



Are dam removals on Town Brook helping river herring? How do we know?



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Town Brook,
Plymouth
Billington St.
Dam 2002



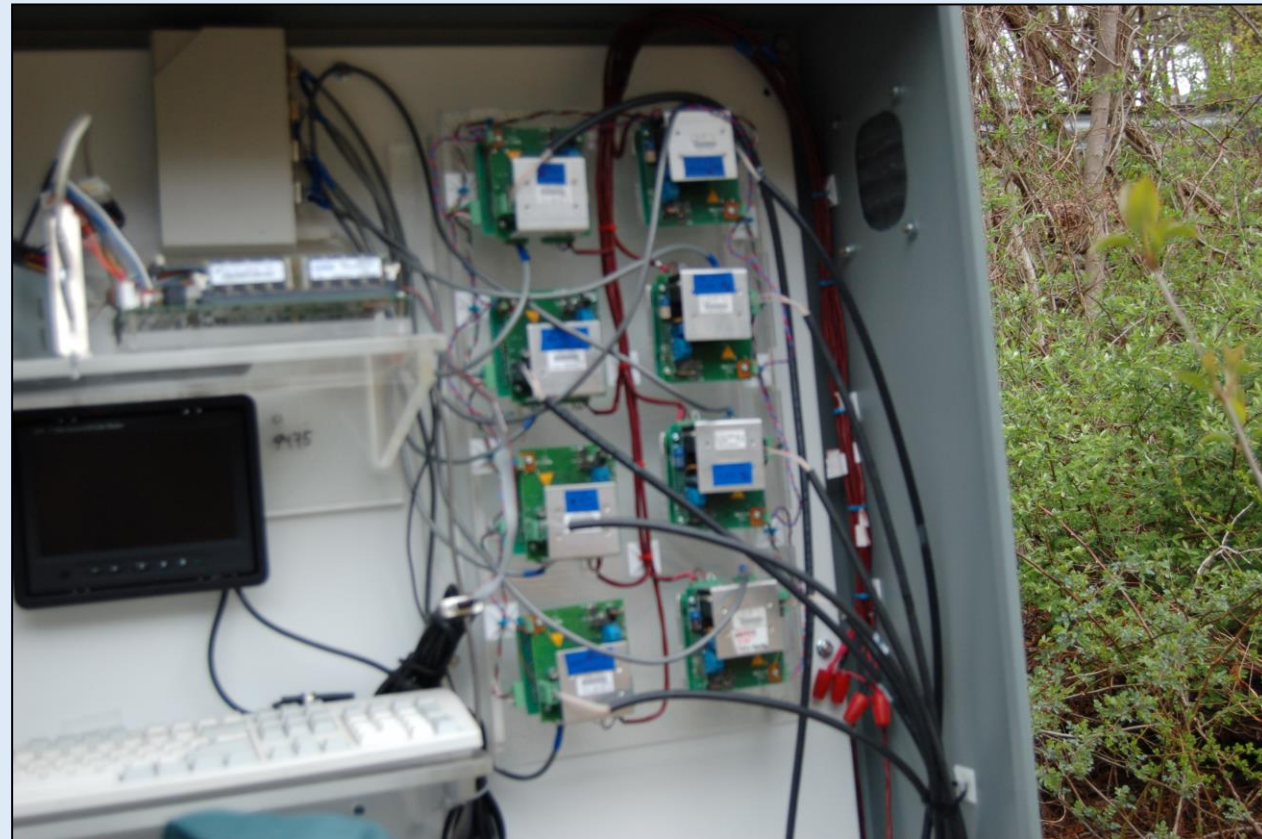


Town Brook, Plymouth – Nature-like Fish pass

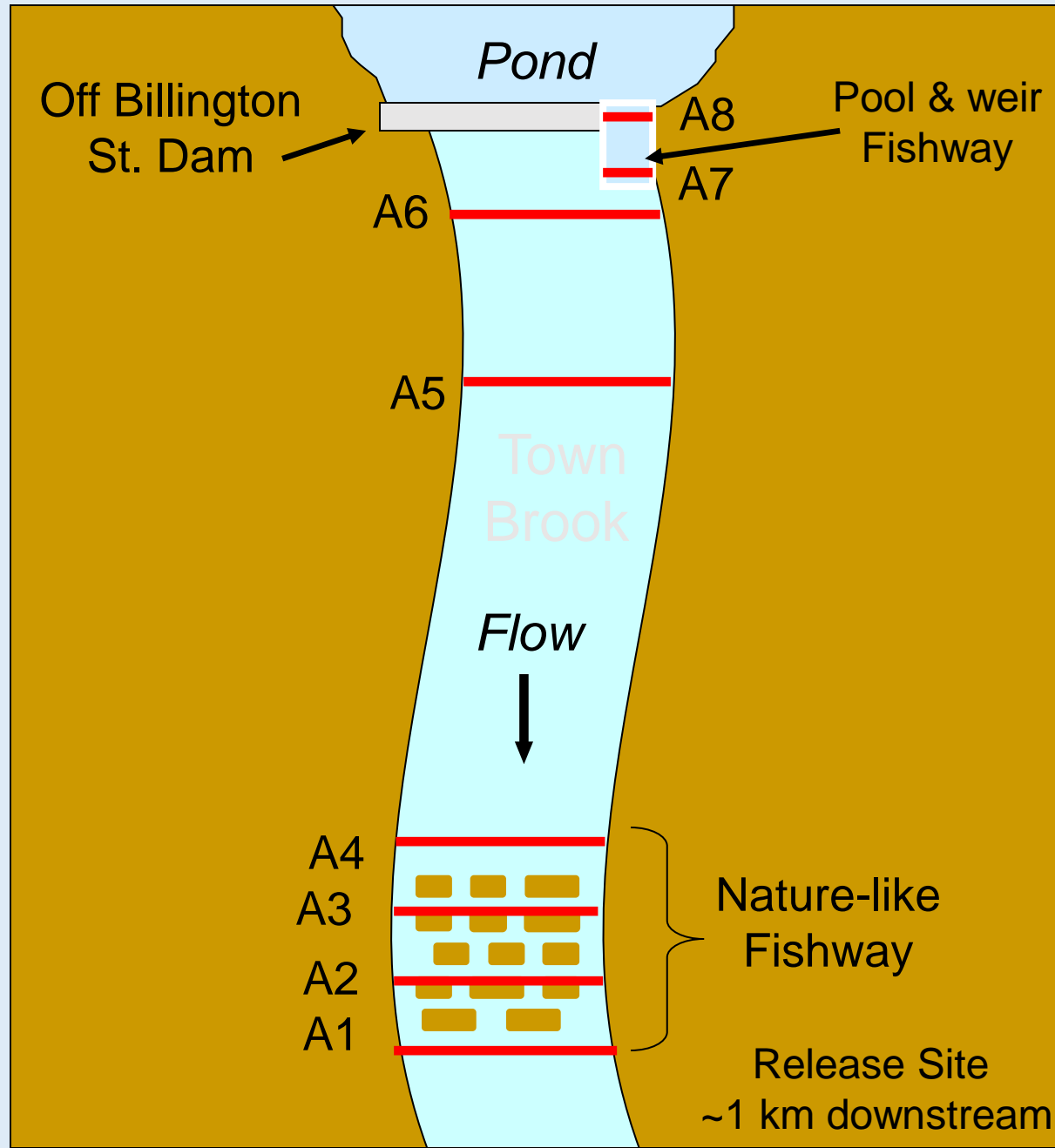


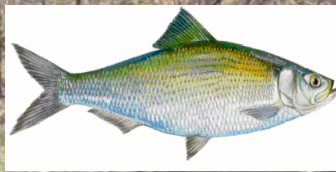


Passive Integrated Transponder (PIT) telemetry

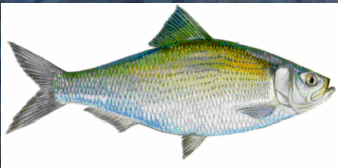


Antenna (aka Gate) Layout – Town Brook 2006



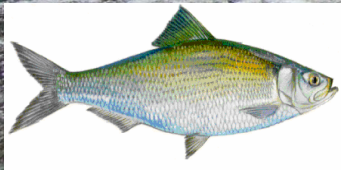


= 96



= 103





= 96

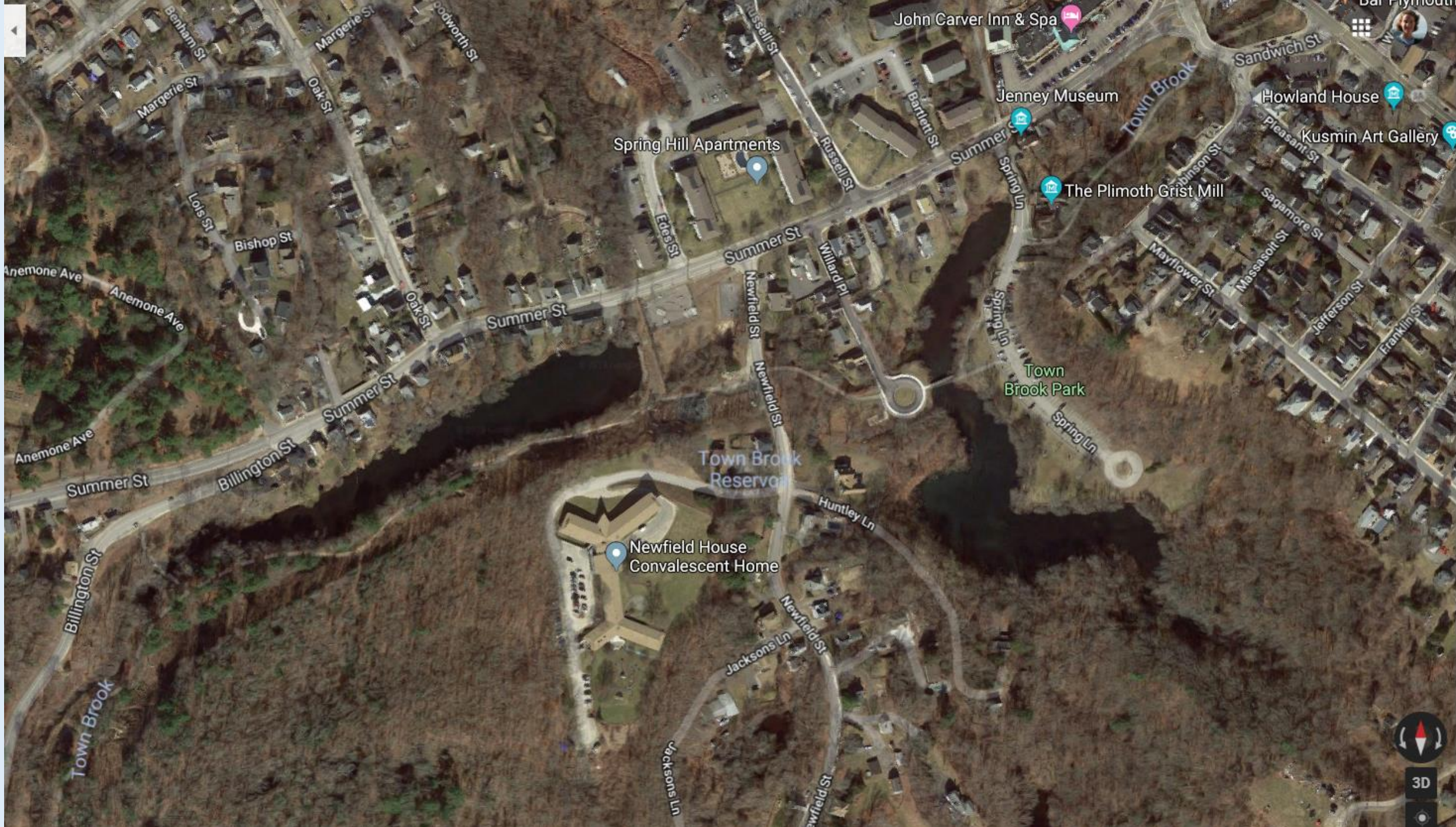


=6



= 96



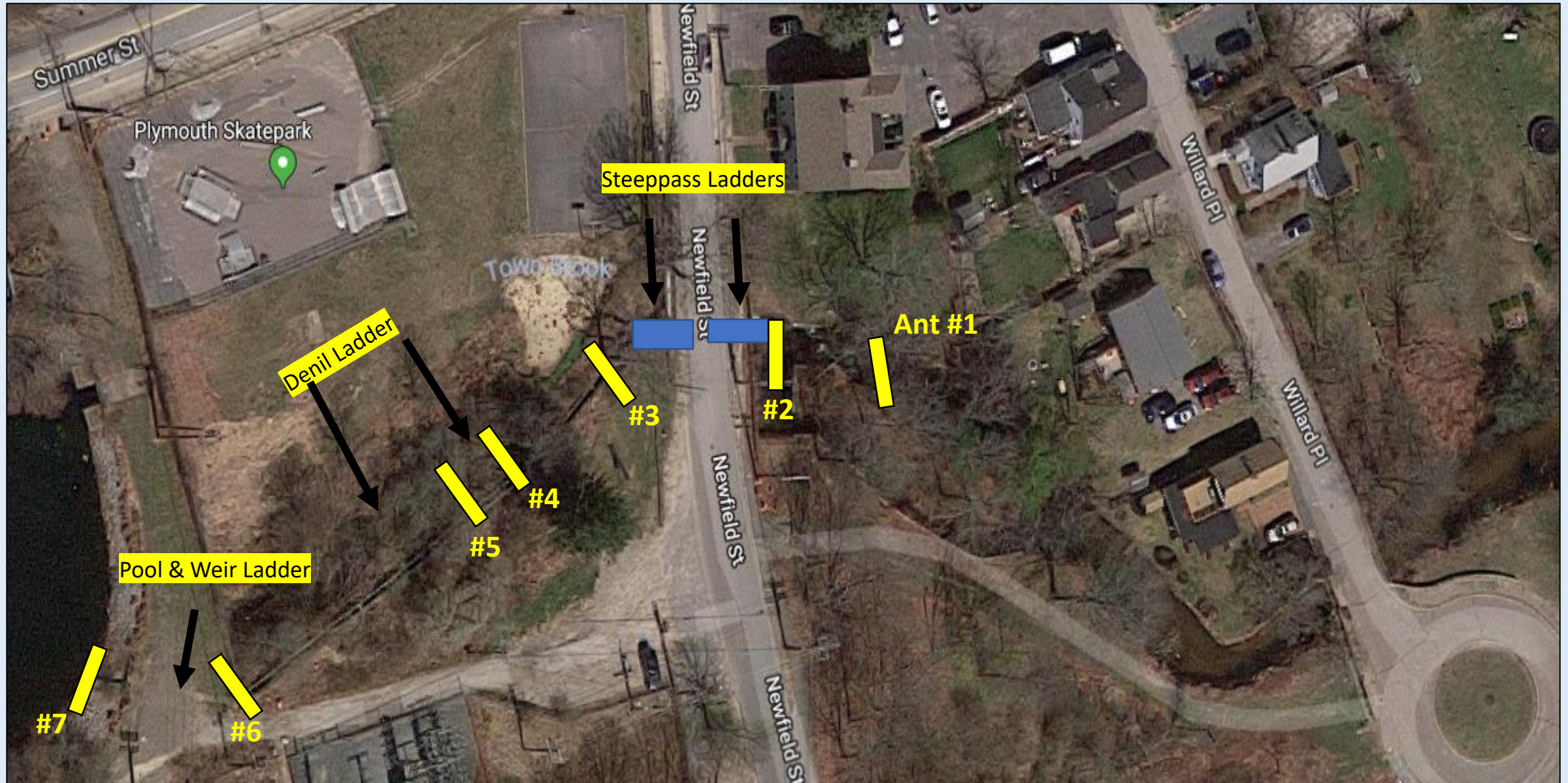


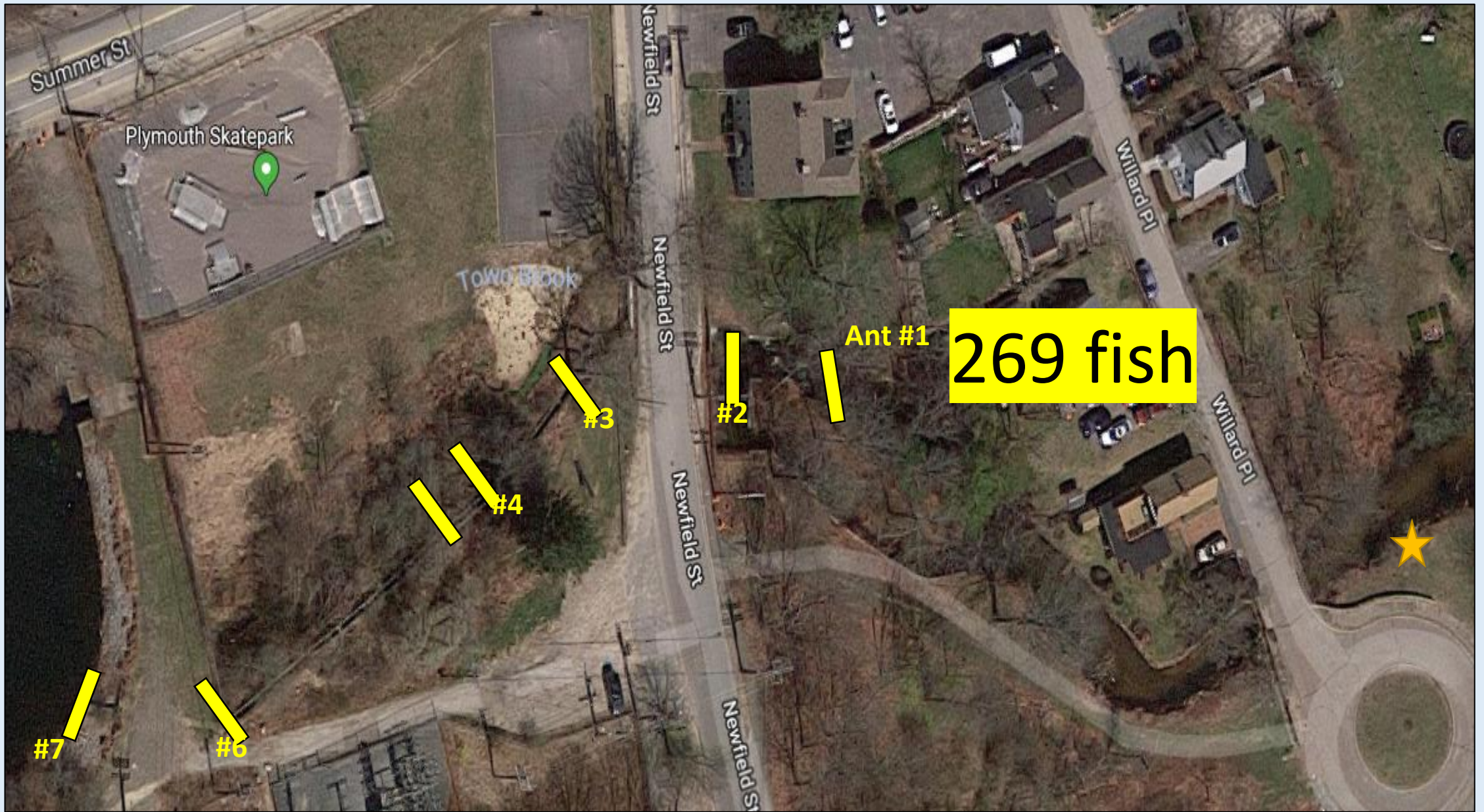


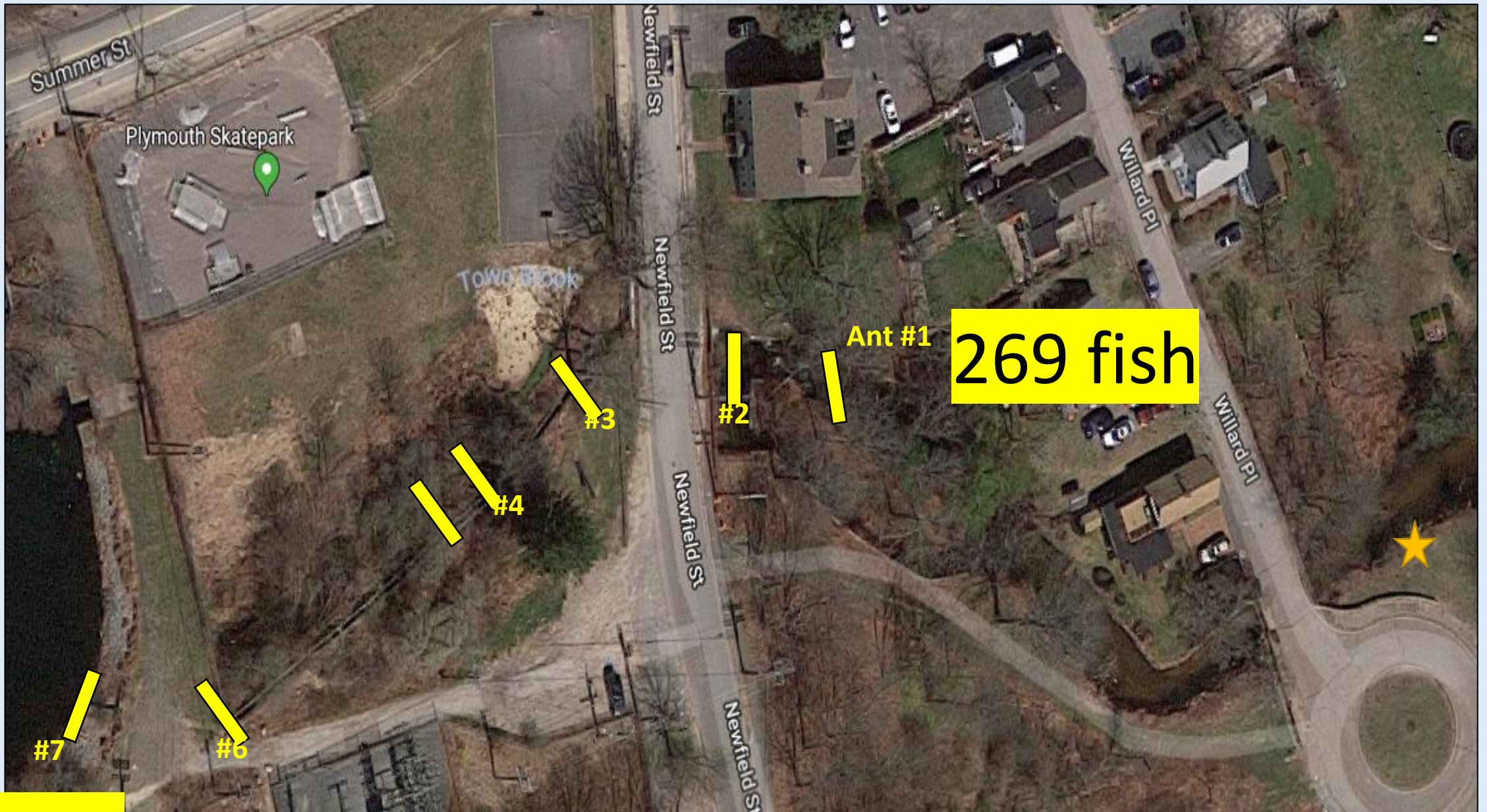




Passive Integrated Transponder Telemetry 2018 Antenna Set Up







269 fish

67 fish





Antenna 2



Antenna 3

386 fish





354 fish

386 fish

BEFORE

25%

(19.9%-30.5%)

AFTER

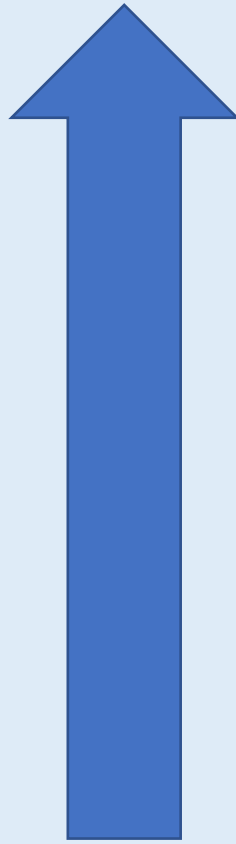
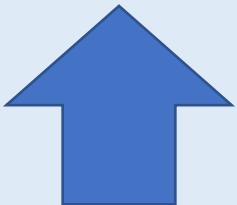
92%

(88.5%-94.3%)

100%

386 fish

354 fish



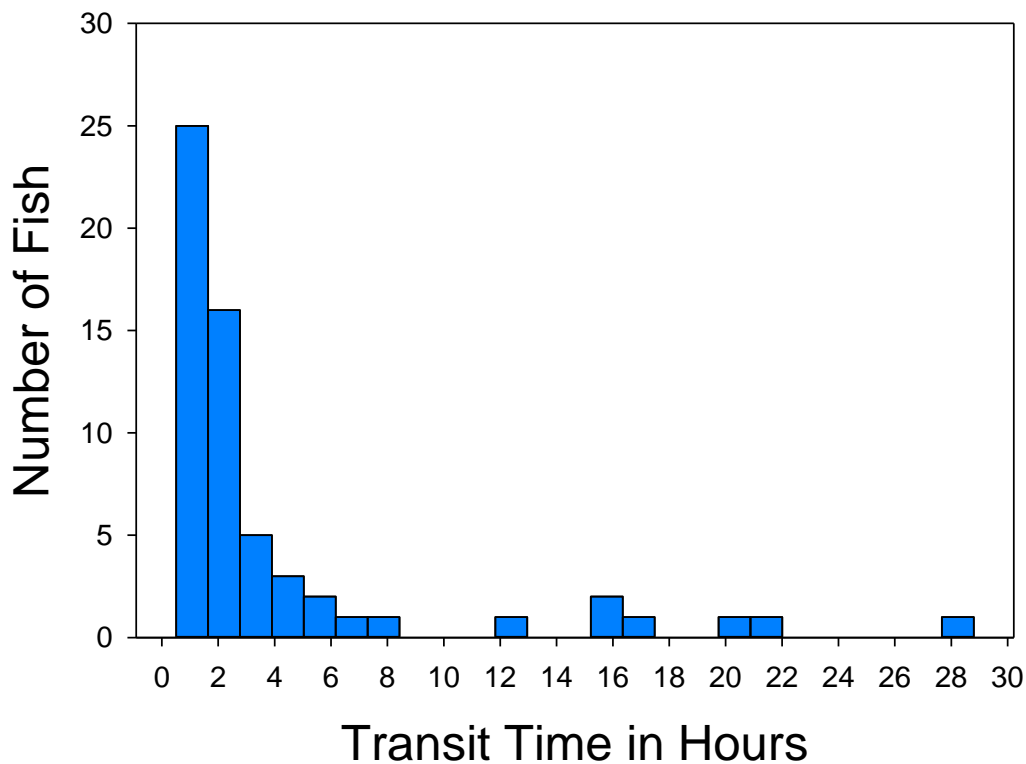
Transit Time

BEFORE

Range 30mins – 28.8 hours

Median 1.87 Hours

Average 4.12 Hours

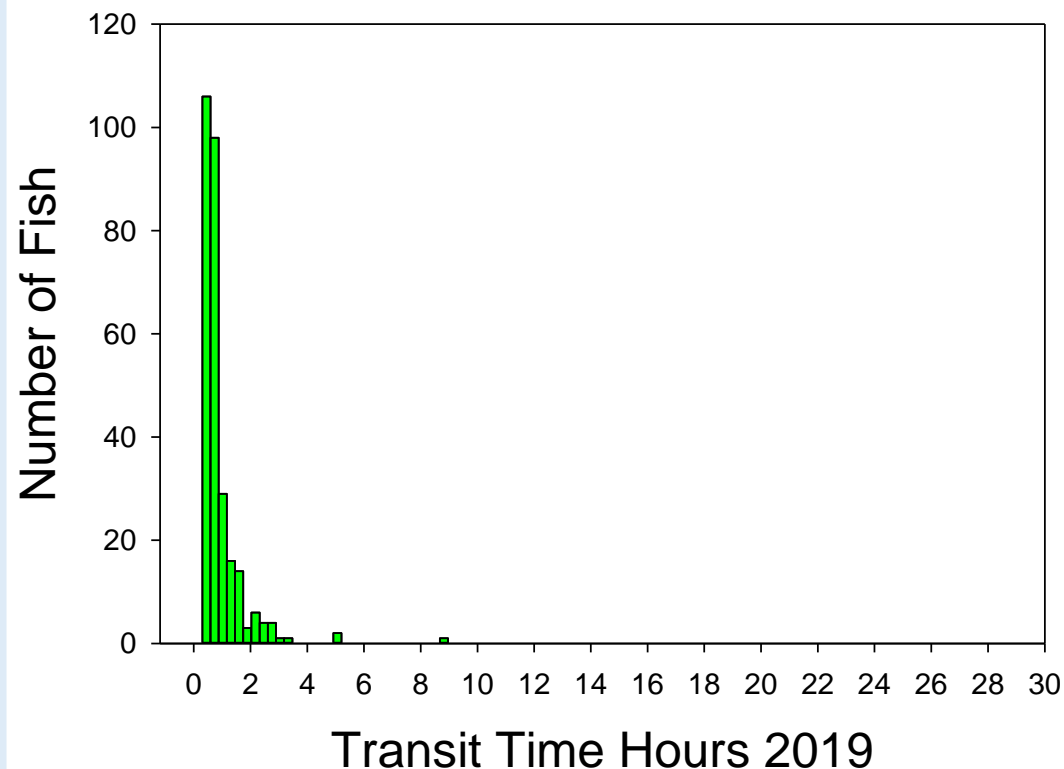


AFTER

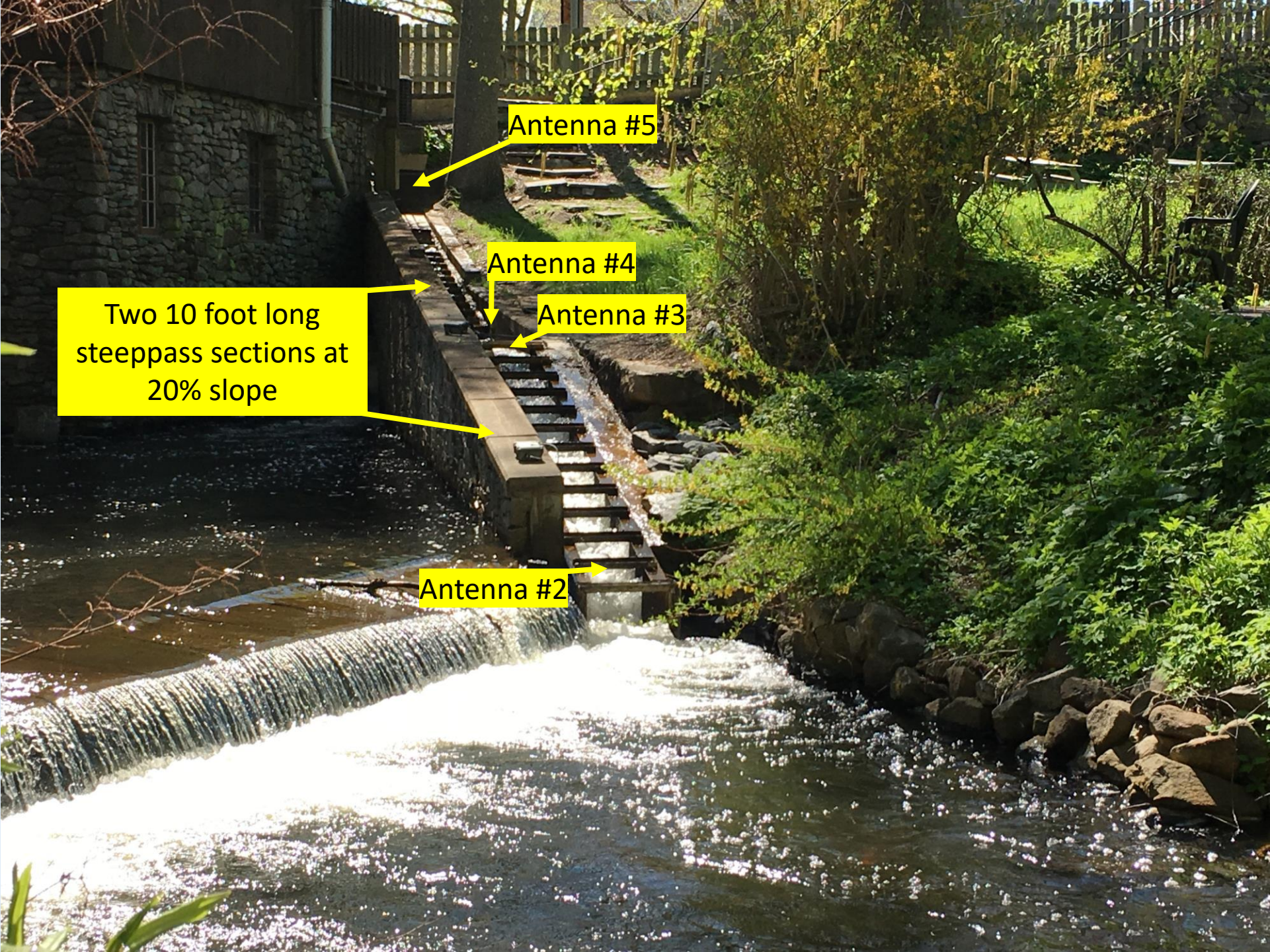
Range 18mins – 9 hours

Median 38.7 Minutes

Average 53.7 Minutes







Antenna #5

Antenna #4

Antenna #3

Two 10 foot long
steep pass sections at
20% slope

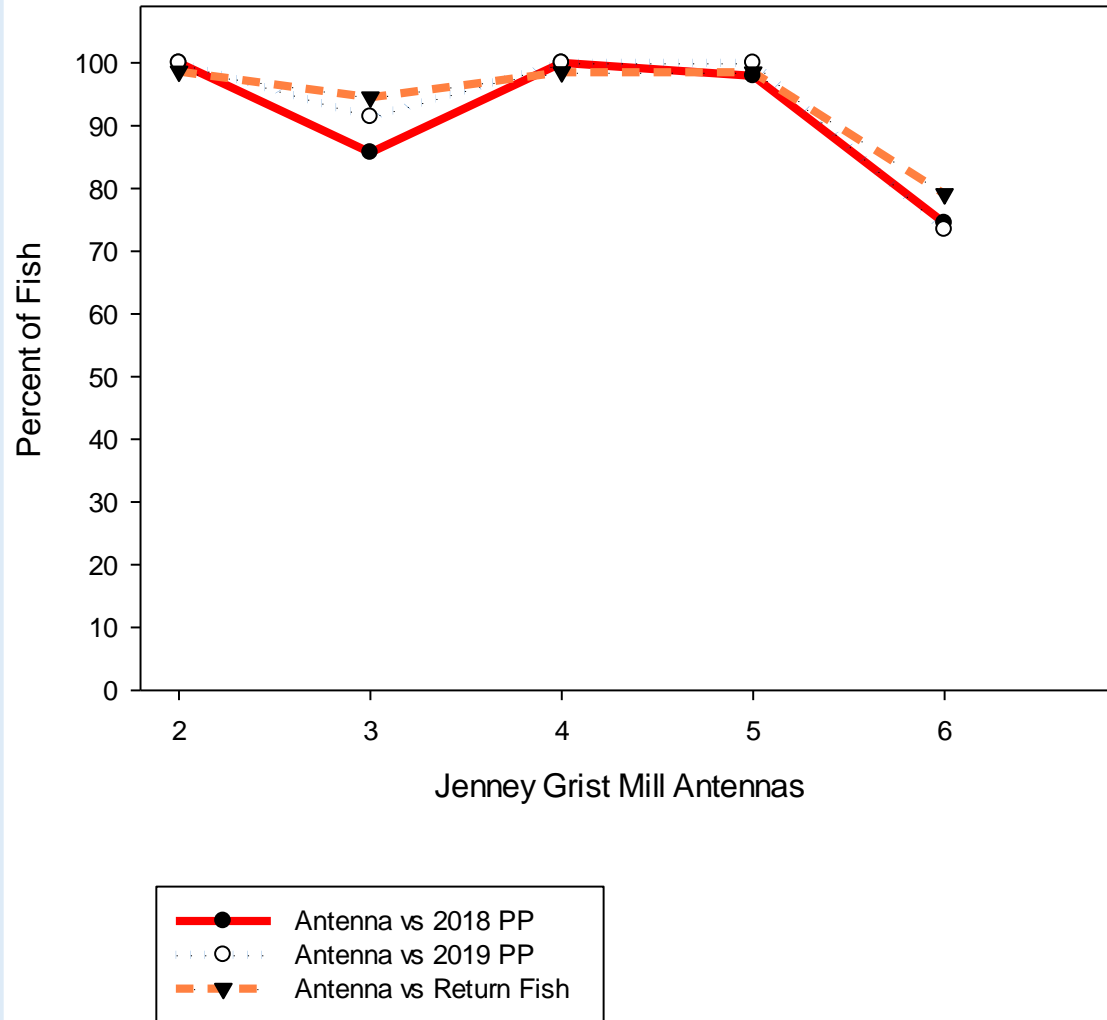
Antenna #2



Antenna #6

Comparison of Steeppass Percent Passage – 3 sets of fish

Proportion of Fish Passing Between
Each Set of Antennas at Jenny Grist Mill



2018

$34/56 = 60.7\%$

95% CI 46.8 – 73.5

2019

$56/76 = 73.7\%$

95% CI 62.3 – 83.1

Return Fish

$53/73 = 72.6\%$

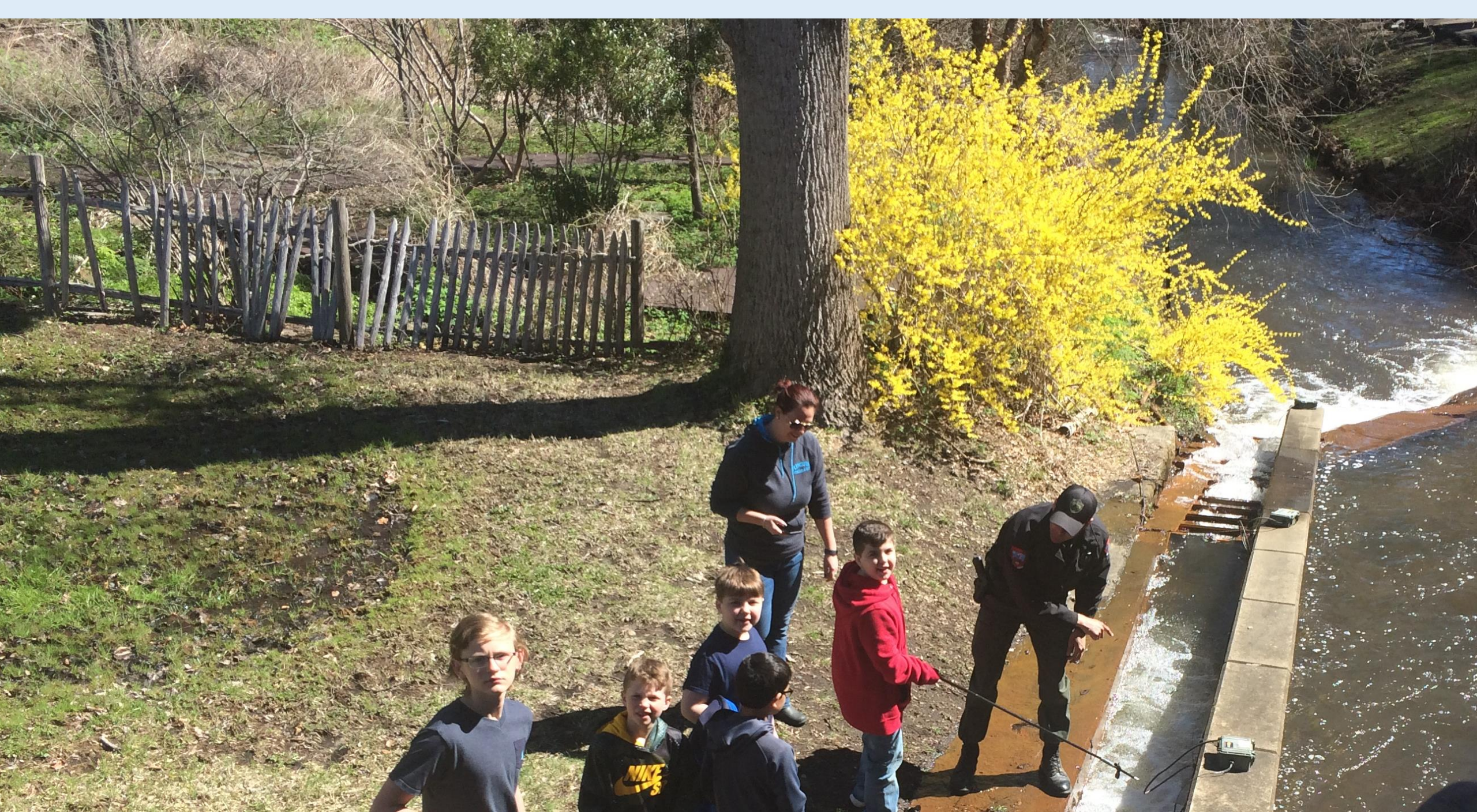
95% CI 60.9 – 82.4





Eek!







Stony Brook Herring Run, Brewster

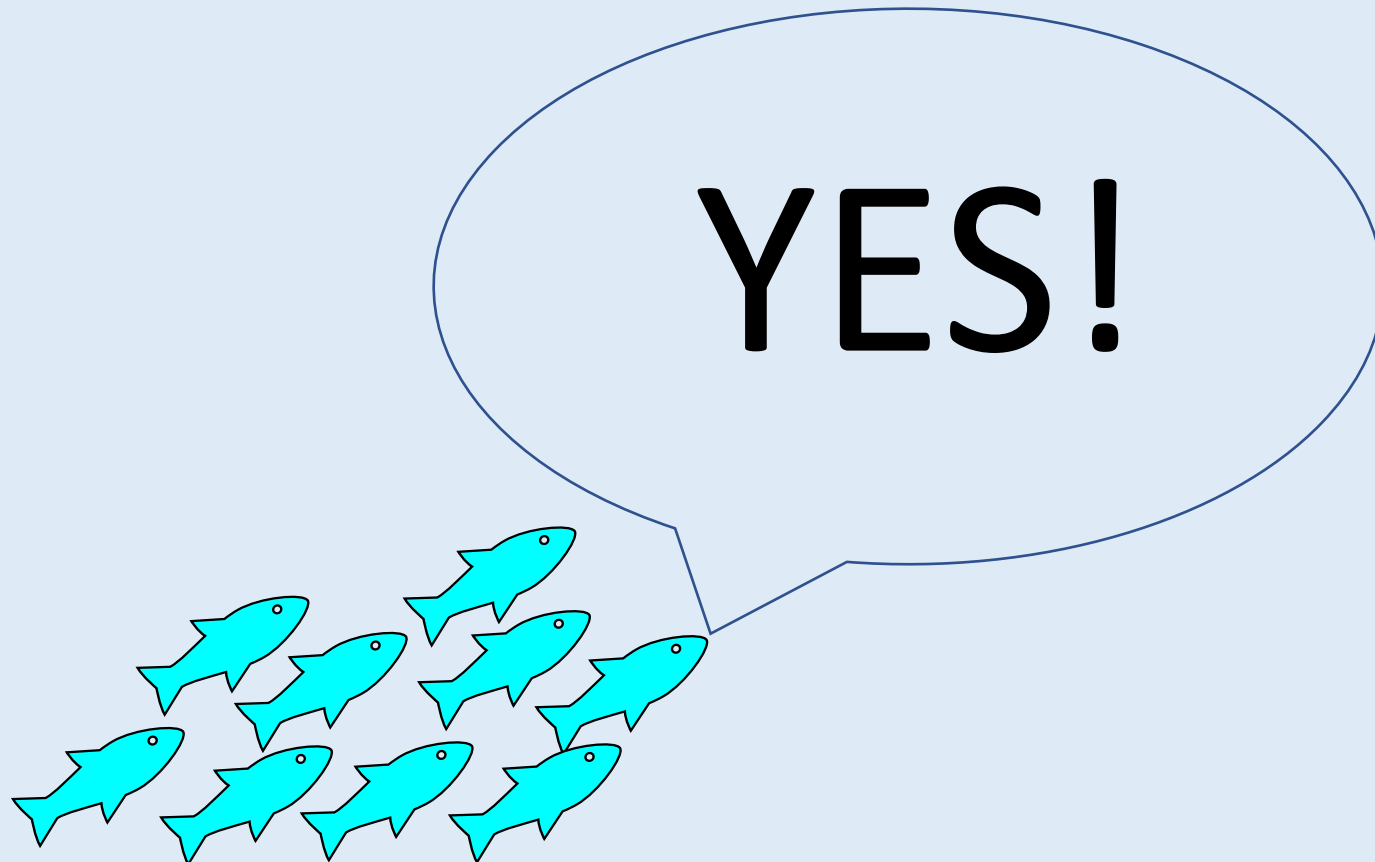
Mom,
Naturalist

Me, Fish
Biologist

Brother
(Atmospheric
Scientist)



Did the removal of Billington Dam, Off Billington Dam, Water St Dam, Plymco Dam, and Holmes Dam improve passage of river herring?





Did they get to the spawning pond?

BEFORE

22.3%

60/269
(17.5%-27.8%)

AFTER

82.6%

319/386
(78.5%-86.3%)

100%

