

**NJDEP Division of Fish and Wildlife  
Bureau of Freshwater Fisheries**



**Catch and Release Assessment**

*Catch & Release* fishing regulations were implemented in 2014 on sections of two trout-stocked streams – the Flat Brook/ Big Flat Brook and the Ken Lockwood Gorge on the S/Br. Raritan River. Both support reproducing trout populations. Electrofishing surveys have been conducted on these streams to provide data for evaluating the effect of the regulation change on these trout fisheries.

**Flat Brook/Big Flat Brook-** Four sites on the Flat Brook/Big Flat Brook Catch and Release regulation section were previously electrofished in 2012, 2013, and 2014. Although this stream reach is trout-stocked in the spring and fall, and naturally reproducing trout occurs within this section, few trout were encountered during these surveys (see table below). Trout appear to be utilizing deep, non-wadeable pools in this stream, as evidenced by the 2014 informal (non-standardized) electrofishing survey that was conducted in a large, deep pool (see footnote in table) in which 15 trout were captured and others eluded capture. In 2015, three of the four survey sites were moved slightly upstream or downstream of previous survey sites sampled in an attempt to determine if trout are utilizing other areas within the Catch & Release regulation section (see table below for summary of trout found). The Three Bridges site yielded significantly more trout.

Electrofishing locations along the Big Flat Brook and Flat Brook from 2012 – 2015.

Year	Water Temp	Total Trout	Brook Trout		Brown Trout		Rainbow Trout	
			Wild	Stocked	Wild	Stocked	Wild	Stocked
Big Flat (between Rt. 206 & Rt. 560 bridges (Old barracks))								
2012	19.9°C (67.8°F)	3				2		1
2013	17.1°C (62.8°F)	8	2			1		5
2014	17.6°C (63.7°F)	3	3					
Big Flat (Old Police Barracks) (new site)								
2015	18.6°C (65.5°F)	6	3					3
Big Flat (Station 2 – upstream from Blewitt Tract)								
2012	20.8°C (69.4°F)	3	3					
2013	18.6°C (65.5°F)	7	5			1		1
2014	17.6°C (63.7°F)	8	5		3			
Big Flat (between Rt. 560 & “Warner’s Hole”) (new site)								
2015	17.1°C (62.8°F)	10						10
Big Flat (Station 1 – upstream from Blewitt Tract)								
2012	19.1°C (66.3°F)	8	7					1
2013		0						
2014	17.5°C (63.5°F)	2			2			
2015	19.3°C (66.7°F)	3	1					2
Flat Brook (above Roy Bridge - just downstream of rifle range pool)*								
2012	18.8°C (65.8°F)	6	1		1	2		2
2013	16.3°C (61.3°F)	4	1		1			2
2014	17.3°C (63.1°F)	2			1			1
Flat Brook (Three Bridges WMA) (new site)								
2015	18.7°C (65.7°F)	48	1					47
* In addition to this site, the “rifle range pool” was electrofished. Due to the large size of the pool (wide, long, and deep) not all the trout were captured, however, a total of 15 trout (14 Rainbow Trout and 1 Brook Trout) were netted. They ranged in size from 11.3 – 15.7 inches and all appeared to be of hatchery origin (stocked). The brook has many pools similar to this one that hold trout but are difficult to effectively sample.								

**South Branch of the Raritan River-** Known for its great scenery and fish habitat, the 2.5 mile section of the South Branch of the Raritan River known as the Ken Lockwood Gorge is very popular among anglers looking for Catch and Release / artificial lures only opportunities. Wild Brown Trout are plentiful in this section of river, with an increase in the amount of natural reproduction in recent years, although Brook Trout are rarely encountered, with never more than a few individuals. This section is stocked by NJDFW in both the spring and fall, however NJDFW did not stock trout in this section of the South Branch of the Raritan River in 2014 (spring and fall), due to a disease outbreak in the Pequest Trout Hatchery. Prior to 2014, this section was regulated as a Year Round Trout Conservation Area (TCA) (1 trout per day greater than 15 inches). The *Catch and Release* regulations that went into effect in 2014 were monitored via two electrofishing surveys were conducted in 2015.



Over the last four sampling events in 2006, 2007, 2013, and 2015 the total number of all trout species encountered during electrofishing surveys have increased from 96 to 126 to 214 to 413 (see table below). In all years except 2015, Brown Trout were the most abundant species consisting almost exclusively of wild fish, which is the foundation of the fishery. Their numbers were trending upward from 84 to 73 to 150 until this year in which only 43 were captured. Wild Brook Trout exist in this section of river, but rarely with more than a few individuals. When broken down by species, the greatest difference noted is in regards to Rainbow Trout, which have increased from 9 to 23 to 50 to 362 in 2015. Although the total number of NJDFW stocked trout has remained constant over this timeframe (with the exception of no stocking in 2014), the number of Rainbow Trout was increased this year to make up for the lack of Brook and Brown Trout that were not stocked.

The number of trout over 9 inches increased from 54 to 82 to 149 to 381 respectively, which meets a management objective to increase trout densities. The drastic increase to 381 trout, however, can not be attributed to the new *Catch and Release* regulation, as the majority of trout were under 15 inches, which could not be harvested under neither the previous TCA regulation or under current *Catch and Release* regulations. A second objective of the *Catch and Release* regulation was to increase the number of trout over 15 inches, however this number has not increased as it went from 0 to 2 to 6 to 3 in 2015. This may have been affected by the fact that broodstock trout were not stocked here in the fall of 2014, which likely contribute greatly to the number of large trout in this section. It is recommended to continue to monitor the fish assemblage within the Ken Lockwood Gorge WMA to assess the *Catch and Release* regulations.



Bureau of Freshwater Fisheries Electrofishing Survey conducted in the Ken Lockwood Gorge

Electrofishing locations within the Ken Lockwood Gorge from 2006 – 2015.

Year	Water Temp	Total Trout	Brook Trout		Brown Trout		Rainbow Trout	
			Wild	Stocked	Wild	Stocked	Wild	Stocked
Boulder Field (page A86)								
2006*	13.7°C (56.7°F)	49	2		41		6	
2007*	18.9°C (66.0°F)	73	18		44		11	
2013	19.8°C (67.6°F)	70		2	54	1	2	11
2015	25.0°C (77.0°F)	168	1		26	2	2	137
Below Trestle (page A87)								
2006*	13.7°C (56.7°F)	47	1		43		3	
2007*	18.9°C (66.0°F)	53	12		29		12	
2013**	18.4°C (65.1°F)	144 **		9	84	13		37
2015	22.8°C (73.0°F)	245	1		17	7		221
<p>* Wild and stocked trout were not adequately differentiated during the 2006 and 2007 surveys.  ** One wild Tiger Trout (Brook Trout X Brown Trout) was collected at this site.</p>								