Northern Pike Pilot Removal Study

Objective:

- . Determine the feasibility of using gill netting as a tool to control the abundance of northern pike in Box Canyon Reservoir.
 - . Determine the most effective time of the spring to remove northern pike from slough locations.
 - . Identify the peak spawning period of northern pike in the Pend Oreille River.
 - . Determine bycatch (species and number).



Northern pike catch:

- . Total catch 647 NP, 1.16 t, 2,567 lbs.
- . 252 stomach samples collected
- . 68 scale/cleithra samples collected
- . 7 recaptures of NP tagged in 2010
- . 36 female fecundity samples
- . Sex ratio 40% female and fairly consistent each week
- . Spawning began in late March and peaked the 4th week of April. Over 90% of mature females collected after May 1 were postspawn.
- . Size range 279-1,135 mm TL (11-45"), weight 127-12,500 g (0.3-27.6 lbs)
- . Males averaged 611 mm TL (24")
- . Females averaged 633 mm TL (25")
- . 72% of females and 76% of males between 500-700 mm TL (20-30")
- \cdot <1% of NP collected were less than 450

Methods

Two sloughs were selected for the pilot study, one tribal and one public. Two gill nets were set in each slough once a week at randomly selected locations within the sloughs. Gill nets where set and fished overnight for an average of 17 hours. Gill nets where set perpendicular to the shoreline, anchoring one end of the net to the shore and deploying an anchor, buoy system at the opposite end. Each gill net consisted of a 150' by 6' net with variable sizes (1.0", 1.25", 1.5", 1.75", and 2" mesh sizes).

Pilot Study Conclusions

- . Likely an efficient and effective technique to control the abundance of northern pike in Box Canyon Reservoir.
- . Spring gill netting from pre-spawn to post spawn foraging appears to be when northern pike are the most concentrated in slough locations.
- . Limited amount of bycatch during this time period.
- . Gill netting northern pike has been used successfully in other western states to control the abundance of northern pike.



mm (age 1) indicating weak year class produced in 2010

Sex ratio of northern pike during the pilot removal study. 0.7 **Catch per unit effort (CPUE): CPUE Related to Pike Maturity** 0.6 . Weekly averages 4.25 NP/net night to 19.75 NP/net night 25 1.20 0.5 . Highest individual net catch 31 NP, low-Catch est 1 NP L.00 20 0.4 . Highest average catches in April and 0.80 0 May at reservoir elevations of 2035-CPUE 0.3 15 2040 ft. Temperatures during this period 0.60 0.2 were 1.2 °C warmer in sloughs than the 10 0.12 main channel of the river on average 0.40 0.1 • Catch dropped sharply with flood stage 0.02 0.01 0.01 pike 0.00 0.00 -5 flows in late May and June 0.20 . CPUE similar between locations and be-BBH BRI 0.00 tween different net orientations (small or 31222012 A12612012 51312012 511012012 511112012 512A12012 A1222011 41512011 6/1/2022 large mesh on shore) A129/2011 1312012 21291202 Shallow depths (<2 m) produced nearly 3X the catch of deep sets (>4 m)

Overall Catch 0.62 0.09 0.06 0.05 0.01 0.01 NP Species

Overall catch of all species during the pilot study. Sixty-two percent of the total catch consisted of northern pike. Three species, brown bullhead, tench, and yellow perch accounted for 69% of the bycatch. Total sample size: 48 net nights.

gests the majority of spawning took place between April 5th and May 3rd. This time period also correlates to the highest CPUEs of the Pilot Study.

CPUE related to the maturity of northern pike from the Pilot Study. The graph sug-









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Average length of northern pike by week captured in the pilot removal.