuracy!* With that said, here are some (I think) interesting ways to look at 2017 results. The detailed numbers for years going back to 2012 are in the associated PDF file.

2017 Season (4/8/2017 to 12/26/2017)																								
Season Days=234 Days Fished=1355 Member=971, Family=105, Guest=384)																								
All Visit Days=1494 Days Not Fished=139(Member=61, Family=64, Guest=78)																								
	<13	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	Pond Total	Re- lease	Taken	% Taken	Average Length		
Birch	245	160	202	141	125	53	59	26	33	24	15	3	5	2			1	1093	1012	81	7.4%	15.2	3	
Cedar	117	32	87	64	84	43	72	43	62	36	44	41	43	12	5		3	785	764	21	2.7%	17.6	1	
Pine	74	59	144	130	134	63	115	46	69	34	37	8	11				2	924	825	99	10.7%	16.9	2	
Spruce	36	17	23	9	5	5		1	2		1							99	88	11	11.1%	14.0		
Rock	13	9	15	3	1		1	1	1									44	43	1	2.3%	14.1		
Club	4	3	5	4	1	1	1		2	1								22	20	2	9.1%	16.3		
Total	489	280	476	351	350	165	248	117	169	95	97	52	59	14	5	---	---	2967	---	---	---	16.3		
C&R	478	258	446	318	310	148	221	109	154	87	96	51	57	14	5	---	---	---	2752	---	---	---	16.3	
Taken	11	22	30	33	40	17	27	8	15	8	1	1	2	---	---	---	---	---	---	215	7.2%	16.6		

## Lots of gee whiz numbers

1. There were 234 days the club was open for fishing.
2. 2967 fish were caught which averages 12.7 fish per day.
3. Most fish were caught in Birch - 1093.
4. The average length of fish caught in all ponds was 16.3 inches.
5. The average length of fish caught in quarry ponds was 16.4 inches.
6. Cedar had the largest average length – 17.6 inches.
7. 92.8% of fish were released.
8. 501 fish were 20” or larger (16.9%)
9. 78 fish were 24” or larger (2.3%)
10. 92.8% of fish caught were released to grow larger for 2018

## **When looking at the data keep in mind:**

1. Garbage In – Garbage Out – record your results on your census sheet!
2. Be careful when comparing data between years:
  - a. Season Days (based on start/finish dates) vary from year to year.
  - b. Days Fished vary based on # Season Days, weather conditions, and length and intensity of summer conditions.
  - c. Changes in stocking plans, feeding strategies which may vary from year to year.
3. Time spent fishing at a pond is an important consideration when looking at catch counts. Looking at catch/hour would help normalize. Unfortunately, this is not available.
4. Past angler performance is no guarantee of future angler results ...
5. Each analysis of the data leads to more questions.
6. Most analysis below:
  - a. Comparisons exclude catch & stocking for Club, Rock, and Spruce
  - b. Fish are grouped into three categories:
    - i. 10"-14" – Newly Stocked (will grow 2"-3"/year)
    - ii. 15"-19" – 1 to 3 Year Holdover (will grow 3"-2"/year)
    - iii. 20"-30" – 3+ Year Holdover (will grow 2"-1"/year)
7. A word about our fish
  - a. Most of our fish stocked over the past couple of years are in the 10"-14" range with some smaller in 2014-15
  - b. We believe our holdover fish grow 2-3 inches/year up to about 19". After that the growth rates slow to 1-2 inches/year and the fish put on weight.
  - c. This is a SWAG (Scientific Wild Ass Guess) but we'll keep watching.

Some questions that often come up, especially over an adult beverage:

1. Which pond do I have the best chance to catch a fish?
2. Which pond do I have the best chance to catch big fish on average?
3. Which pond do I have the best chance to catch a trophy fish?
4. Are holdover fish easier or harder to catch? Why?
5. Does stocking change catching numbers? How? If so, for how long?
6. Are fish harder to catch after feeding? Why?

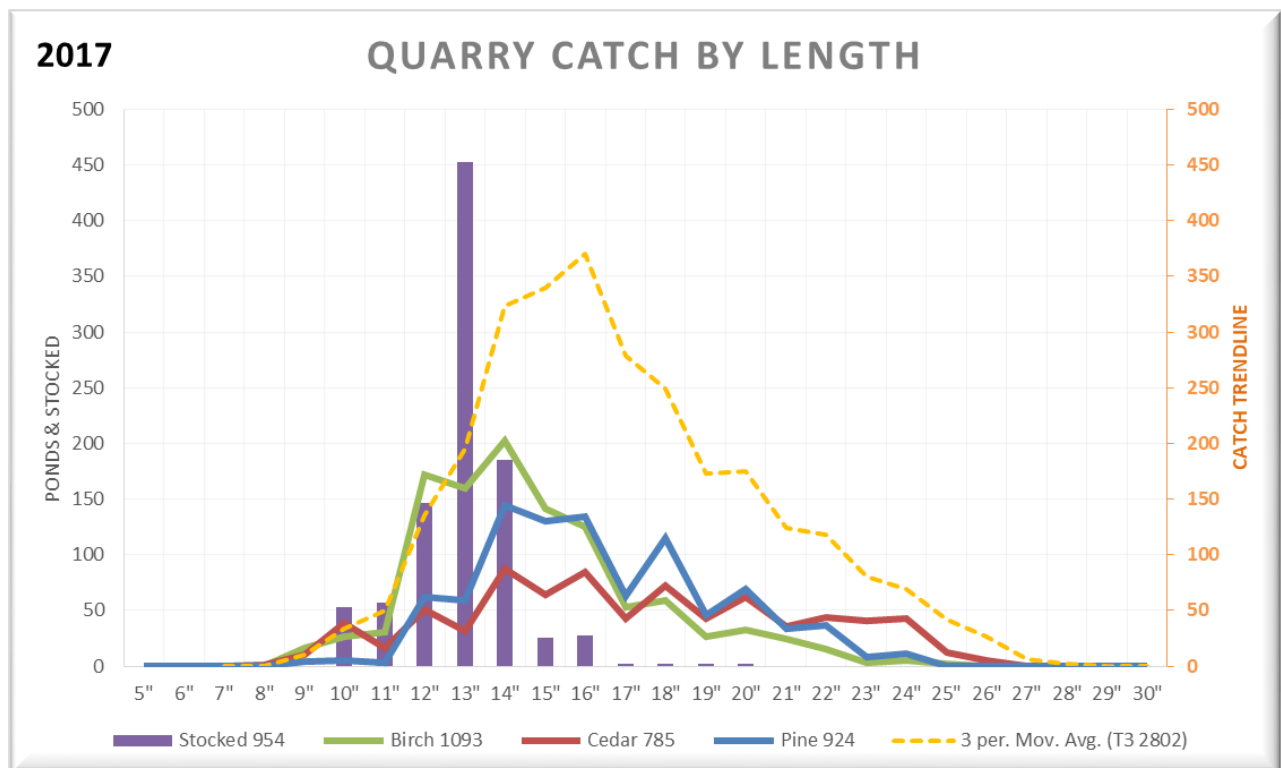
## Different ways to look at the swamp

Viewing the data different ways may help confirm your assumptions, change them ... or leave you asking more questions.

Here are some charts with comparisons between the quarry ponds (Birch, Cedar, and Pine).

### Quarry Catch by Length

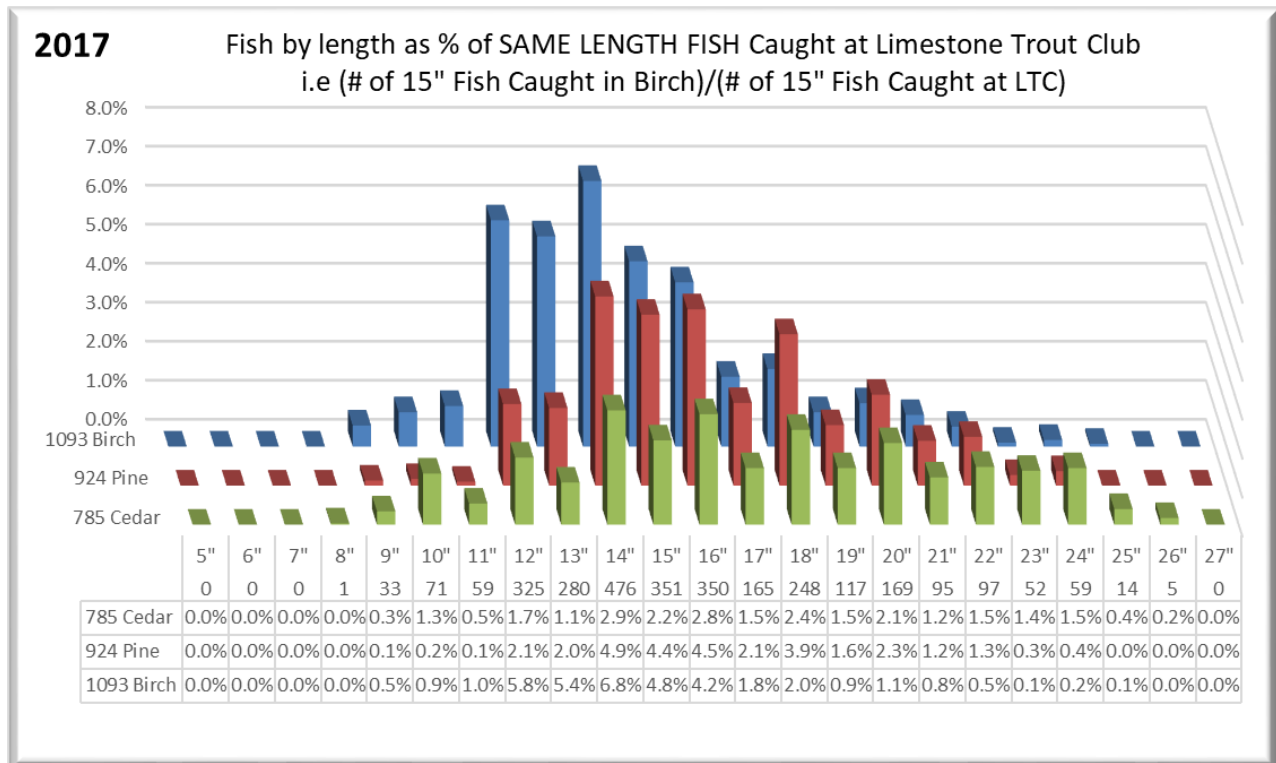
This chart compares the number of fish caught at each length for each pond (Green-Birch, Red-Cedar, Blue-Pine). For perspective, the total of all fish caught in the quarries is shown by dotted line. The purple bars show the stocking numbers. While the stocking numbers are interesting, they may be of more interest when examining catch lengths before and after stocking. (This will have to wait for another day.)



At this level, the chart shows there are many fish up to 22" in all ponds. Birch is skewed to the smaller sizes and Cedar to the 23+" sizes while Pine is strongest in the mid-range. However, a more detailed comparison provides different insight.

## Quarry Catch in Detail (For those of you whose eyes haven't glazed over)

Viewing Fish Caught By Length as a percent caught within a pond provides more detail graphically. Comparisons between ponds shows detail on the size distributions within a pond.



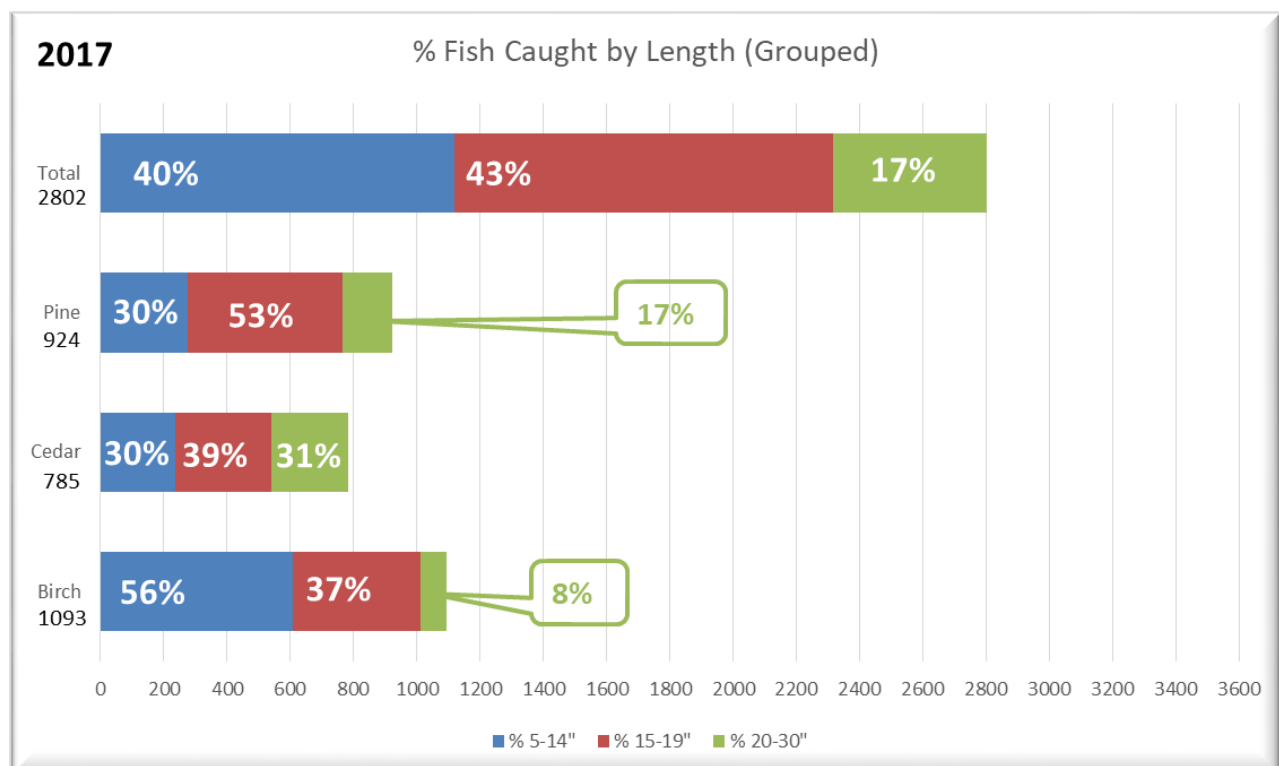
### At a broad level you can see

- Birch has the highest number of fish caught with the bulk in the 12" to 16" range made up of newly stocked and recent holdovers
- Pine has the highest number of fish caught in the 14" to 20" range
- Cedar has the highest number of monsters in the 23" to 26" range
- A decent number of trophy fish 20" and larger are found in all ponds
- With the exception of a few tigers stocked in the spring, the fish were only stocked in the fall and were from 12" to 14"  
(Birch-433, Cedar-232, Pine-279)

## % Fish Caught by Length

This chart shows one way to estimate the time fish have been in each pond. The assumption is that most fish are stocked in 10" to 14" lengths weighted towards 12" to 14". Previous analysis shows our fish up to 19" grow 2-3 inches/year and after that 1-2 inches per year. With these assumptions the **% Fish Caught by Length** chart was generated by totaling fish caught in the groups shown below and that number used to calculate the percent of the population. The three groupings are:

- 5"-14" – Newly Stocked
- 15"-19" – 1 to 3 Year Holdover
- 20"-30" – 3+ Year Holdover



### We have a lot of big healthy fish

- 60% of fish caught in the quarries are holdovers.
- 70% of fish caught in Cedar and Pine are holdovers
- There are trophy fish in all ponds but your best bet is Cedar (31%/243 fish) compared to Pine (17%/139) fish or Birch (8%/82 fish)
- Cedar has the largest percent of trophy fish at 31%
- Birch has the largest percent of newly stocked fish caught at 56%

As noted at the beginning, there are many ways to look at the data and the data can be useful in helping make informed decisions on fisheries management. We have a good start and with more yearly numbers the year to year data will help us spot trends and give us feedback on how well we are doing.

I encourage all of you to report your catches and to get involved. Questions and comments are most appreciated.

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PS. If you are really a masochist you can see the raw data and additional charts by looking at the file **Census Sheet Data and Analysis.xls**