



Summary of 2021 Northern Pike Suppression Results on Boundary Reservoir, Pend Oreille River, WA.

In 2021, a total of 150 nets were deployed and 172 Northern Pike removed between March 09 and April 22, with a final catch-per-unit-effort (CPUE) of 1.15 NP/net-night. In total, 788 NP have been removed since mechanical suppression effort began in Boundary Reservoir in 2016. The Kalispel Natural Resources Department collected 26 Northern Pike during the 2021 Spring Pike Index Netting (SPIN) Survey conducted May 11 through May 12. The resulting CPUE of 0.87 (\pm 0.41) NP/ net-night in sloughs and mainstem river between Box Canyon Dam and Metaline Falls was not significantly different than the \leq 0.50 NP/net-night target for the reservoir.

Mechanical Removal:

- Netting took place from March 9 to April 22
- Netting locations were concentrated from Box Canyon Dam to Metaline Falls, with lesser effort applied from Metaline Falls to Boundary Dam
- Collected biological information such as weight, length, sex and maturity on all Northern Pike
- Total nets deployed: 150
- Overall CPUE: 1.15 NP/net-night

Northern Pike catch summary (Table 1):

- Total catch: 172 NP, 0.21 mT (458 lbs.)
- Overall size range: 328 mm to 1,100 mm TL (13-43 inches), weight: 170 g to 11,000 g (0.4 to 24.2 lbs.)
- Males averaged 505 mm TL (20 inches), 975 g (2.1 lbs.)
- Females averaged 587 mm TL (23 inches), 1,539 g (4.4 lbs.)
- Females made up an estimated 44% of the total catch (Table 1), of which an estimated 65% were sexually mature (Table 2)
- Removed 49 mature and 26 immature females
- 41% (n=70) of the NP catch was <450 mm TL (18 inches)

Mechanical Suppression Bycatch Summary:

- 19 fish species, 689 individuals (Table 3)

Spring Pike Index Netting

- Netting took place between May 10 and May 12
- Net placement sites were selected using a spatially balanced random sampling design focused on the upper section of the reservoir (Metaline Falls to Box Canyon Dam)
- One 3-person crews deployed 15 nets/day
- Collected biological information such as weight, length, sex and maturity on all Northern Pike
- Total nets deployed: 30
- Overall CPUE for Boundary Reservoir was 0.87 NP/net-night.

SPIN catch summary (Table 1)

- Total catch: 26 NP, 0.017 mT (37 lbs.)
- Overall size range: 372 mm to 672 mm TL (14.6-26.5 inches), 255 g to 2,264 g (0.6-5.0 lbs.)
- Males Averaged 430 mm TL (17 inches) and 577 g (1.3 lbs.)
- Females averaged 475 mm TL (19 inches) and 819 g (1.8 lbs.)
- Females made up 31% of the total catch, of which 25% were mature
- 77% (n=21) of the NP total catch were less than 450 mm TL (18 inches)

Tables and Figures

Table 1. Data summary and statistics for the 2021 Northern Pike suppression effort and SPIN survey in Boundary Reservoir.

	Suppression	SPIN Survey
Sampling Dates:	March 19 to April 22	May 10 to May 12
Days per Week:	4	4
Nets/Day:	10-12	15
Total Nets:	150	30
NP Catch-Per-Unit-Effort (CPUE):		
Overall CPUE:	1.15	0.87
Percent Positive Catch:	60%	46%
Most Northern Pike in one net:	6	4
NP Catch Statistics:		
Total Number:	172	26
Total Weight:	0.21 mT	0.02 mT
Total Length Range:	328 mm to 1,100 mm	372 mm to 672 mm
Weight Range:	170 g to 11,000 g	255 g to 2,264 g
Mean TL Males:	505 mm	430 mm
Mean TL Females:	587 mm	475 mm
Sex Ratio (% female):	44%	31%
Juvenile Catch (<450 mm):	41%	77%

Table 2. Estimated maturity rates of all Northern Pike removed during 2021 mechanical suppression efforts in Boundary Reservoir.

Sex	Immature	Mature	Ripe	Spawned Out
Female	35%	63%	1%	1%
Male	35%	32%	33%	0%

Table 3. Summary of fish bycatch captured during the 2021 Northern Pike mechanical suppression effort in Boundary Reservoir.

Common Name	Species Name	Number	% of Total
Salmonidae			
Brown Trout	<i>Salmo trutta</i>	14	2.03
Eastern Brook Trout	<i>Salvelinus fontinalis</i>	1	0.15
Lake Trout	<i>Salvelinus namaycush</i>	8	1.16
Lake Whitefish	<i>Coregonus clupeaformis</i>	3	0.44
Rainbow Trout	<i>Oncorhynchus mykiss</i>	28	4.06
Westslope Cutthroat Trout	<i>Oncorhynchus clarki lewisi</i>	16	2.32
Esocidae			
Grass Pickerel	<i>Esox americanus vermiculatus</i>	1	0.15
Cyprinidae			
Northern Pikeminnow	<i>Ptychocheilus oregonensis</i>	19	2.76
Tench	<i>Tinca tinca</i>	36	5.22
Catostomidae			
Largescale Sucker	<i>Catostomus macrocheilus</i>	66	9.58
Longnose Sucker	<i>Catostomus catostomus</i>	12	1.74
Ictaluridae			
Brown Bullhead	<i>Ameiurus nebulosus</i>	11	1.60
Centrarchidae			
Black Crappie	<i>Pomoxis nigromaculatus</i>	21	3.05
Largemouth Bass	<i>Micropterus salmoides</i>	5	0.73
Pumpkinseed	<i>Lepomis gibbosus</i>	26	3.77
Smallmouth Bass	<i>Micropterus dolomieu</i>	16	2.32
Percidae			
Walleye	<i>Stizostedion vitreum</i>	65	9.43
Yellow Perch	<i>Perca flavescens</i>	336	48.77
Gadiformes			
Burbot	<i>Lota lota</i>	5	0.73
Grand Total (all species)		689	