WISCONSIN DEPARTMENT OF NATURAL RESOURCES

Fisheries Survey Report for Flathead Catfish in Petenwell Lake, Wisconsin from 2014-2022

WATERBODY IDENTIFICATION CODE 1377100

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Executive Summary

In 2014, a flathead catfish survey was started for the Wisconsin River below the Nekoosa Dam, this is a summary of the survey efforts through 2022. The relative abundance of flathead catfish appears to be stable and if not increasing. Size structure is good and comparable to the flathead catfish population in the nearby Baraboo River. Anglers have the opportunity to catch quality size (20 inches), preferred size (28 inches), memorable (34 inches) and trophy size (40 inches) flathead catfish. Growth and body condition were good. Future flathead catfish surveys should focus sampling when water temperatures are closer to the lower end of their spawning window and more effort is needed to hit target numbers to better assess size structure trends. PIT tagging should continue to assess growth, longevity in the system, movement and estimate abundance. Floy tagging, an external tag that is visible to anglers, should also be incorporated into the survey to connect with anglers and get some pulse of catch, exploitation, movement and their overall fishing experience. Petenwell Lake does not allow the use of setlines and set and bankpoles, all which do occur on other waters for flathead catfish in Wisconsin. More information on the flathead catfish population and angler harvest in Petenwell Lake and the Wisconsin River is needed to justify any changes in the fishing regulation. Currently the flathead catfish population is stable or increasing and size structure is good.

Introduction

Flathead catfish *Pylodictis olivaris* populations are present in the Wisconsin River from below Nekoosa Dam to the Mississippi River. There have been occasional reports of flathead catfish being caught by anglers in Biron Flowage (farther upriver in Wood and Portage Counties), but nothing confirmed by Wisconsin Department of Natural Resource (DNR) survey work. Flathead catfish flourish in large turbid rivers with woody structure and complex habitats and they also survive in lakes and reservoirs. Flathead catfish can also be found in other rivers of the Mississippi River drainage system including the St. Croix, Red Cedar, Chippewa, La Crosse, Black, Trempealeau, Pecatonica, Sugar and Rock Rivers. Flatheads also occur in the Lake Michigan drainage system including the Waupaca, Fox and Lower Wolf Rivers, Green Bay and Lake Winnebago. The fishing regulation for catfish on the Wisconsin River is a daily bag limit of 10 in aggregate of channel catfish and flathead catfish.

Flathead catfish are the largest member of the catfish family in Wisconsin and are considered long-lived. Some age estimation work has found them to be 24 and 30 years old (Paruch 1979; DNR 2016). The current hook and line record is 74lbs 5.1 oz, 53 inches caught in the Mississippi River (Vernon County; 3/30/2001). The state record live release flathead catfish was caught in the Saint Croix River (Polk County; 6/22/21) and was 51.5 inches. Alternative methods records include a 50lbs 1.6oz 47.25-inch fish from the Wisconsin River by bow/spearing (Columbia County; 8/15/20) and a 34lbs 7.2oz 43.5-inch fish by hand on the Waupaca River (Waupaca County; 7/3/21). Flathead catfish spawn in late June and July. Fish mature at age 4-7 years when they reach 16-24 inches (Munger et al. 1994), yet DNR have found flathead catfish to mature at older ages and larger sizes than other locations in their range.

Flathead catfish are ecologically important, they are a top predator in large river systems and may play a role in fish community structure. They do not appear to be prey selective with their diet; diet is proportional to prey availability (Pine et al. 2005). Flathead catfish are also an important host fish for glochidia of several freshwater mussel species including buckhorn *Tritogonia verrucosa*, a state threatened species, along with washboard *Megalonaias gigantea*, pimpleback *Quadrula pustulosa*, and mapleleaf *Quadrula quadrula* (DNR 2016).

SURVEY EFFORT

Beginning in 2014, Wisconsin Rapid's DNR Fisheries Staff started an annual survey on the Wisconsin River (Petenwell Lake) to assess the flathead catfish population. Flathead catfish are not effectively surveyed during spring surveys that target northern pike, walleye, muskellunge and other gamefish species. Some common survey methods used in Wisconsin to survey flathead catfish include low-pulsed direct current electrofishing, hoop nets, baited lines and hand capture. Low-pulsed direct current electrofishing was found to be an effective method for the Wisconsin River below the Nekoosa Dam. Hoop netting took place a couple years as well yet was not as effective as electrofishing.

Methods

The flathead catfish survey takes place in the summer, late-June to early-July. On a couple of years (2015, 2021; Table 1), the survey took place in August as DNR crews have sampled during this time frame in other Wisconsin waters. We have found though that targeting flathead catfish in late-June and early-July sampling is necessary if the objective is to target the spawning population. Several transects in the riverine portion of the flowage between Nekoosa Dam and Petenwell Lake are surveyed on a recurring basis to monitor the flathead catfish population (Figure 1). Transects are each 1 mile long.

A low-pulsed direct current electrofishing method is used to target the flathead catfish. This method affects the fish's swim bladder where the air is released, and the fish rises to the surface. Small channel catfish are sometimes observed during the surveys, but this method does not affect other species of fish. Pulsed direct current was generated with a pulse rate of 10-12%, duty cycle of 25, electrical output was 315-600 volts and 1.6-2.5 Amperes, where only one dropper is used, and the dropper is wrapped in electrical tape until the target range of electrical output is achieved. The electrofishing boat travels at a slow speed (with the river current) in a downstream manner, occasionally idling to hoover over woody structure. Two dippers are on the front of the boat to catch flathead catfish. In 2017, 2019, 2021 and 2022 a chase boat was added to the survey. Flathead catfish rise to the surface sometimes behind the electrofishing boat or in locations that are more difficult for the electrofishing boat to reach. The chase boat is a mini-boom electrofishing boat that allows one dipper to wear a seat belt and catch fish as the operator navigates to them (no shocking occurs with this mini-boom shocker).

Hoop nets were tried in 2014 and was the only survey gear used in 2020; hoop nets were an approved survey gear at the time during the Covid-19 pandemic. Hoop nets start as unbaited, if a flathead catfish was caught in a net it was left in the net as bait to attract other flatheads.

All flathead catfish captured were measured to the nearest 0.1 inch, checked for a Passive Integrated Transponder (PIT) tag, most were tagged with a PIT tag if needed and a subsample weighed to the nearest pound then released. Tagging did not start until 2015.

Relative abundance and size structure were evaluated. Relative abundance was indexed using catch per unit of effort (CPUE) which is the number of fish captured per unit of effort (mile; hour). CPUE of stock size (14 inches), quality size (20 inches), preferred size (28 inches), memorable size (34 inches) and trophy size (40 inches) were calculated (Neumann et al. 2012). Size structure was evaluated using proportional stock density (PSD) of those size categories as well, where PSD is the percentage of fish that are at least stock size that are quality, preferred, memorable or trophy sizes and larger.

Growth was evaluated using PIT tag recapture data and body condition was evaluated by looking at weight (lbs.) versus length (inches) to see if fish were skinny, isometric (normal) or plumper with length (Neumann et al 2012). In addition, relative weight was calculated for fish greater than 5 inches to see if fish are in good body condition (Bister et al. 2000, Neumann et al 2012).

Results

RELATIVE ABUNDANCE

Relative abundance of flathead catfish has ranged from 3.0 to 8.5 fish per mile or 4.9 to 9.6 fish per hour (Tables 2-3). Catch per effort (CPUE) could be influenced by river flows and water temperature, as this has varied over the years (Table 1). Catches of larger (memorable and trophy sized) flathead catfish were caught in June of 2021 but were not caught in August of 2021 (Table 3 and 4). In addition, the 2015 survey took place in August and no trophy fish and only one memorable sized fish were caught. Conducting these surveys in late-June and early-July is necessary for sampling these large fish during their spawning period. The number of males and females caught in a survey varies, yet fewer females to males were apparent during the surveys that took place during August (Table 2). Overall, the relative abundance of flathead catfish is stable if not potentially increasing (Figures 2 and 3). A chase boat was incorporated into the 2017, 2019, 2021 and 2022 surveys which may increase our efficiency in catching flathead catfish, yet CPUE values still increased during that time.

SIZE STRUCTURE

Considering only surveys that took place in late-June and early-July, the sizes of fish caught, and the size distribution of the flathead catfish population can vary year to year, yet does not display any trends (Table 5, Figures 2-5). The maximum size fish caught during a survey has ranged from 40.4 to 44.7 inches with a mean length of 41.9 inches. The minimum size fish caught ranged from 7.2 to 8.2 inches with a mean length of 8.0 inches. The mean length of all fish caught from all surveys was 23.5-inches and has ranged from 21.4 to 25.9 inches. The proportion of fish 20 inches and greater has ranged from 70 to 100, with a mean of 83. The proportion of fish 28 inches and greater has ranged from 28 to 52 with a mean of 37. The proportion of fish 34 inches and greater ranged from 15-40 with a mean of 26. The proportion of fish 40 inches and greater has ranged from 2 to 13 with a mean of 5. 2022 had the most trophy fish observed.

GROWTH

Twenty-three PIT tagged flathead catfish were recaptured after a sufficient time to look at growth (Table 6; Figure 8). Growth rate really depends on the size of initial capture, as smaller individuals will grow faster than larger fish. This is typical with all fish; growth rates start fast and then growth rate slows as they reach sexual maturity and their maximum final length. Growth rates can be different for males and females, yet with flathead catfish there is generally no difference in growth between the sexes (Montague and Shoup 2021). 23 recaptured fish is a small sample size yet gives us an idea that growth is good for the flathead catfish in Petenwell Lake. The average growth rate was 1.6 inches per year yet ranged from 0.02 to 4.2 inches per year. For the subsampled fish that were weighed, and length measured, body condition is good where fish are growing plumper with length (Figure 6; b= 3.2) and most individual fish had relative weight values ≥ 100 indicating good to excellent body condition (Figure 7).

TAGGING INFORMATION

Over the years, 235 flathead catfish have been PIT tagged and 26 individuals have been recaptured at some point (Figure 8, Table 6-7). That is 11% of tagged fish have returned. In general, the location of the tagged flathead catfish was the same transect or near the transect in which the fish had been tagged.

Discussion and Recommendations

Our sampling of flathead catfish using low-pulsed DC electrofishing during late-June and early July show that the population may be increasing in abundance or is stable. Montague and Shoup (2021) completed an extensive literature review of flathead catfish research from 1999 until 2021. Based on their review, the low-pulsed DC electrofishing method is appropriate for monitoring flathead catfish in the river portion of Petenwell Lake, however this sampling method may underestimate the numbers of larger flathead catfish and the efficiency of the gear is not known. Radio tagged flathead catfish in the Wolf and Fox River Systems did not surface when conducting low pulsed DC electrofishing over them, showing that evaluating gear efficiency is needed (Al Niebur, Wisconsin Department of Natural Resources, personal communication 2022). Adding another gear such as baited hoop nets, trot-lines or hook and line fishing might help target larger flathead catfish (Montague and Shoup 2021), yet having standardized sampling is important. Over the years, water temperature during our sampling ranged from 72-83°F, yet flathead catfish typically spawn between 66.2-75.2°F (Jackson 1999). Fish may have moved after spawning and prior to our sampling. This was likely the case when surveys took place in August, as larger fish were not in the sample and predominantly males. Flathead catfish work has shown that fish tend to have three distinct migration periods: overwintering, prespawn/spawn and late summer/fall (Montague and Shoup 2021), and water temperature rather than calendar days is what drove movement (Piette and Niebur 2011). Much is unknown about flathead catfish and whether spawning occurs annually for individuals, if they are monogamous, and what proportion of a population spawns for a given year. Some of our July sampling occurred when waters were warmer than their spawning temperature range or towards the end of the spawning period. In the future, our goal should be to sample our transects within the prespawn/spawning water temperature range for flathead catfish to capture more larger sizes.

Size structure of the flathead catfish population is relatively stable and offers anglers an opportunity to catch trophy size fish. The relative abundance of quality size (20 inches) and preferred size (28 inches) may be increasing or is at least stable. The CPUE trends of fish when calculated using distance (miles) and time (hours) is a bit different. Distance is always standard with the same transect surveyed, yet the amount of time shocked per transect could vary as it take more time to chase down fish if their numbers are higher or where they pop up when sampling. Distance is a more standardized effort. Again, our sampling may under sample the larger fish in the population and for some years fish may have left our sampling location prior to sampling, which would underestimating CPUEs and affect trends. Niebur et al. (2010) found a high degree of gear size selectivity between low pulsed DC electrofishing, hoop nets, scuba, baited line and angler caught for flathead catfish sampled on the Wolf and Fox Rivers, Wisconsin. The PSD indexes for the Wolf and Fox Rivers varied by those sampling gears: PSD 30-99, PSD-P 9-81, PSD-M 3-43 and PSD-T 2-10. The size distribution of the flathead catfish population in the Baraboo River, Wisconsin was similar to the population in Petenwell Lake. Flathead catfish were sampled in the Baraboo River using

hoop nets during the spring and fall from 2000-2003 (Bradd Simms, Wisconsin Department of Natural Resources, personal communication 2022). PSD values ranged from 81-87, PSD-P ranged from 32-45, PSD-M ranged from 9-34 and PSD-T ranged from 2-13. 2003 PSD values were almost identical to the 2022 Petenwell population, where PSD was 85, PSD-P was 45, PSD-M was 34 and PSD-T was 13. The minimum sample size for PSD calculation is 50, which was only achieved in 2014 and 2022 for our surveys. Sampling flathead catfish within their prespawn/spawning window and increased effort is recommended for our survey to achieve that minimum sample size. Examining other sampling gears and understanding the behavior of flathead catfish in Petenwell Lake would be necessary to understand the population more.

A 11% return on PIT tagged fish seems low yet may be normal. Flathead catfish are also tagged on the Wisconsin River below the Prairie du Sac Dam and of the 276-Flathead catfish PIT tagged 26 (9.4%) have been recaptured at some point (Bradd Simms, Wisconsin Department of Natural Resources, personal communication 2022).

We do not know total annual mortality or exploitation rate of flathead catfish for Petenwell Lake; we know that fish are harvested via talking with anglers, wardens and social media posts. Noodling does take place on Petenwell Lake. A commercial fishery does not exist, and use of bank pole gear is not allowed. Overall, the flathead catfish fishery is becoming more popular. Anglers do prefer to catch trophy size flathead catfish; however, flathead catfish anglers are harvest oriented (Montague and Shoup 2021). Winders and McMullen (2021) found recreational anglers to be size selective of flathead catfish in the Missouri River and Mississippi river, where anglers selected mid- to larger-size fish rather than small sizes. The research summarized by Montague and Shoup (2021) found that total annual mortality rates ranged from 0.14-0.62 in rivers where they're native and 0.16-0.37 in rivers where they were introduced. Annual exploitation rates in rivers ranged from 4.5% to 19%. Niebur et al. (2010) completed a tagging study on the Fox and Wolf River Systems and found exploitation rate of preferred size fish ranged from 14-33%. Most (95%) of the harvest was by setlines, yet they suspected rod and reel anglers had very high nonreporting of tagged fish. Population dynamics of increased recruitment and earlier age at maturation were observed for invasive populations studied that were heavily harvested and that high harvest pressure may be needed to control those invasive populations (Montague and Shoup 2021). Fishing regulations have little impact on a population if there is low fishing and natural mortality rates. Regulations could impact a population if harvest is high, yet modeling work done by others show that understanding the effect of a regulation on a flathead catfish population is tricky. How the population dynamics respond to harvest complicates results. Evaluating harvest and exploitation of flathead catfish for Petenwell Lake is needed, tagging fish with external tags that anglers can see is recommended for future monitoring.

Recaptured flathead catfish in Petenwell were caught in general at the locations tagged, which is expected. Multiple tracking studies have found high site fidelity to their seasonal habitats (Montague and Shoup 2021). Niebur et al. (2010) found angler tag returns and survey recaptures showed that flathead catfish showed high site river fidelity where 99% of tags returned were from the river where the fish were first tagged.

Growth and body condition of flathead catfish is good to excellent based on the limited PIT tag recapture data and the subsampled fish for weights. If we wanted to conduct any simulation work to evaluate how different fishing regulations could impact size structure of the population, we would need age data to look at growth and recruitment more closely in

addition the need for angler exploitation. Pectoral spines and otoliths have been used to estimate the age of flathead catfish, yet no age validation work exists to know if the structures are accurate (Montague and Shoup 2021). Pectoral spines are believed to underestimate the age of larger older fish and that otoliths are a better structure. Otoliths do require sacrificing the fish, which is undesirable when relatively few fish are handled each year during our surveys, and they are a long-lived species. For future monitoring, all flathead catfish handled should be PIT tagged in a different body location, the dorsal musculature, which will allow us to PIT tag all small fish too. A subsample of the small fish would be sacrificed to estimate age with both structures, which will be assumed to be the true age for a given size. The PIT tagged fish will be used for growth information if recaptured again during surveys. We could also work with anglers that harvest flathead catfish to collect aging structures, length and weight data.

Acknowledgements

The data collected for this report would not have been possible without many DNR staff over the years either operating the chase boat or dipping fish and working up the fish. Thank you to Colton Wolosek, Pete Kleinschmidt, Catlin Brillowski, Austin Hoffman, Tom Meronek, Brad Betthauser, Isaac Barber, Trevor Raatz, Timothy Parks, Lucas Erickson, Lucas Koenig, Nate Nye and Bradd Simms.

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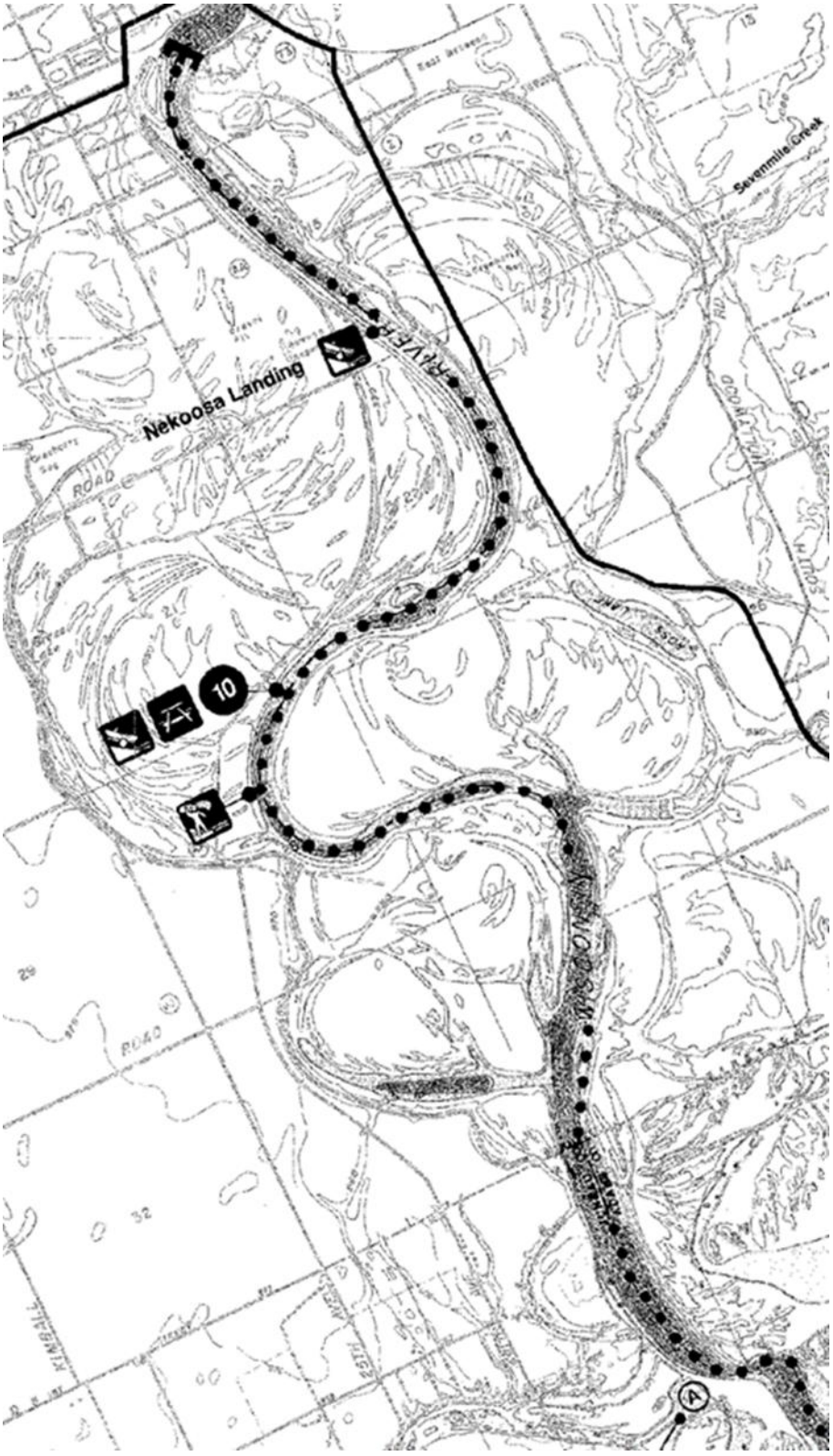
Figure 1. Map of the Wisconsin River below the Nekoosa Dam.



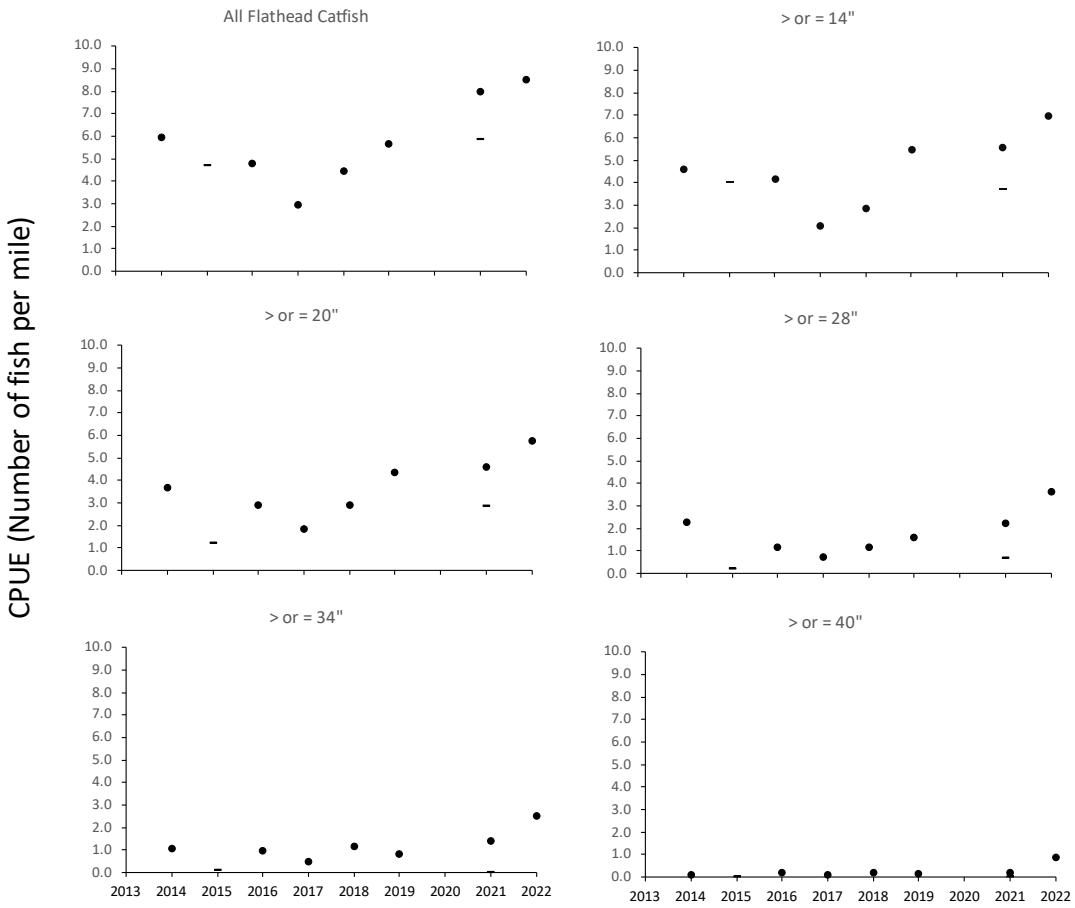


Figure 2. – Catch per effort (CPUE, number per mile) of flathead catfish and by different size groups (fish that were equal to or larger than stock, quality, preferred, memorable and trophy sizes) for Petenwell Lake surveys in 2014-2019, June and August of 2021 and 2022.

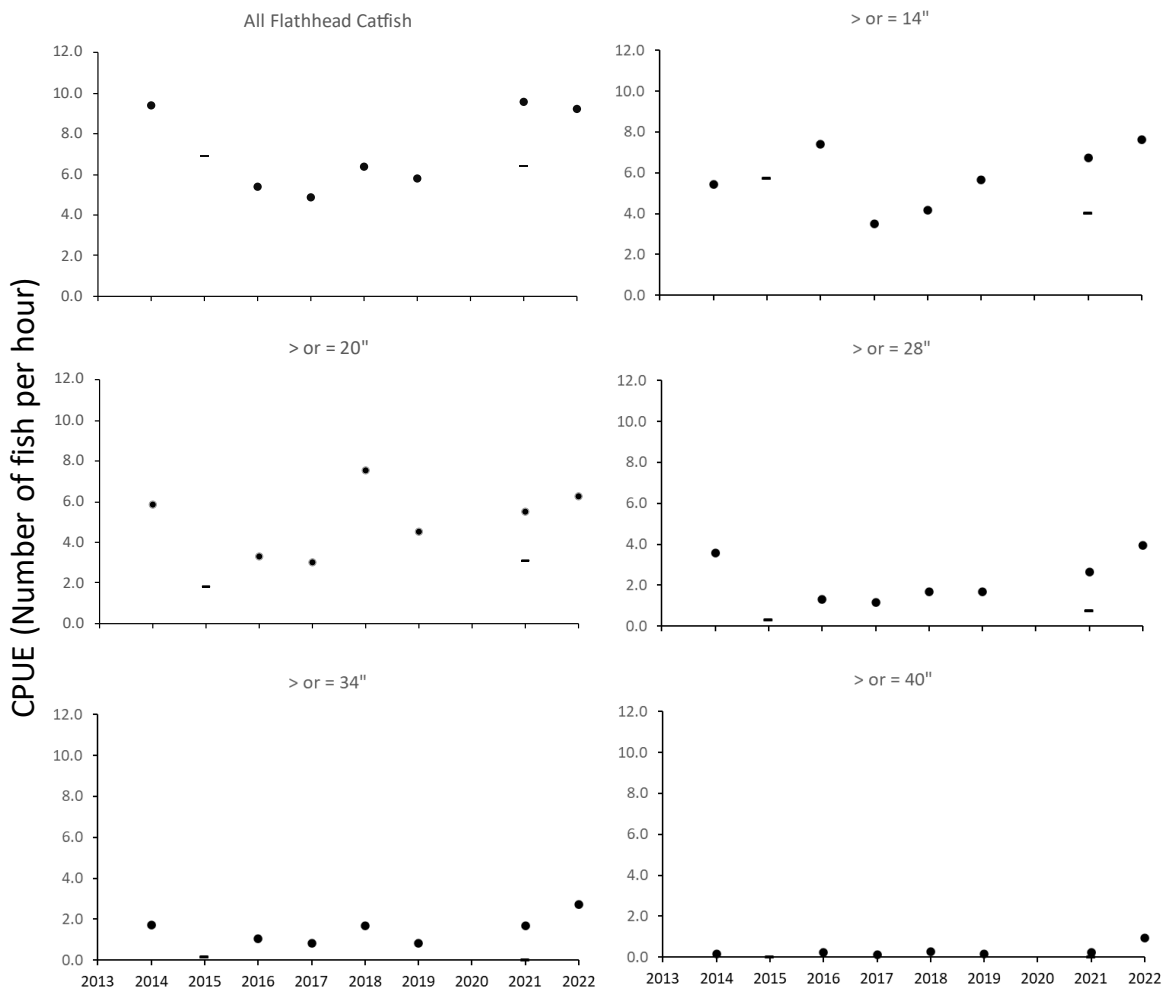


Figure 3. – Catch per effort (CPUE, number per hour) of flathead catfish and by different size groups (fish that were equal to or larger than stock, quality, preferred, memorable and trophy sizes) for Petenwell Lake surveys in 2014-2019, June and August of 2021 and 2022.

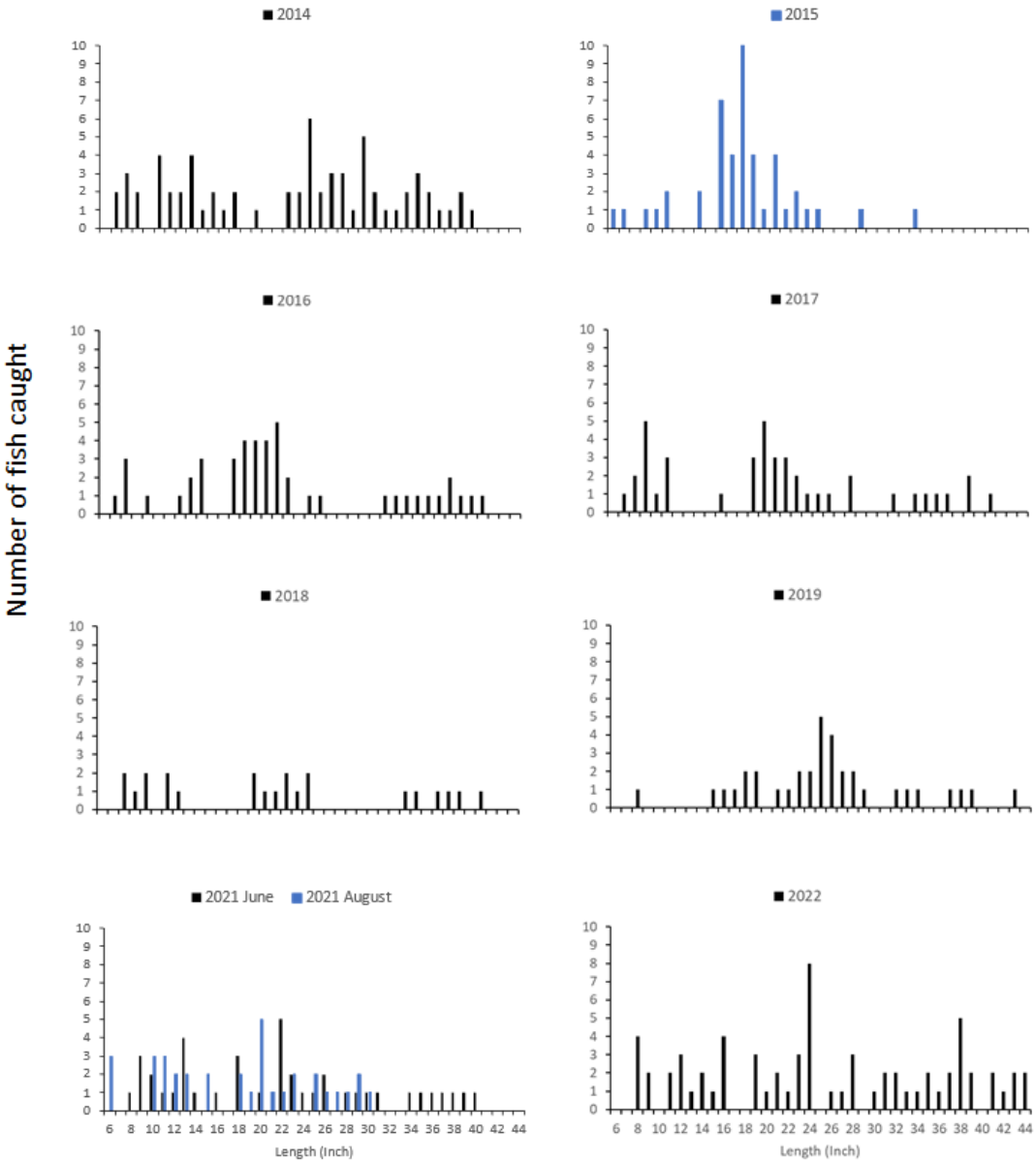


Figure 4. – Length frequency of flathead catfish caught during the electrofishing surveys conducted on Petenwell Lake in late-June and early July of 2014, 2016-2019, 2021 and 2022. 2015 and 2021 surveys were in August.

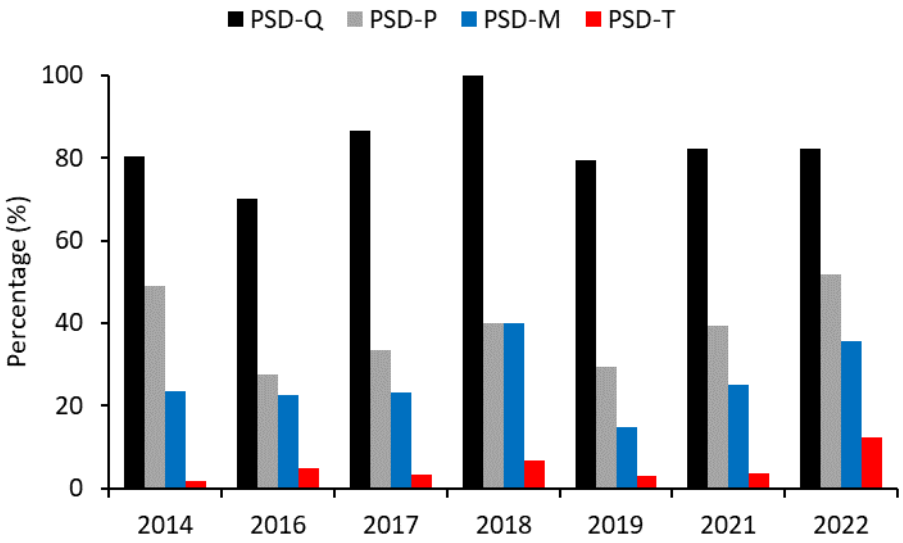


Figure 5. – Proportional Size Distribution (PSD) of quality (20"), preferred (28"), memorable (34") and trophy (40") size and larger flathead catfish for Petenwell Lake in 2014, 2016-2019, 2021 and 2022 caught during late-June to early July using low-pulsed DC electrofishing.

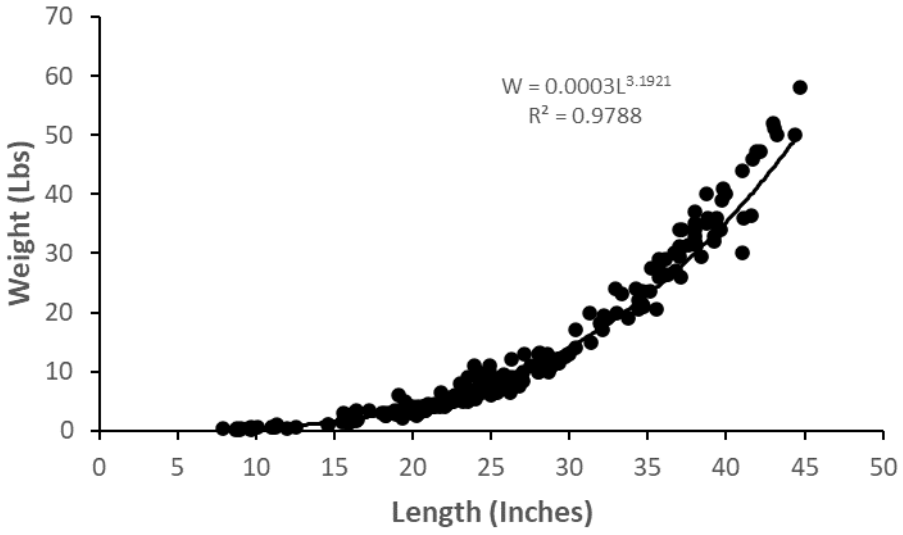


Figure 6. – Weight (pounds) versus length (inches) of flathead catfish sampled during the electrofishing surveys in 2014-2019, June and August of 2021 and 2022 for Petenwell Lake.

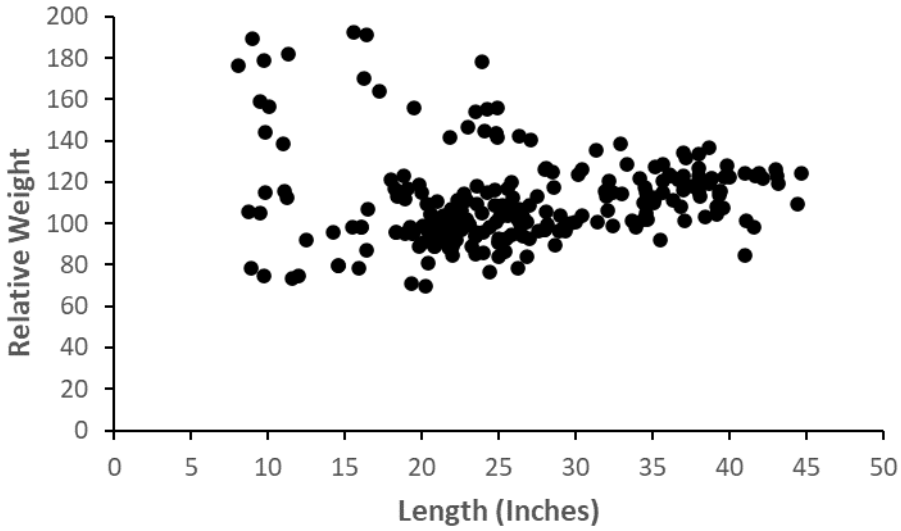


Figure 7. – Relative weight versus length (inches) of flathead catfish sampled during the electrofishing surveys in 2014-2019, June and August of 2021 and 2022 for Petenwell Lake.

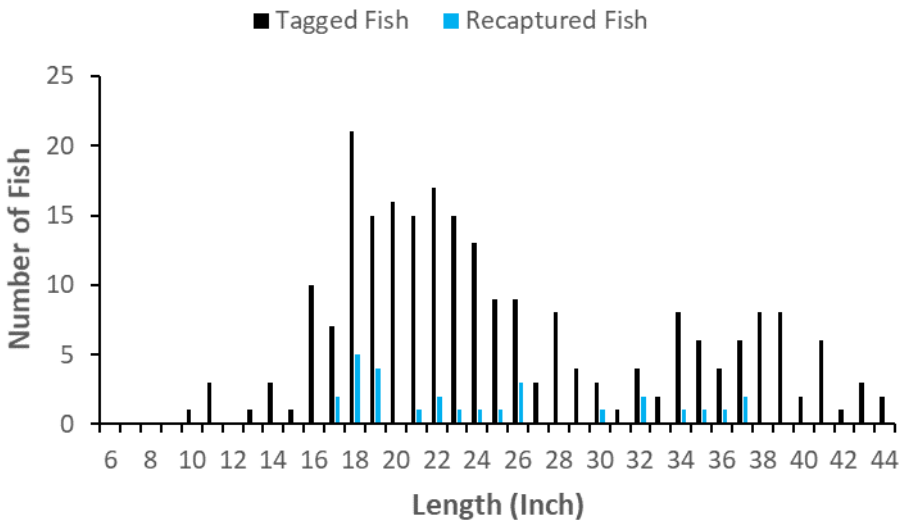


Figure 8. – Length of flathead catfish that were PIT tagged and those tagged fish (length at tagging) that were recaptured during a later sampling event during the electrofishing surveys in 2015-2019, June and August of 2021 and 2022 and hoop netting in 2020 for Petenwell Lake.

Table 1. – Flathead catfish surveys completed for Petenwell Lake in 2014-2022.

Year	Begin Date	End Date	River Flow (CFS)	Water Temp. (°F)	Distance Surveyed (Miles)	Hours Sampled	Number of Net-Nights
2014	06/16/14	06/19/14	2,838	72-73	11.1	7.0	
2015	08/13/15	08/17/15	2,158	77-81	9.8	6.7	
2016	06/27/16	06/29/16	7,000-9,000	75	9.6	8.5	
2017	07/05/17	07/12/17	4,500-5,100	75-79	14.2	8.6	
2018	07/03/18	07/03/18	2,200	82-83	5.2	3.6	
2019	07/02/19	07/03/19	7,900	74	6.2	6.0	
2020	07/06/20	07/10/20	3,209	80-80.2		-	35
2021	06/28/21	06/29/21	6,543	71-72	5.0	4.2	
2021	08/02/21	08/03/21	4,273	75	6.0	5.5	
2022	06/29/22	07/05/22	3,184	72-74.5	8.0	7.3	

Table 2. – Total number of flathead catfish caught and numbers that were male, female or unknown (due to did not examine the fish or could not identify) for Petenwell Lake electrofishing surveys from 2014-2022, except 2020 was hoop-netting.*

Year	Number Caught	Number Males	Number Females	Number Unknown
2014	66	-	-	66
2015 (August)	46	34	9	3
2016	46	15	10	21
2017	42	10	16	16
2018	23	-	-	23
2019	35	16	17	2
2020*	11	1	4	6
2021 (June)	40	14	14	12
2021 (August)	35	13	7	15
2022	68	38	15	15

Table 3. – Relative abundance (CPUE; number of fish per mile) of flathead catfish caught during electrofishing by total and size.

Year/CPUEs (mile)	Total CPUE	Stock (≥14”)	Quality (≥20”)	Preferred (≥28”)	Memorable (≥34”)	Trophy (40”)
2014	5.9	4.6	3.7	2.3	1.1	0.1
2015 (August)	4.7	4.0	1.2	0.2	0.1	0.0
2016	4.8	4.2	2.9	1.1	0.9	0.2
2017	3.0	2.1	1.8	0.7	0.5	0.1
2018	4.4	2.9	2.9	1.2	1.2	0.2
2019	5.6	5.5	4.4	1.6	0.8	0.2
2021 (June)	8.0	5.6	4.6	2.2	1.4	0.2
2021 (August)	5.8	3.7	2.8	0.7	0.0	0.0
2022	8.5	7.0	5.8	3.6	2.5	0.9

Table 4. – Relative abundance (CPUE; number of fish per hour) of flathead catfish caught during electrofishing by total and size.

Year/CPUEs (hour)	Total CPUE	Stock (≥14”)	Quality (≥20”)	Preferred (≥28”)	Memorable (≥34”)	Trophy (40”)
2014	9.4	5.4	5.8	3.6	1.7	0.1
2015 (August)	6.8	5.7	1.8	0.3	0.1	0
2016	5.4	7.4	3.3	1.3	1.1	0.2
2017	4.9	3.5	3.0	1.2	0.8	0.1
2018	6.4	4.2	7.5	1.7	1.7	0.3
2019	5.8	5.7	4.5	1.7	0.8	0.2
2021 (June)	9.6	6.7	5.5	2.6	1.7	0.2
2021 (August)	6.4	4.0	3.1	0.7	0	0
2022	9.3	7.6	6.3	4.0	2.7	1.0

Table 5 – Size structure of flathead catfish for Petenwell Lake from 2014-2022 from electrofishing surveys except 2020 are fish caught hoop-netting.*

Stock, Quality, Preferred, Memorable, Trophy Sizes (14, 20, 28, 34, 40 Inches)	Average Length	Length Range	n	PSD-Q	PSD-P	PSD-M	PSD-T
2014	23.8	7.2-40.5	51	80	49	24	2
2015 (August)	18.6	6.4-34.5	39	70	5	3	0
2016	22.8	7.3-41.6	40	70	28	23	5
2017	21.4	7.9-41.1	30	87	33	23	3
2018	22.6	8.2-41.7	15	100	40	40	7
2019	25.9	8.4-43.0	34	79	29	15	3
2020*	27.9	18.0-41.0	11	-	-	-	-
2021 (June)	18.3	8.7-40.4	28	82	39	25	4
2021 (August)	22.1	6.0-30.0	22	77	18	0	0
2022	25.9	8.0-44.7	56	82	52	36	13

Table 6 – Passive Integrated Transponder (PIT) tag summary data for flathead catfish in Petenwell Lake that were tagged during 2014-2022 from electrofishing surveys except 2020 are fish caught hoop-netting.*

Year	#PIT Tags	% Of Catch that were PIT Tagged	Min Size (In)	Max Size (In)	Number of Tagged Fish Recaptured of the Tagged Fish for Year	%Tagged fish that were Recaptured
2014	0	-	-	-	-	-
2015	42	91	10.1	34.5	6	14
2016	30	65	18.1	41.6	5	17
2017	27	64	11.3	41.1	2	7
2018	15	65	20.3	41.7	1	7
2019	31	89	15.6	43.0	5	16
2020*	9	82	18.0	41.0	1	11
2021	40	53	13.9	40.4	6	15
2022	41	60	14.6	44.7	-	-

Table 7. – Passive Integrated Transponder (PIT) tagged summary data for recaptured flathead catfish in Petenwell Lake that were tagged during 2015-2022 from electrofishing surveys except 2020 are fish caught hoop-netting.*

Fish ID	Sex	Year Tagged	Year(s) Recaptured	Days at Large	Initial Size (In)	Recap. Size (In)	Growth (In)	Growth Rate (In/year)
606	Male	2015	2015	4	17.0	-	-	-
611	Male	2015	2016	316	19.3	20.1	0.8	0.9
669	Female	2015	2016	321	19.4	21.0	1.6	1.8
691	Male	2015	2016	321	25.0	26.2	1.2	1.4
973	Male	2015	2019, 2020	1419; 1790	18.7	25.2; 28.4	6.5; 3.2 (9.7)	2.0
299	Female	2015	2017, 2021	693; 2177	18.1	22.2; 29.2	4.1; 7.0 (11.1)	1.9
423	Female	2016	2017	377	19.6	23.9	4.3	4.2
367	Male	2016	2017	376	21.9	25.0	3.1	3.0
015	Male	2016	2017	376	22.4	26.3	3.9	3.8
764	Female	2016	2021	1826	18.3	29.3	11.0	2.2
017	Male	2016	2022	2197	35.7	38.0	2.3	0.4
154	Female	2017	2022	1821	36.1	38.0	1.9	0.4
052	Female	2017	2022	1821	37.1	37.2	0.1	0.02
2669	Female	2018	2019	364	34.4	34.6	0.2	0.2
081	Male	2019	2020	371	17.2	20.9	3.7	3.6
979	Male	2019	2021	728	26.3	31.4	5.1	2.6
901	Female	2019	2022	1094	32.4	33.3	0.9	0.3
191	Male	2019	2022	1094	19.8	28.1	8.3	2.8
052	Female	2019	2022	1099	37.0	37.2	0.2	0.07
348	Male	2020	2022	723	23.1	23.9	0.8	0.4
964	Female	2021	2021	35	22.3	23.1	0.8	-
715	Male	2021	2021	35	18.4	19.2	0.8	-
221	Male	2021	2021	35	24.7	25.6	0.9	-
517	Male	2021	2021; 2022	36; 372	26.6	27.0; 27.5	0.4; 0.5 (0.9)	0.9
449	Male	2021	2022	331	30.3	31.3	1.0	1.1
2517	Male	2021	2022	366	22.9	24.1	1.2	1.2
396	Male	2021	2022	371	18.8	21.5	2.7	2.7