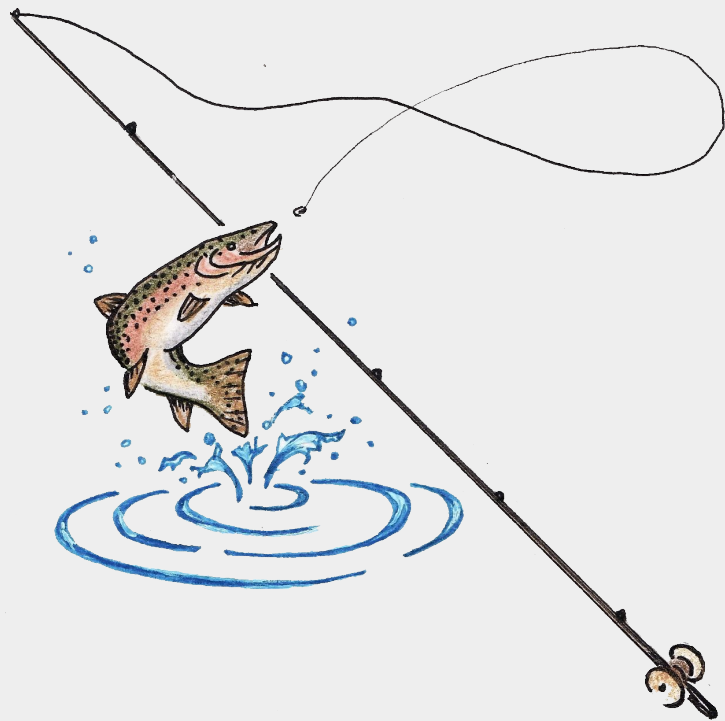


Let's Go Fishing!

By: Dong Zhen

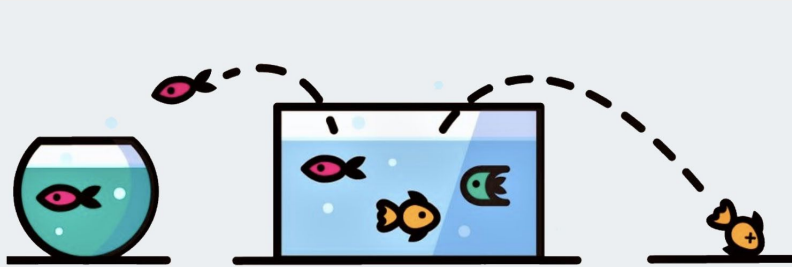




“Hunters and anglers form the foundation of wildlife conservation in the United States, consistently generating more funding for habitat and wildlife management than any other source.”

- U.S. Fish and Wildlife Service Principal Deputy Director Greg Sheehan
- 

Problem

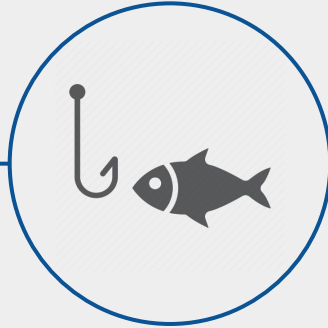


Fishing participation rate has grown to 17% of the U.S. population the highest since 2007, however the **annual churn rate of participating fishermen also increased to 19%**. One of the **biggest obstacles** that prevent people from enjoying fishing is the **lack of knowledge**.

New York Statewide Angler Survey 2017



Fishing contributed **2.14 billion dollars** and **supported 10,961 jobs** to the New York economy in 2017



72% of anglers fish for freshwater fishes



42% of anglers rank more information on where and how to fish as the top action to increase their fishing activity

Opportunity & Impact

To **increase fishing activity by connecting amateur anglers with sufficient fishing insights** from participating New York fishermen.

By **identifying key details to get the first catch**, like what bait or fishing technique to use from locals and **making it easy for people to get this information**, New York can attract and increase fishing activity.



Data Solution

By **scraping New York fishing forums** and **performing nlp**, and **topic modeling** to acquire the most relevant information to fishing in New York, particularly freshwater fishing.

Data Source



Threads

Fishing report

Saltwater and freshwater



Threads

Fish/fishing report

Tackle and fishing tactics

Combined 30k posts with an average of 3,126 words each

Activity Insights

Most Active Threads

01 Places to Fish/Fishing Reports

03 Multi-Species

02 Tackle and Fishing Tactics

04 Saltwater

Highest Postings



March



July

Topic Modeling

Procedure

- ➔ TDIF to get weighted frequencies on words across doc
- ➔ NMF to create 7 topics

Application

- ➔ Applied on all post titles and post content
- ➔ Applied for post titles and post content by season

Post Title Insights

Fall



Lake Champlain and Lake Oneida, Mohawk river, and Croton Reservoir



Trout, Salmon, Bass

Winter



Lake Champlain or Lake Oneida



Bass and Salmon

Spring



Lake Oneida or Saratoga,
Croton Reservoir, and
Hudson River



Bass, Trout, Stripers,
Salmon, Pike, Crappie

Summer



Lake George or Lake
Champlain, Croton
Reservoir, and Mohawk River



Bass, Walleye, Pike,
Smallies, Frogs

Post Content Insights

Fall

Light Croix rod with braided line

Winter

Daiwa or Croix heavy rod with a jig and worm bait

Spring

Shimano or Daiwa light spinning rod with a braided line with a jig fishing lure and worms

Summer

Shimano or Croix medium rod with a braided line hook and senko bait

Further Insights

Lakes: george, champlain, saratoga, rockland, erie, greenwood, cayuga, silver, oneida, bonaparte, ontario, lillinonah, white, black, keuka, whaley, welch, round, conesus, ronkonkoma, ballston

Rivers: hudson, mohawk, delaware, saint lawrence, susquehanna

Reservoirs: croton, muscoot, kensico, titicus

Fishing Rods: croix, shimano, daiwa, curado

Rod Attachments: spinning reel, jig lure, worm bait, braided line, spool

Types of Fish: Bass, walleye, salmon, pike, crappie

Research Check

Location: All of the water bodies are fertile and contains a variety of fish

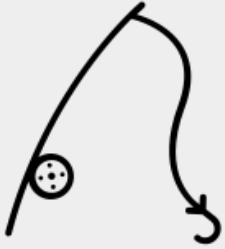
Common Fish Species: Bass (Largemouth and Smallmouth), Trout (Brook and Lake), Striped Bass, Flounder and Bluefish

Line Type: Avid anglers recommend using braided fishing line over the monofilament line

Lures: Jigs are great to use year round because it imitate baitfish and crawfish

Rod Brands: Shimano and St. Croix are consistently ranked in the top 10 brands for fishing rods and reels by avid anglers and fishing media outlets

NY Fishing Suggestions



**Proper
fishing rod**



Fishing line



Lure/bait



Location

Future Work

- ➔ Differentiate informative posts from noise posts
 - Focus on active posters
 - Section by posts with high views
- ➔ Separate boat fishing from fishing on land

NY Fishing Starting Kit for Spring



**Shimano
fishing rod**



Braided line



Jig lure



Lake George

Appendix

When direct, indirect, and induced economic effects of angler spending are taken into consideration, an estimated \$2,138 million of economic activity was generated and 10,961 jobs were supported in 2017 in New York.

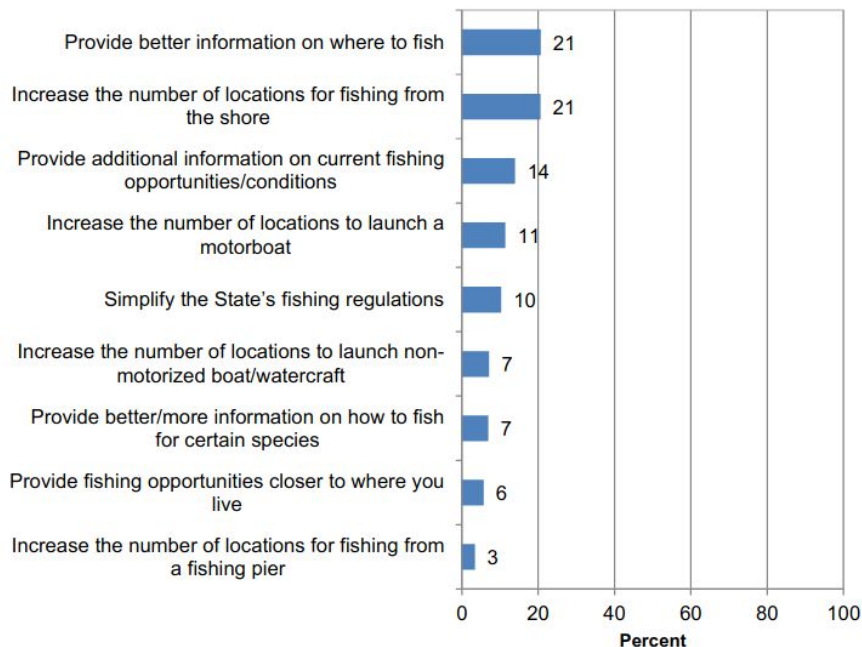
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https://www.dec.ny.gov/docs/fish_marine_pdf/nyas17rpt3.pdf

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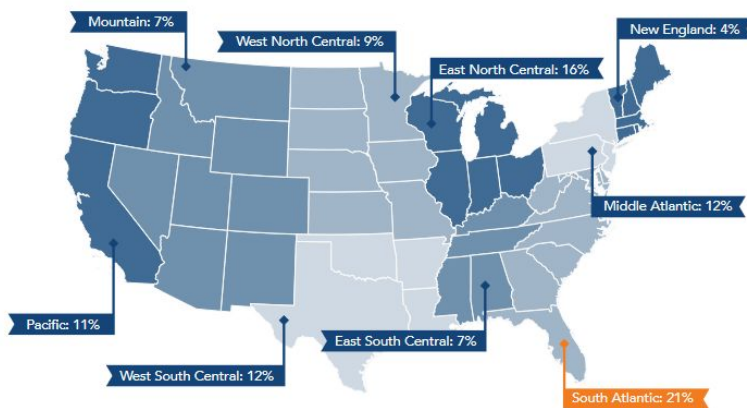
https://www.dec.ny.gov/docs/fish_marine_pdf/nyas17rpt2.pdf

Q11. Please rank the 2 actions that would encourage you to increase your fishing activity. (Top choice.)



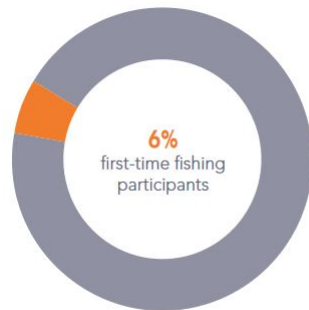
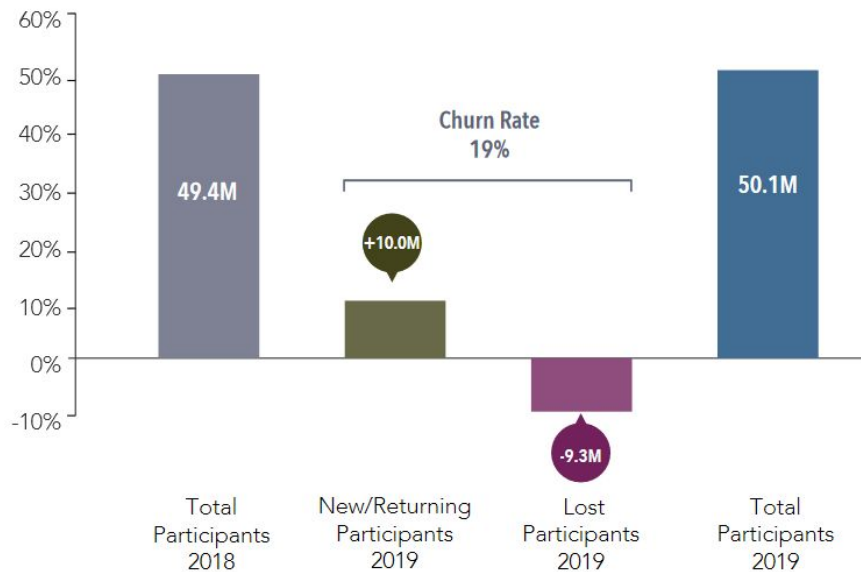
Source:

https://www.takemefishing.org/getmedia/eb860c03-2b53-4364-8ee4-c331bb11ddc4/2020-Special-Report-on-Fishing_FINAL_WEB.pdf



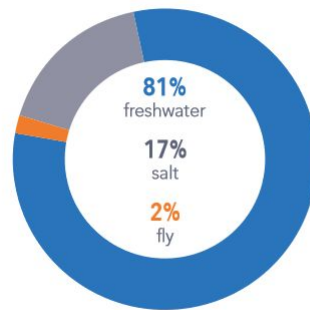
REGIONAL PARTICIPATION RATES

The South Atlantic region, with ample coastline for fishing, had the highest fishing participation rate at 21%. The participation rate increased by 4% since 2018. The largest jump in participation, however, was in Mountain region, with Montana to the north and Arizona and New Mexico to the south. Although participation here was a moderate 7%, it jumped by a monumental 10% since the year before.



NEW TO FISHING

Out of 50.1 million fishing participants, 3.1 million were new to the activity. That was 6% of all active fishing participants.



FIRST TYPE OF FISHING EXPERIENCE

A vast majority of returning or continuing fishing participants—81%—tried freshwater fishing during their first outing. Saltwater fishing came in a distant second at 17%, and at 2%, fly fishing seemed to be the least accessible, perhaps due to specialized techniques and equipment.

Obstacles to Enjoyment	Rating (1=Highest 5=Lowest)
Boring	4.6
Don't like to touch fish and worms	4.5
Baiting the hooks or taking the fish off the hook	4.3
The hassle	4.2
Lack of knowledge	4.2
Not having the right equipment	4.1
The expense	4.1
Lakes and rivers were not clean	4.0
Being outdoors	3.9
Not catching fish	3.9
Crowded fishing locations	3.7

OBSTACLES TO ENJOYMENT

Boredom was the top reported barrier to fishing enjoyment. The next reasons were more physical—not enjoying handling the fish and worms and disliking baiting the hooks or touching the fish once caught.

Resources Making It Easier to Fish	Rating (1=Highest 5=Lowest)
Information on nearby bodies of water	3.8
Easier or more affordable access to boats	3.7
Easier or more affordable access to fishing gear	3.5
Comprehensive mobile guides that you can access on the water	3.2
How-tos and tutorial videos	3.1
Short lessons or information sessions from state agencies or local guides	3.0
Resources and information on voice-activated devices	2.8

REMOVING BARRIERS TO PARTICIPATION

Adult fishing participants thought that information on nearby bodies of water would make it easier for people to fish. Easier access to boats came in second.

Post_Year	Post_Length	
	count	mean
2007	3660	3483.0
2008	3648	2988.0
2004	3203	3696.0
2006	3095	3642.0
2009	2784	2749.0
2011	2086	2595.0
2010	2029	2721.0
2012	1776	2570.0
2013	1420	2809.0
2014	1073	2840.0
2020	829	2141.0
2015	661	2931.0
2005	647	3863.0
2016	463	2652.0
2003	410	5314.0
2019	368	4157.0
2017	261	2696.0
2021	256	2785.0
2018	162	3786.0

Post_Month	Post_Length	
	count	mean
Apr	3365	2652.0
Jun	3053	2806.0
May	3040	2668.0
Jul	2974	2961.0
Mar	2640	3092.0
Aug	2533	2968.0
Sep	2147	3075.0
Oct	2014	3528.0
Nov	1936	3561.0
Jan	1860	3723.0
Feb	1659	3722.0
Dec	1610	3937.0

Post_Season	Post_Length	
	count	mean
Spring	9045	2786.0
Summer	8560	2908.0
Fall	6097	3379.0
Winter	5129	3790.0

Thread_Name	Post_Length	
	count	mean
Places to Fish/Fishing Reports	17215	2684.0
Tackle and Fishing Tactics	8706	4161.0
Multi-Species	1024	2608.0
Saltwater	685	2088.0
Fishing Report	506	1213.0
General Discussion	363	2734.0
Inshore Tackle and Techniques with Lep	172	8856.0
New York State DEC Updates	70	2346.0
Sweetwater - Lakes, Reservoirs and Ponds	57	2038.0
Long Island Sound Fishing	33	5569.0

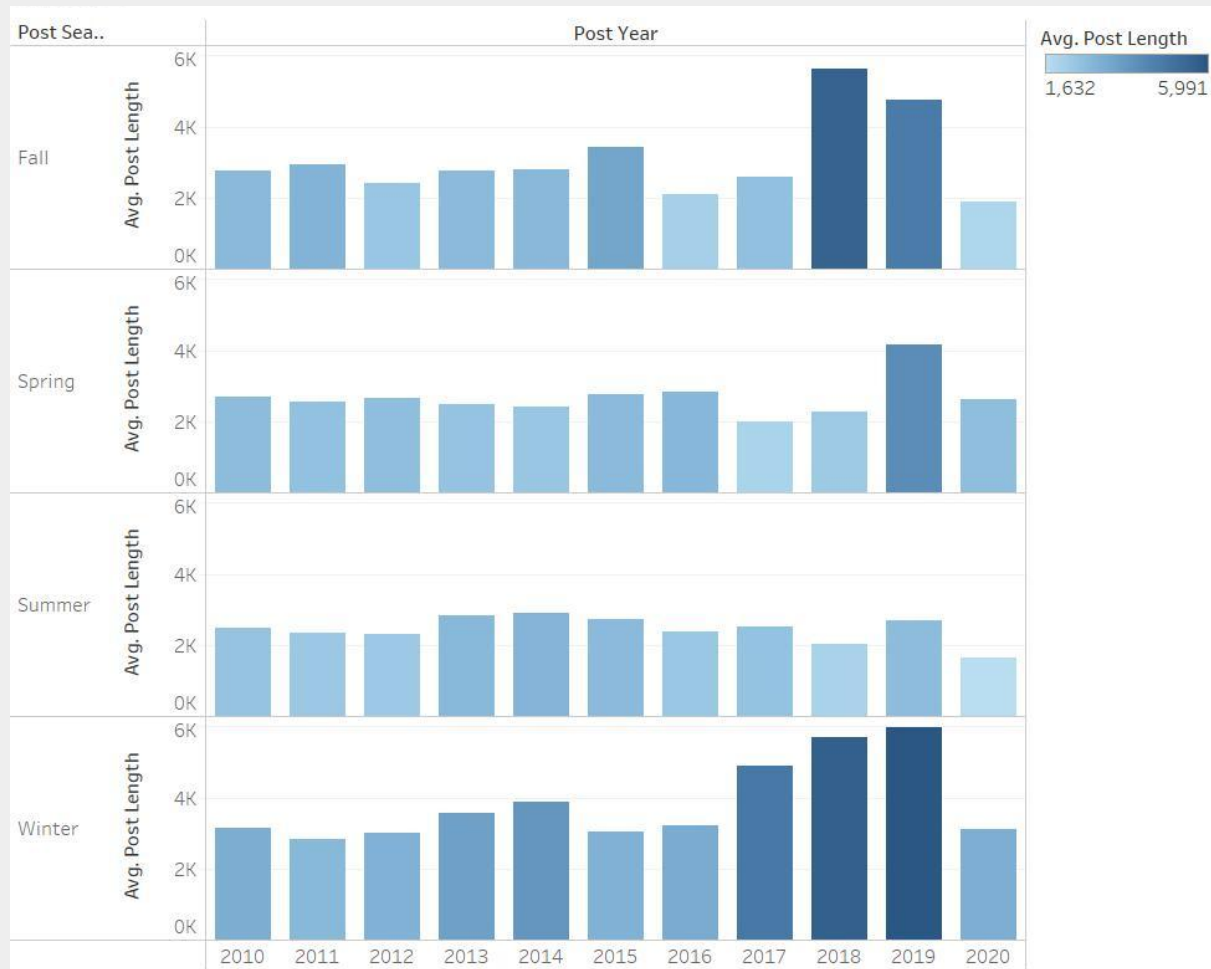
Thread_Name	Thread_Views	Thread_Replies	
Places to Fish/Fishing Reports	19.7M	203K	17215
Tackle and Fishing Tactics	12.3M	122K	8706
Multi-Species	1.6M	11.2K	1024
Saltwater	659K	5.1K	685

Post_Year	Post_Views		Post_Replies	
	sum	mean	sum	mean
2003	717226	1749.0	4774	12.0
2015	990203	1498.0	6821	10.0
2019	154124	1454.0	946	9.0
2005	936406	1447.0	7468	12.0
2004	4609990	1439.0	29843	9.0
2010	2810207	1385.0	23626	12.0
2006	4137404	1337.0	35195	11.0
2013	1875697	1321.0	16211	11.0
2014	1391044	1296.0	11885	11.0
2009	3352495	1204.0	36096	13.0
2016	556945	1203.0	4189	9.0
2007	4258660	1164.0	42517	12.0
2017	289889	1111.0	2240	9.0
2020	139638	1074.0	959	7.0
2018	147101	1043.0	1082	8.0
2008	3732404	1023.0	46852	13.0
2012	1730670	974.0	20299	11.0
2011	1790543	858.0	21979	11.0
2021	21655	585.0	161	4.0

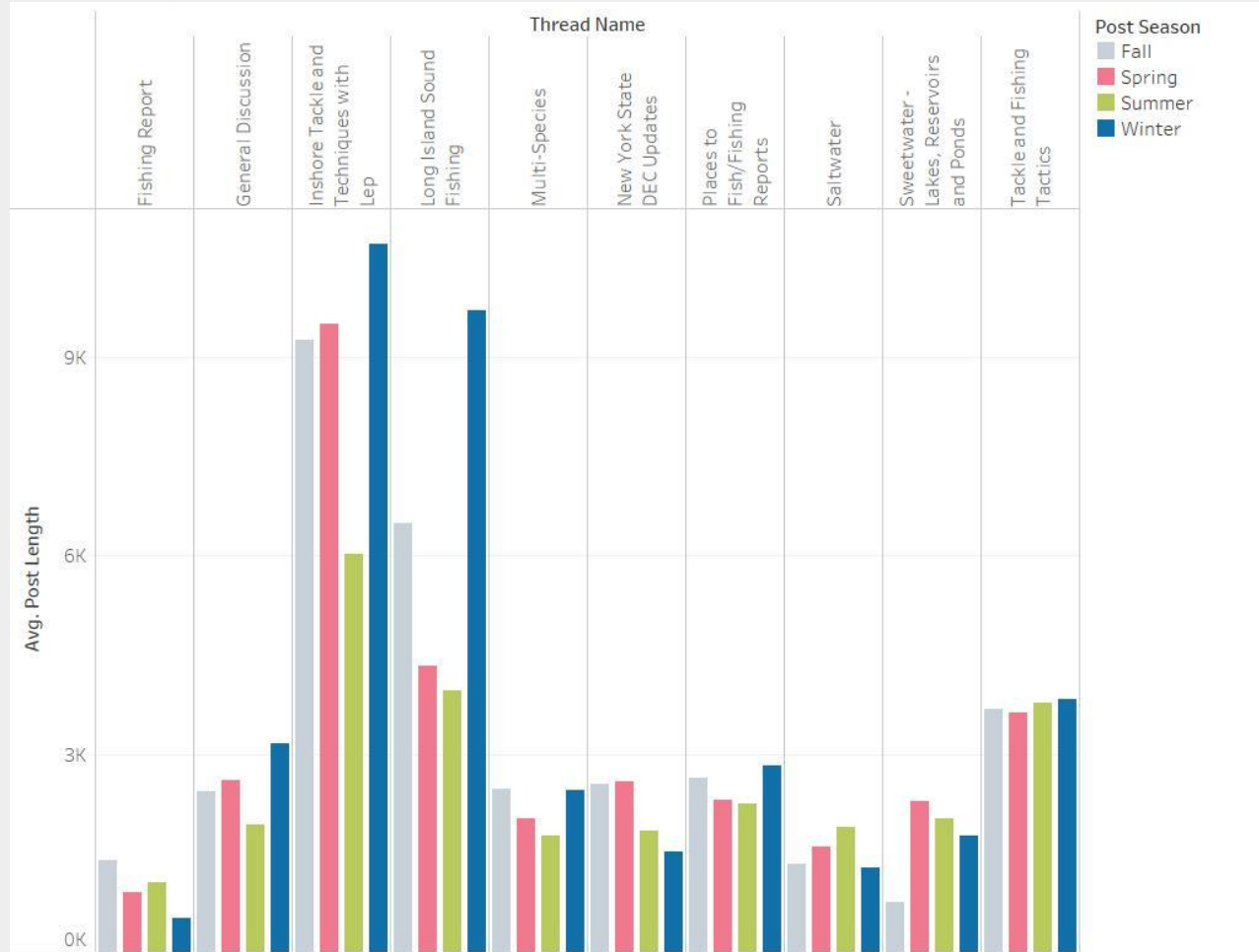
Post_Month	Post_Views		Post_Replies	
	sum	mean	sum	mean
Feb	2316595	1447.0	20876	13.0
Jan	2577242	1447.0	21966	12.0
Dec	2205953	1424.0	20423	13.0
Oct	2520136	1308.0	23365	12.0
Mar	3352338	1307.0	31764	12.0
Nov	2420474	1306.0	23097	12.0
Sep	2521258	1219.0	22301	11.0
Aug	2873682	1167.0	25749	10.0
Jul	3249816	1139.0	28653	10.0
Apr	3583872	1101.0	37623	12.0
Jun	3086529	1078.0	28944	10.0
May	2934406	1028.0	28382	10.0

Post_Season	Post_Views		Post_Replies	
	sum	mean	sum	mean
Winter	7099790	1440.0	63265	13.0
Fall	7461868	1276.0	68763	12.0
Spring	9870616	1138.0	97769	11.0
Summer	9210027	1126.0	83346	10.0

Thread_Name	Post_Views		Post_Replies	
	sum	mean	sum	mean
Multi-Species	1603536	1566.0	10128	10.0
Tackle and Fishing Tactics	12135753	1394.0	112868	13.0
Places to Fish/Fishing Reports	19258812	1119.0	185742	11.0
Saltwater	644200	940.0	4405	6.0



Average of Post Length for each Post Year broken down by Post Season. Color shows average of Post Length. The view is filtered on Post Year, which keeps 11 of 19 members.



Average of Post Length for each Post Season broken down by Thread Name. Color shows details about Post Season. The data is filtered on Post Year, which keeps 11 of 19 members.