

Results Of Northern Pike Young of the Year Survey, Big Creek, Door County 2022.

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Purpose

To determine whether northern pike (*Esox Lucius*) use Big Creek in Door County, WI for spawning.

Location and Site Description

Big Creek is a tributary of the waters of Sturgeon Bay / Lake Michigan near the natural east end of Sturgeon Bay. The stream is in the Upper Door County watershed; is about 4.05 miles in length and is considered a cool-cold headwater / cool-warm headwater natural community (Figure 1).

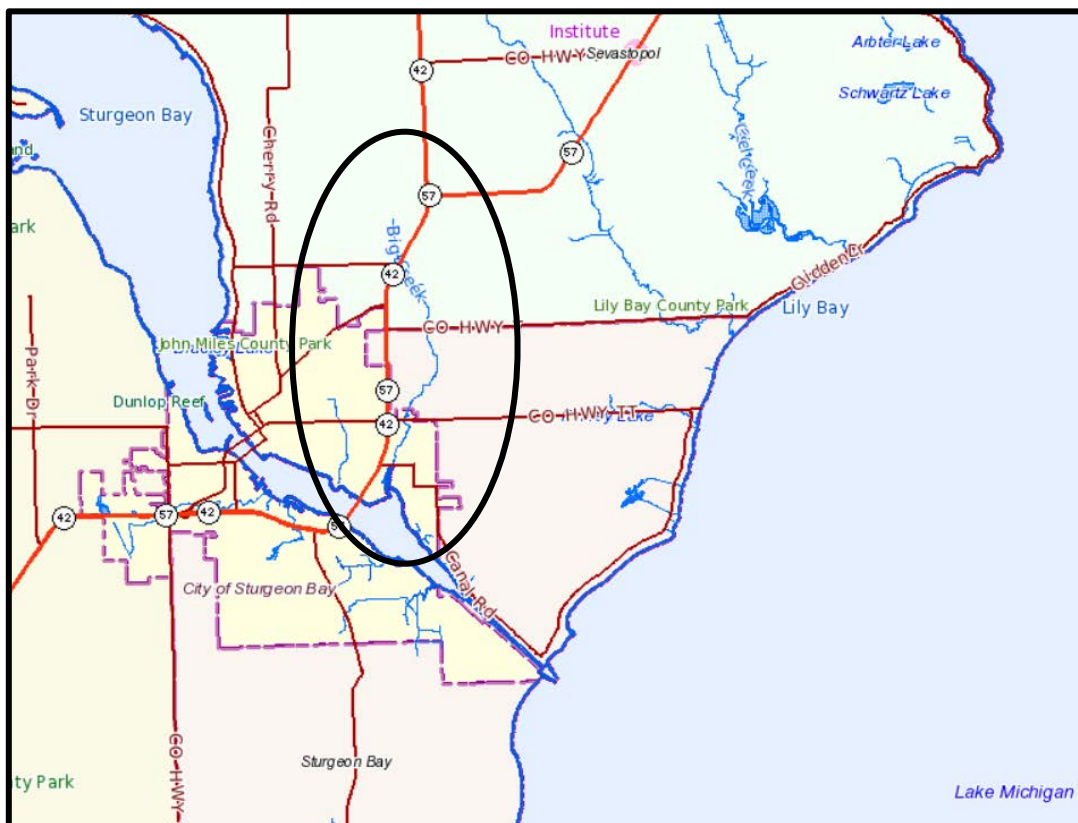


Figure 1. Location of Big Creek watershed in Door County, WI.

Big Creek drains a 6,060-acre watershed dominated by row crop and pasture agriculture which cover about 64% (3877 acres) of the watershed. (Table 1). Natural cover (wetlands, forests, scrub/shrub) cover about 24% (1461 acres) of the watershed and are positioned in depressional and riparian settings in the watershed.

Type	Area (acres)	Coverage (%)
Cultivated Crops	2172	35.83
Pasture/Hay	1705	28.14
Woody Wetlands	714	11.79
Deciduous Forest	423	6.96
Developed, Open Space	363	5.99
Developed, Low Intensity	247	4.08
Mixed Forest	166	2.73
Evergreen Forest	94	1.56
Developed, Medium Intensity	74	1.21
Emergent Herbaceous Wetlands	42	0.68
Shrub/Scrub	22	0.35
Other	40	0.26
Total	6061	100

Table 1. Big Creek Watershed land cover acreage and percent of watershed.

Methods

Young of the year northern pike traps 1 and 2 were set at 4:50 pm on May 16, 2022, just upstream of a culvert under the private farm road on Mr. Theodore Londo's property (Figures 2, 3, 4 and 5). Mr. Londo had given permission to set the traps off his property. This trap location is about 1.2 miles upstream from the point where the creek empties into the estuary-like setting on Sturgeon Bay just below the Utah Street crossing. Water temperature was 62 degrees F, and the water depth was about 9 inches for trap 1 and 10" for trap 2. Bottom substrate was sand / fine gravel in the main flow areas, side channels with slower flow held muck covered sand and riparian flooded thick reed canary grass (*Phalaris arundinacea*) growth. Stream was not shaded throughout this section.

Trap 3 was set at 5:30 pm on May 16, 2022, just downstream of the concrete box culvert under County Hwy T (Figures 2, 3, 6 and 7). Water depth at the time was 10.5" and the temperature was 64 degrees F. (As a side note the temperature of the upstream site was 2 degrees warmer on both days of recording, whether this indicates groundwater input to the stream between sites 1,2 and 3 is not known but might be suspected).

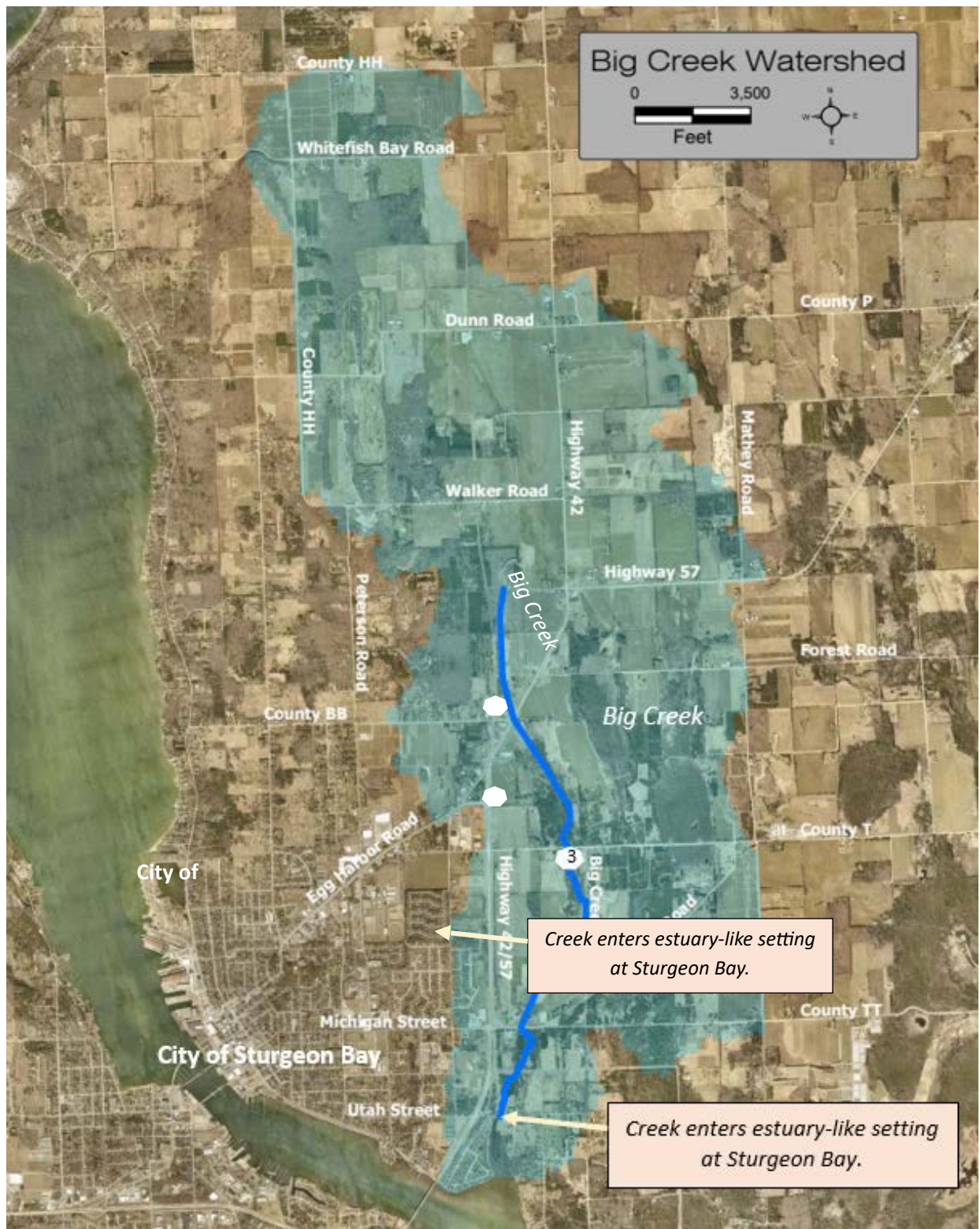


Figure 2. Big Creek watershed map showing locations of traps. Traps 1 and 2 set at 44.84089 / -87.33699. Trap 3 set at County Hwy T crossing (44.8498 / -87.3373).



Figure 3. Big Creek watershed road map showing locations of traps. Traps 1 and 2 set at 44.84089 / -87.33699. Trap 3 set at County Hwy T crossing (44.8498 / -87.3373).



Figure 4. Big Creek about 1.2 miles upstream from the confluence with Sturgeon Bay. Stream and riparian habitat setting for Traps 1 and 2. Photo taken 5/16/22, day traps were set.

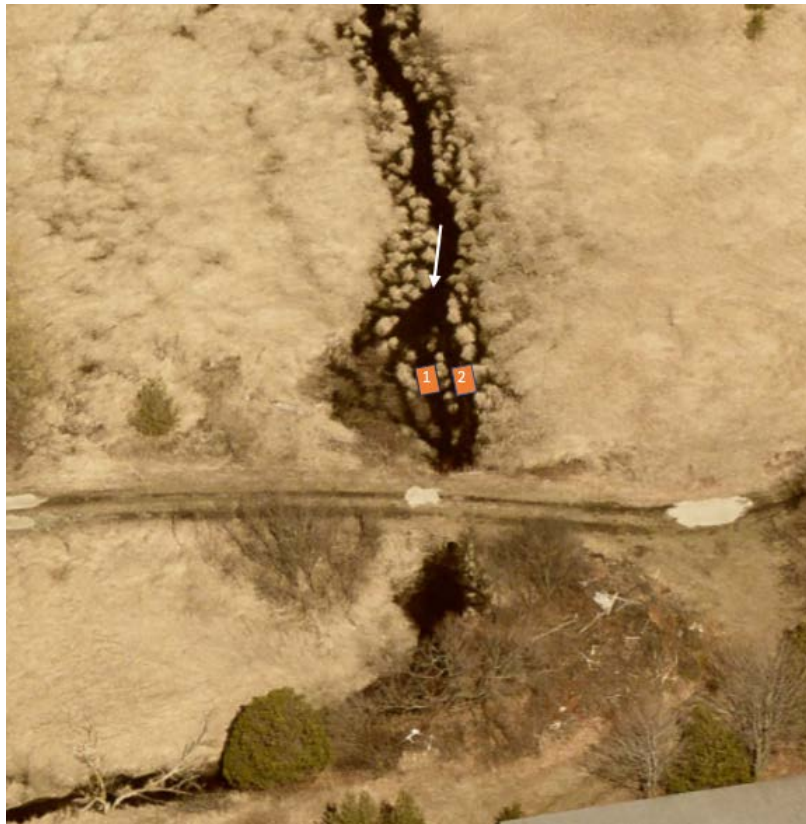


Figure 5. Location of Traps 1 and 2 (orange rectangles) as stream passes through the Theodore Londo tract upstream of private drive culvert. Arrow indicates direction of flow.



Figure 6. Location of Trap #3 (orange rectangle) set below County Road T stream crossing. Arrow indicates direction of flow. Trap is about 2 miles upstream of the creek mouth.



Figure 7. Trap #3 set below concrete box culvert at County Hwy T crossing. Photo taken day trap was set, 5/16/22.

RESULTS



Figure 8. Dip net of northern pike young of year from Trap #3.

All three traps were checked on the morning of May 17, 2022, before 8:30 am; i.e., traps were in the stream for about 15 hours. YOY pike were netted, counted as well as possible and released downstream of the traps. In trap 3 the number of YOY pike were estimated to the nearest 10 (Table 2). All three traps were removed and not reset in the stream.

Date Traps Set	Date Traps Checked	Number of YOY TRAP 1	Number of YOY TRAP 2	Number of YOY TRAP 3	TOTAL
5/16/2022	5/17/2022	72	87	730	839

Table 2. Table of YOY trapped in each trap.

RECOMMENDATIONS

To determine how far upstream northern pike may be spawning in Big Creek traps should be set upstream of the County T crossing. Figure 9 shows possible spawning habitat between County T and Hwy 42/57. It is recommended that Crossroads seeks permission from the landowners to access the stream and set YOY traps along this stretch of the creek and upstream of the highway.

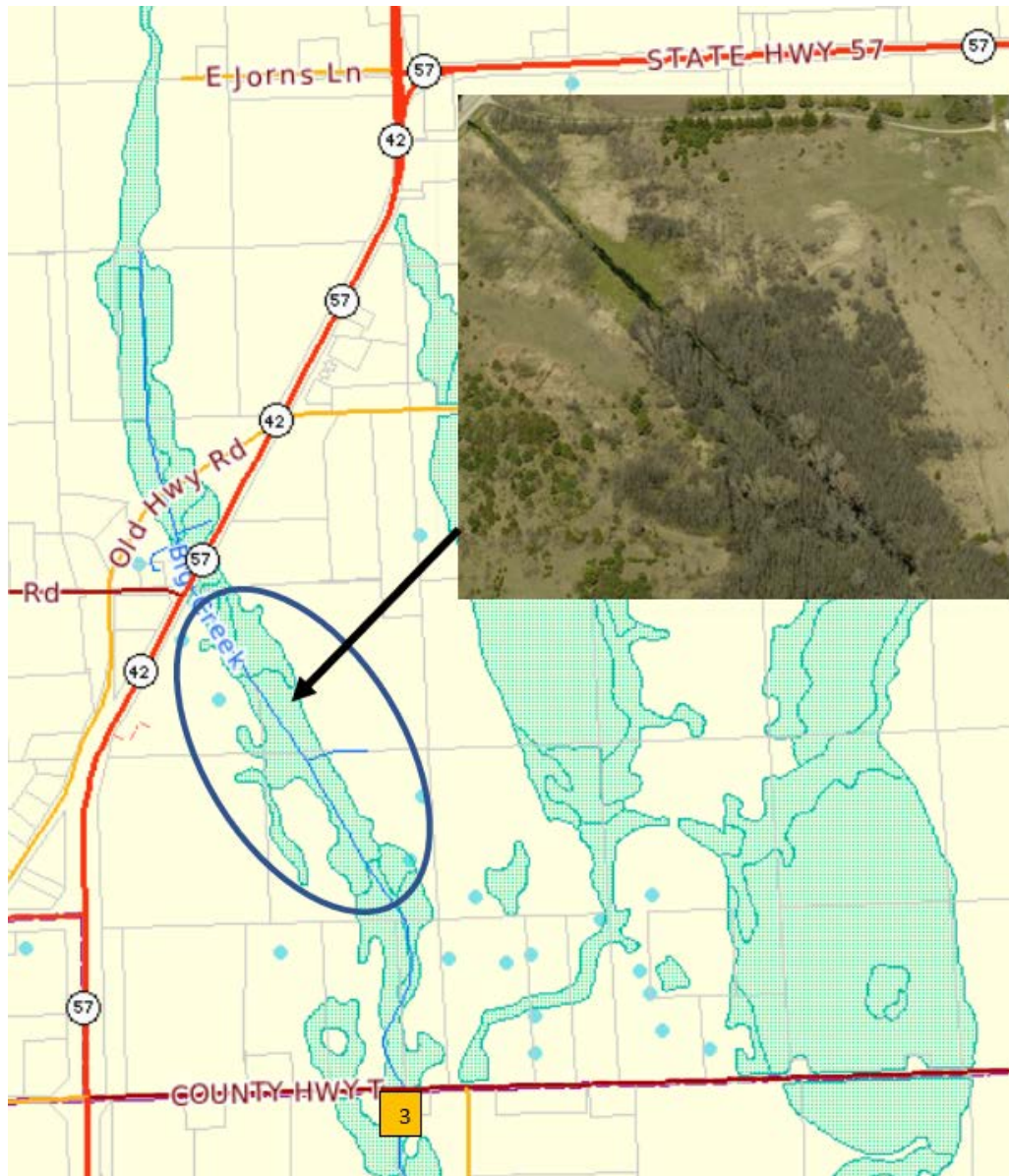


Figure 9. Map showing location of riparian emergent and forested wetlands (green shading) bordering the main, possibly channelized, stem of Big Creek upstream of Trap 3 at the County Hwy T crossing. These may be the primary northern pike spawning areas of the watershed. Oblique aerial photo inset taken 5/19/2019.