



Department of
Environmental
Conservation



2018 PROGRESS REPORT: PIT TAG SURVEY

**Delaware Tailwaters Fisheries Investigation Plan: A
Joint Project of the New York State Department of
Environmental Conservation and the Pennsylvania
Fish and Boat Commission 2018-2020**

March 27, 2019

Delaware Tailwaters Fisheries Investigation Plan, 2018 - 2020
West Branch Delaware River PIT Tag Plan, 2018 - 2020
2018 Progress PIT Tag Survey
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The New York City (NYC) reservoir tailwaters in the upper Delaware River Basin (Delaware Tailwaters) are an increasingly popular destination water for wild trout fishing. The New York State Department of Environmental Conservation (NYSDEC) and Pennsylvania Fish and Boat Commission (PFBC) have agreed supporting a Joint Fisheries Investigation Plan¹ (Plan). This Plan identifies information most urgently needed to inform a new fisheries management plan and a set of strategies to collaboratively obtain that information over the next three years, 2018 – 2020. Passive integrated transponder (PIT) tags were implanted into trout during the 2018 sampling season to document trout movements in the West Branch tailwaters and select tributaries². Findings within this progress report are considered provisional and subject to modification pending additional analysis, scrutiny and review over the duration of the Plan lifespan.

In 2018, approximately 1,000 adult sized brown trout (BT) and rainbow trout (RT) 12 inches in length or larger were to be tagged with 23mm PIT tags at the four monthly (April-October) night-time adult trout electrofishing sample sites. Additionally, up to 1,000 yearling sized BT and RT were to be PIT tagged at the four night-time adult electrofishing sites and 17 monthly day-time (July-October) fingerling electrofishing sites.

In total, 1218 trout were PIT tagged at all electrofishing sites (Table 1). Essentially every untagged yearling and adult trout encountered at the four monthly night time adult electrofishing sites and 17 monthly day-time fingerling electrofishing sites were PIT tagged. A total of 177 (15.72%) PIT tagged fish were recaptured at all sites combined (Table 2). All but three fish were recaptured at the original tagging site. Additionally, 14 recaptured trout (7.33% of total recaptures) rejected the PIT tag at an unknown time after tagging (Table 3). These fish were identified by an adipose clip and/or PIT tag scar at time of recapture. Additional analysis (growth rates etc.) is on hold as scales are pressed and read.

Homemade in-house small-scale PIT tag arrays were to be placed in tributaries (Sands Creek, Roods Creek, Sherman Creek, Shehawken Creek, Balls Creek and Cold Spring Creek) to the West Branch during the fall brown trout spawning period (September 1st through November 31st). Unfortunately, high water and technical difficulties limited array deployment to one Oregon RFID stream wide array in Sands Creek and one small scale array in Roods Creek. No fish were detected by the installed arrays during the fall of 2018. In 2019, we hope to install Oregon RFID stream wide arrays at all six tributaries, possibly by the time July fingerling sampling commences.

¹ <http://www.dec.ny.gov/outdoor/112782.html>

² http://www.dec.ny.gov/docs/fish_marine_pdf/dfippittag.pdf

Table 1. Total trout PIT tagged by month and water in Delaware Tailwaters, 2018*.

	April		May		June		July		August		September		October	
	BT	RT	BT	RT	BT	RT	BT	RT	BT	RT	BT	RT	BT	RT
West Branch			162	8	231	4	298	27			51	16	241	4
West Branch YOY							0	6						
Sands Creek							17	14	4	0	4	4	2	1
Roods Creek							13	13	3	0	6	1	4	0
Sherman Creek							21	2			9	1	3	0
Cold Spring Creek							12	4	1	0			1	1
Balls Creek							2	0			1	0	5	0
Shehawken Creek							16	2					3	0
Total			162	8	231	4	379	68	8	0	71	22	259	6

*as captured during electrofishing sampling. Blanks indicate not sampled, zeros indicate no fish tagged.

Table 2. Frequency of recaptured PIT tagged trout in Delaware Tailwaters, 2018.

Water	# tagged	# recaps		% recap	% movers	Tag Size	Notes
		w/ tags	w/o tags*				
West Branch	427	43		10.1%	0.0%	12 mm	All at tagging location
West Branch	521	108		20.7%	2.8%	23 mm	All but three at tagging location
West Branch YOY sites	6	0		0.0%		12 mm	
Delaware River YOY sites	0	0				12 mm	
Sands Creek	48	5		10.4%	0.0%	12 mm	All at tagging location
Roods Creek	42	7		16.7%	0.0%	12 mm	All at tagging location
Sherman Creek	36	11		30.6%	0.0%	12 mm	All at tagging location
Cold Spring Creek	17	0		0.0%		12 mm	All at tagging location
Balls Creek	8	1		12.5%	0.0%	12 mm	All at tagging location
Shehawken Creek	21	2		9.5%	0.0%	12 mm	All at tagging location
Total	1126	177		15.7%	1.7%		

Table 3. Frequency of retention rates of PIT tagged trout in Delaware Tailwaters, 2018.

Water	# recaps w/ tags		# recaps w/o tags*	% recap w/o tags*	Tag Size
	# recaps w/ tags	+ # recaps w/o tags*			
West Branch		119	11	9.2%	23 mm
West Branch		43	0	0.0%	12 mm
West Branch YOY sites		0	0		12 mm
Delaware River YOY sites		0	0		12 mm
Sands Creek		5	0	0.0%	12 mm
Roods Creek		8	1	12.5%	12 mm
Sherman Creek		13	2	15.4%	12 mm
Cold Spring Creek		0	0		12 mm
Balls Creek		1	0	0.0%	12 mm
Shehawken Creek		2	0	0.0%	12 mm
Total		191	14	7.3%	

* Previously tagged trout were identified by an adipose clip and/or tag scar.

Observations

- Fin clipping necessary to determine tag retention and ease in identification of recaptures.
- Home-made small-scale arrays do not perform well in high flows.
- Installing arrays can be problematic during higher autumn flows.
- PIT tag retention rate is highly satisfactory