Nonnative Salmonids Technical Work Group

Rainbow Trout Species Author:

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Introduction – Rainbow Trout

- Native to Maine: No, introduced
- Cultured in Maine's hatchery system: Yes; spring yearling, fall yearling
- Typical Length of Rainbow Trout: 12-20"
- State record: 32.5"; 13 lbs. 7 oz. Caught in 2016 at a quarry pond in Vinalhaven, Maine.
- Management schemes: General and Size Quality

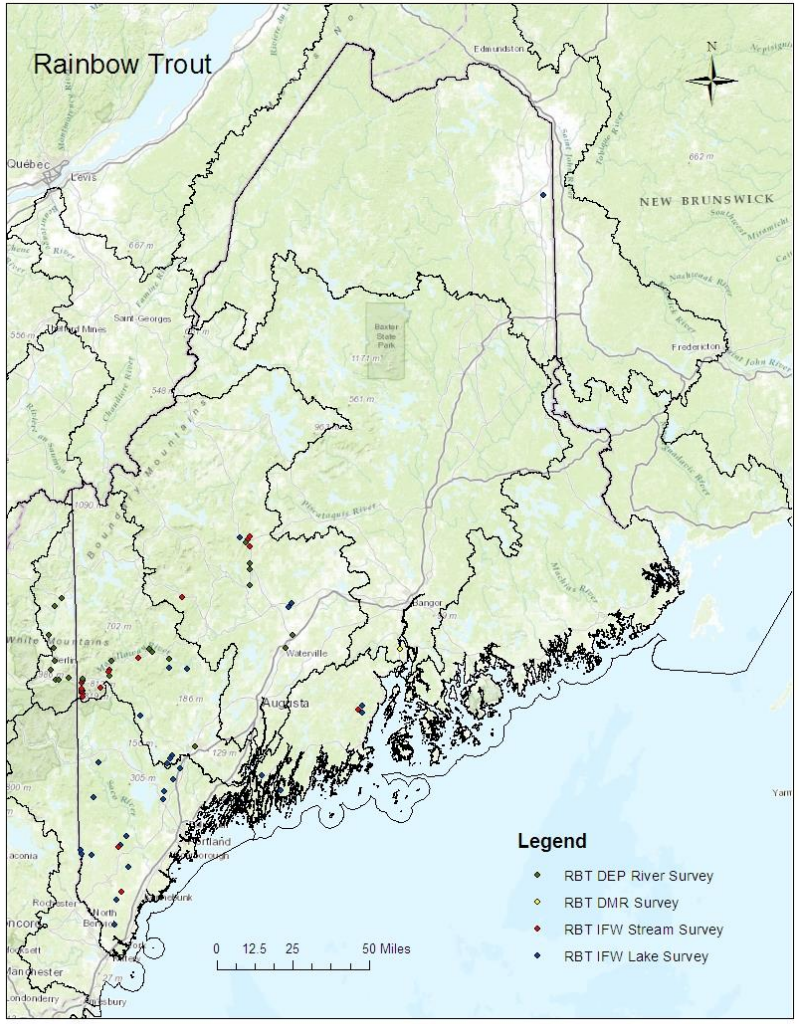
Management History – Rainbow Trout

- **Early 1930's to late 1940's:** federal hatcheries stocked RBT in 82 lakes and streams Statewide
- **Late 1940's-1968:** no MDIFW RBT stockings
- **1968-1974:** experimental RBT stocking program
- **1974-1978:** continuation of experimental program w/ change in objectives
- **1978:** cancellation of experimental program
- **1979-2001:** no MDIFW rainbow stockings
- **1997:** MDIFW creates committee to reconsider RBT stocking
- **2001-2005:** Experimental stocking program
- **2007-Present:** Small, regular stocking program for RBT

Current Distribution – Rainbow Trout

Lakes/ponds containing principal fisheries for Rainbow Trout		
Region	# of lakes/ponds	% total lake/pond area
A	16	7.9
B	5	4.6
C	1	0.3
D	0	0.0
E	0	0.0
F	0	0.0
G	1	< 0.1
Statewide Total	23	1.3**

- Stocked Rivers/streams – Andro and Little Andro, Carrabasset Rivers
- Wild – Andro, Kennebec, and Dead River Drainages



Current Management – Rainbow Trout

Currently, fisheries biologists stock Rainbow Trout under a few management scenarios.

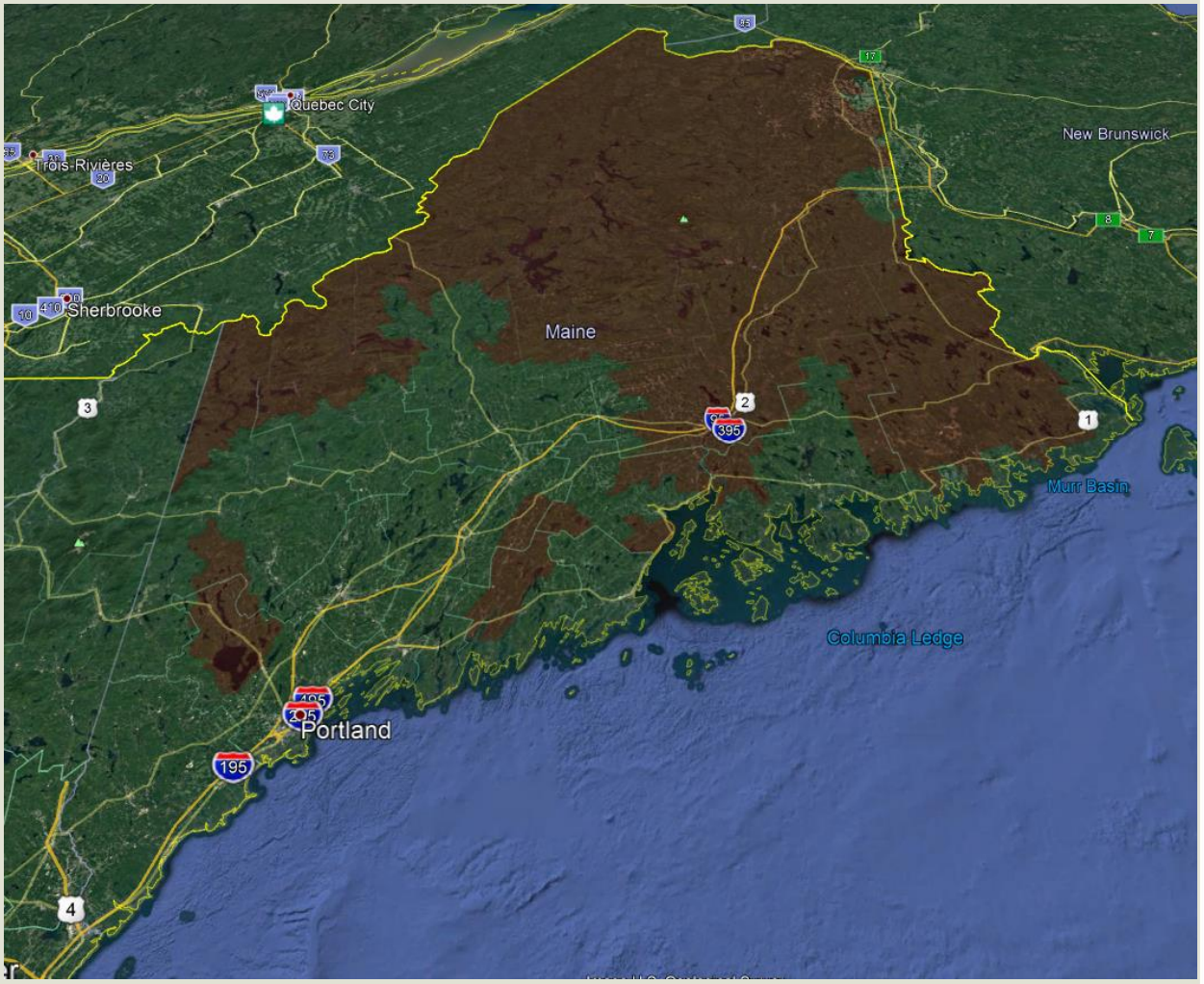
(1) Lakes and ponds with fair to excellent water quality, moderate to heavy competition, and forage fish populations not necessary. Often used in conjunction w/ Brown Trout on medium to large sized lakes or to replace brook trout where competition is heavy.

(2) Stock RBT into medium-large rivers to provide extended season put-and-take fishery with some potential for holdover.

Current Management – Rainbow Trout

Stocking Restrictions:

RBT stockings currently prohibited in the brown shaded area of the State by MDIFW policy.



Current Management – Rainbow Trout

Regulations:

- General Law: 2-RBT MML 6” Rivers/Streams 12” Lakes/Ponds.
- Specials:

  No species specific S-codes; few water specific regulations;

  River tribs - June 1 opening to protect wild spawning adults;

  Large River - MML 18”;

  Large River Section - Single hook ALO/C & R;

  Large River Section - ALO/16-20” protective slot

Current Management – Rainbow Trout

Sampling/monitoring methods:

- Creel Survey, Trapnetting, Gillnetting, and Experimental Angling (Rivers);
- RBT are difficult to sample effectively w/ trapnets and gillnets.

What data are used to make management decisions:

- Catch rates, harvest, and angler returns
- Age, Growth, and Survival
- Fish Origin (wild/stocked)

Recent MDIFW Initiatives – Rainbow Trout

(1) Species Performance Comparisons

BNT and RBT

- **RBT provide substantially better catch rates and angler returns of stocked trout than browns (~5:1 lakes/ponds; 1.5-2:1 rivers/streams).**
- **Typically, both species produce better openwater fishery than ice fishing. Openwater and ice fishing return rates for RBT were 79.5% and 23.1%, respectively.**
- **RBT will produce similar size quality fisheries as BNT, but fewer trophy sized fish due to higher catch/harvest rates and lower growth at older ages.**
- **No statistically significant differences in mid-day catchability.**

BKT and RBT

- **Overall catch rates were similar, but RBT provided better mid to late season fishing opportunities.**
- **RBT exhibited superior size quality, growth, and survival.**
- **Fall diets were very similar; RBT did not appear to utilize larger food items anymore than BKT; RBT may feed more aggressively.**
- **RBT demonstrated a better ability to survive to older ages even under moderate/high competition, as long as water quality was not too poor.**

Recent MDIFW Initiatives – Rainbow Trout

(2) SY RBT stocking Evaluations

- SY RBT performed well in this water, despite heavy competition.
- The use of SY RBT over FY may provide higher angling success by stocking at higher rates, and result in some modest cost savings over the use of FY RBT.
- 5 SY/acre vs 2 FY/acre
- SY $2.50/fish vs FY $8/fish
- Example from one water >>

STATISTICS		Open Water Voluntary Survey Data	
Year (January through March)		Pre-RBT 1999-2008	Post-RBT 2009-2018
No. anglers surveyed		1,119	1,096
No. angler hours		2,121.0	1,762.6
Mean Party Size		1.35	1.25
Hours/legal caught	BKT	34.5	13.5
	BNT	200.0	0
	LKT	333.3	0
	LLS	8.6	12.2
	RBT	0	1.1
	Total	**6.5**	**0.96**

Note: RBT K's at higher stocking rate after 10 years = 0.95

2016 Angler Survey Summary – Rainbow Trout

Taken from the summary section of the 2016 RM survey.

	Open Water	Ice
Gear types used (multiple responses allowed)	Trolling (23%)	NA
	Bait (39%)	NA
	Spin (21%)	
	Fly (39%)	
Most often targeted: Wild vs Hatchery	No distinction (58%)	NA
	Wild (27%)	NA
	Hatchery (14%)	NA
Size Quality	Quality ≥13"	
	Trophy ≥19"	

Rainbow Trout – Brainstorming Session

Areas to consider may include:

- Conservation of native fish
- Enhancing fishing opportunities
- Forage concerns
- Research needs
- Stocking
- Environmental/habitat concerns
- Fishing Laws and Regulations
- Management challenges

Introduction – Brown Trout

- Native to Maine: No, introduced
- Cultured in Maine's hatchery system: Yes; spring yearling, fall yearling
- Typical Length of Brown Trout: 12-20"
- State record: 23.5 pounds caught at Square Pond (Sanford, Maine) in 1996.
- Management schemes: General, Size Quality, Trophy

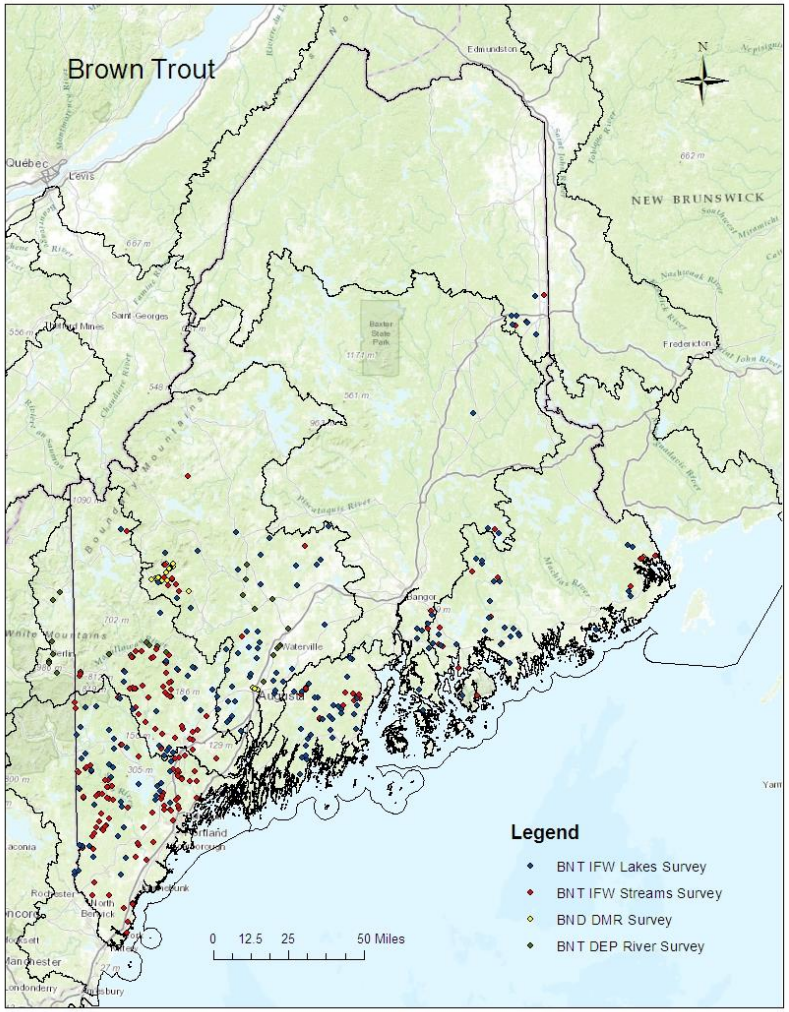
Management History – Brown Trout

- *1885: 1st stocking in Branch Lake Maine*
- *1900: 20 waters stocked in central and southern Maine. Most of these early stockings deemed unsuccessful (low returns, few self-sustaining populations).*
- *1920-1931: no BNT stockings*
- *1932-1940's: more than 100 Maine waters stocked with BNT.*
- *Many BNT stockings terminated due to competition with other native species (i.e. LLS and BKT).*
- *Despite over a century of stocking, few populations of self-sustaining brown trout occur in Maine waters.*
- *Currently: 123 lakes/ponds and ~ 40 rivers/streams are stocked annually with BNT.*

Current Distribution – Brown Trout

Lakes/ponds containing principal fisheries for Brown Trout		
Region	# of lakes/ponds	% total lake/pond area
A	42	22.6
B	43	50.1
C	24	12.4
D	8	3.8
E	1	0.2
F	0	0.0
G	5	1.6
Statewide Total	123	10.0*

- About 40 flowing waters stocked annually.



Current Management – Brown Trout

Currently, fisheries biologists stock Brown Trout under a few management scenarios.

(1) Brown Trout are stocked into waters with excellent water quality and abundant forage.

(2) Brown Trout are also stocked into many waters that are managed in conjunction with other salmonids as a principal or secondary fishery (i.e. rainbow trout, brook trout).

(3) In most cases, Brown Trout are utilized in marginal waters. Limited late summer water quality and/or abundant populations of competing species. Provide cold-water angling opportunity where management would be limited to existing warmwater species or put-and-take Brook Trout fisheries.

(4) Stock BNT into medium-large rivers to provide extended season put0and-take fishery with some potential for holdover (Predominantly Region A; few in B).

Current Management – Brown Trout

Regulations:

- General Law: 2-BNT MML 6” Rivers/Streams 14” Lakes/Ponds.
- Specials:

  No species specific S-codes;

  Few specials, mostly on large rivers: MML 18”; Single hook ALO/C & R; Large River Section - ALO/16-20” protective slot

Current Management – Brown Trout

Sampling/monitoring methods:

- Creel Survey, Trapnetting, Gillnetting, and Experimental Angling (Rivers);
- BNT are difficult to sample, sampling often results in very limited sample sizes.

What data are used to make management decisions:

- Catch rates, harvest, and angler returns
- Age, Growth, and Survival

Recent MDIFW Initiatives – Brown Trout

Brown Trout Strain Study
(Paired Stockings)

- Decline in BNT fisheries in 2005
- Cause: Unknown; gentetics?
- Compare New Gloucester vs. Sandwich;
- Compare New Gloucester vs. Seeforellen

Recent MDIFW Initiatives – Brown Trout

Performance SCORECARD

	Brown Trout Strain		
	New Gloucester	Seeforellen	Sandwich River
1. Genetic Diversity			
2. Stocking Size			
3. Gillnet/Trapnet Data			
4. Creel Survey Data			

- Seeforellen chosen as new strain.

Recent MDIFW Initiatives – Brown Trout

2011 Region A Brown Trout evaluations:

- Assessed all lake fisheries (37 waters);
- Mean size 16.5 inches and 1.9 pounds (N>400);
- 90% of the waters met the 15” quality length objective (prior SPP Plan)
- 83% met the trophy criteria of producing some trout=> 18”
- Abundance is low; catch rates/angler returns low; best anglers experience acceptable catch rates;
- Data suggests the increase in minimum length limit from 12-14” may not have benefited anglers or the BNT fisheries.

Recent MDIFW Initiatives – Brown Trout

2014-2016 Mousam Lake Winter Creel Survey:

- 3-Year Mean Catch Return for BNT = 9.3%; Stocking Rate 1,170 FY/Year
- 3-Year Mean Catch Return for LLS = 53.4%; Stocking Rate 200 FY & 40-50 AD.
- Although stocking BNT at ~5x the rate of LLS; getting ~6 times fewer BNT returned to the angler.
- Recommendation: Considering canceling the BNT program and replacing with RBT.

2016 Angler Survey Summary – Brown Trout

Taken from the summary section of the RM survey.

	Open Water	Ice
Gear types used (multiple responses allowed)	Trolling (38%)	Traps/tip-ups (98%)
	Bait (25%)	Jigging (26%)
	Spin (21%)	
	Fly (41%)	
Most often targeted: Wild vs Hatchery	No distinction (63%)	No distinction (57%)
	Wild (30%)	Wild (31%)
	Hatchery (5%)	Hatchery (11%)
Size Quality	Quality ≥14"	
	Trophy ≥20"	

Brown Trout – Brainstorming Session

Areas to consider may include:

- Conservation of native fish
- Enhancing fishing opportunities
- Forage concerns
- Research needs
- Stocking
- Environmental/habitat concerns
- Fishing Laws and Regulations
- Management challenges

Introduction – Splake

- Native to Maine: No
- Propagated in Maine state hatcheries: Yes; spring-yearling, fall-yearling.
- Average length of a mature adult: 12 to 18 inches
- State record: 10.19 pounds caught at Basin Pond (Augusta, Maine) in 1993. Note: This record broken 2x in 2019.
- Management schemes utilized: Incidental, General, Size Quality, and Trophy

Management History – Splake

- *1958: 1st Splake stocking (Long Pond, Washington County)*
- *1981: 1st Year Class of stocking splake by MDIFW, 2 waters included Basin Pond and Minnehonk Lake;*
- *Post 1981: stocking program continued to gradually expanded.*
- *Currently: 56 waters are stocked and managed with splake. Often managed with other coldwater species (i.e. BKT/LLS).*

Current Distribution – Splake

Lakes/ponds containing principal fisheries for splake		
Region	Number of lakes/ponds	Percent of total lake/pond area
A	6	1.2
B	6	5.3
C	15	4.1
D	4	3.3
E	15	4.1
F	5	6.4
G	5	6.8
Statewide Total	56	4.6*

- No flowing waters are stocked with Splake.

Current Management – Splake

Currently, fisheries biologists stock splake under a few management scenarios.

- Splake are typically stocked in waters with good to excellent water quality. If water quality is good they do well even in the presence of moderate to heavy competition.
- Splake exhibit flexible food habits. Although they often feed and thrive on smelt, they also utilize white perch, yellow perch, crayfish, sunfish, and minnows. This allows them to maintain good growth and condition in years when smelt are not abundant or where smelt populations are marginal.
- Why use splake?

  - A valuable management tool in that they provide quality and trophy trout fisheries where BKT are unable to do so;

  - and they provide winter fishing opportunity for quality/trophy trout whereas most BKT waters need to be closed to ice fishing due to their vulnerability.

Current Management – Splake

Regulations:

- 1986-1996: most waters were regulated under the Brook Trout General Law (5-fish bag limit and 6” or 8” minimum length limit depending on location.
- No species specific S-codes.
- In 1996, the Class I trout regulations were applied to many splake waters; 2-fish bag limit; 12” minimum length limit and only one fish may exceed 14”.
- In addition, high quality or trophy regulations were put in place in a select number of waters to provide opportunities to catch larger splake. These regulations, which are still in place, include a one fish bag limit; and a 14 or 18” minimum length limit.
- More liberal regulations may apply where there is concurrent management for other species, such as stocked Brook Trout.

Current Management - Splake

Sampling/monitoring methods:

- Creel Survey, Trapnetting, and Gillnetting;
- SPK typically sample well with winter creel surveys and gillnetting samples.

What data are used to make management decisions:

- Catch rates, harvest, and angler returns
- Age, Growth, and Survival

Recent MDIFW Initiatives – Splake

- *No recent initiatives.*
- *5-year study in early to mid 90's indicated more restrictive regulations would improve survival and size quality of most splake fisheries. Consequently, many regions modified their regulations.*
- *Region A evaluation of splake indicated initial stocking rates may have been too high as splake fisheries often exhibited poor growth and condition. In addition, they clearly performed best in waters with excellent water quality and smelt forage = reduced program ~50%.*

2016 Angler Survey Summary – Splake

Taken from the summary section of the RM survey.

	Open Water	Ice
Gear types used (multiple responses allowed)	NA	NA
	NA	NA
	NA	
	NA	
Most often targeted: Wild vs Hatchery	NA	NA
	NA	NA
	NA	NA
Size Quality	NA	
	NA	

- % of open water and ice anglers that targeted splake was 0.3 and 3.0, respectively.

Splake – Brainstorming Session

Areas to consider may include:

- Conservation of native fish
- Enhancing fishing opportunities
- Forage concerns
- Research needs
- Stocking
- Environmental/habitat concerns
- Fishing Laws and Regulations
- Management challenges