

Downeast Salmon Habitat Recovery Unit

2020 Report on 2019 Activities

Atlantic Salmon Collaborative Management Strategy

Public Meeting

May 28th, 2020

Downeast Coordinating Committee:

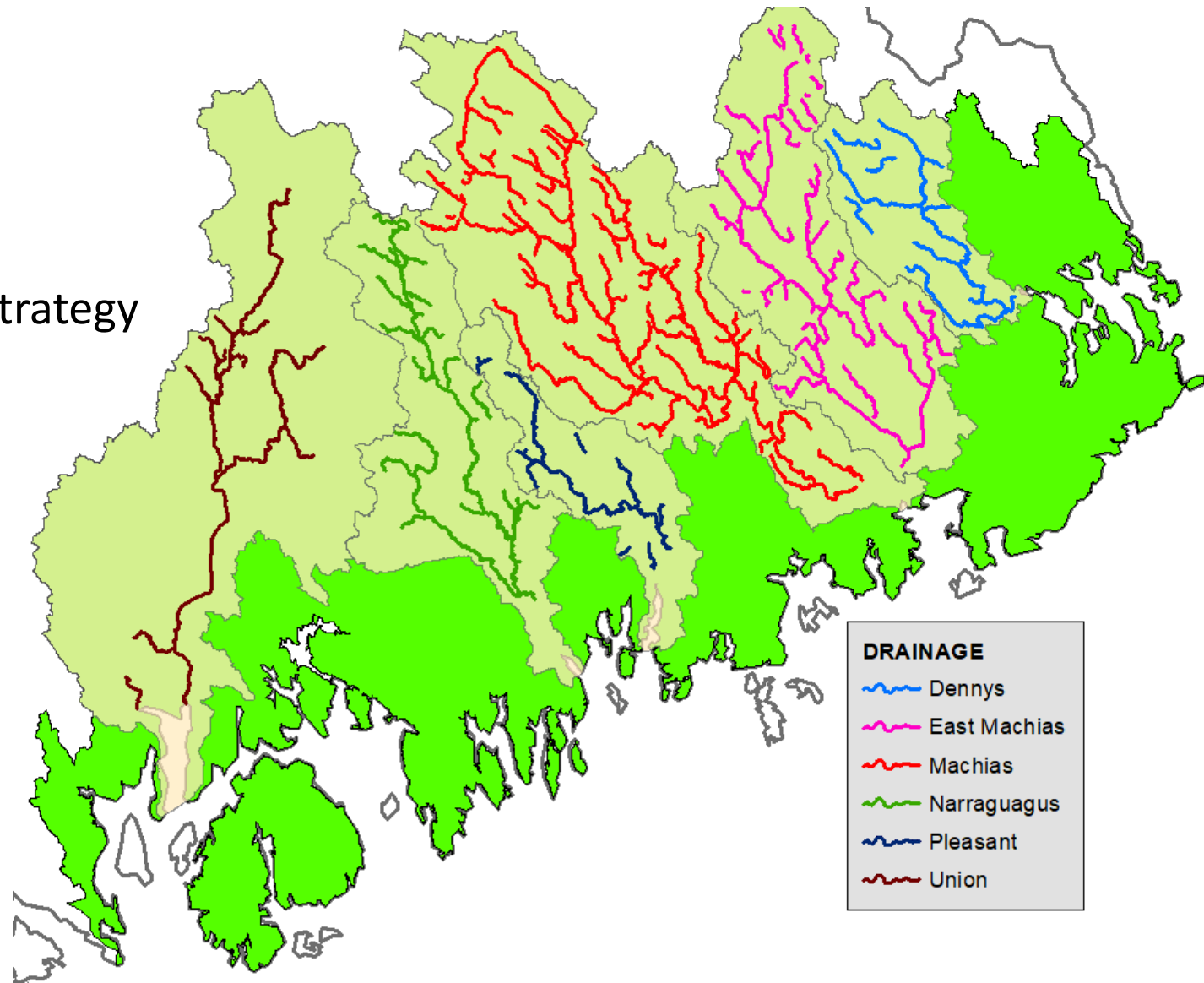
Ernie Atkinson - MDMR (Chair)

Colby Bruchs – MDMR

Denise Buckley – USFWS

Scott Craig – USFWS

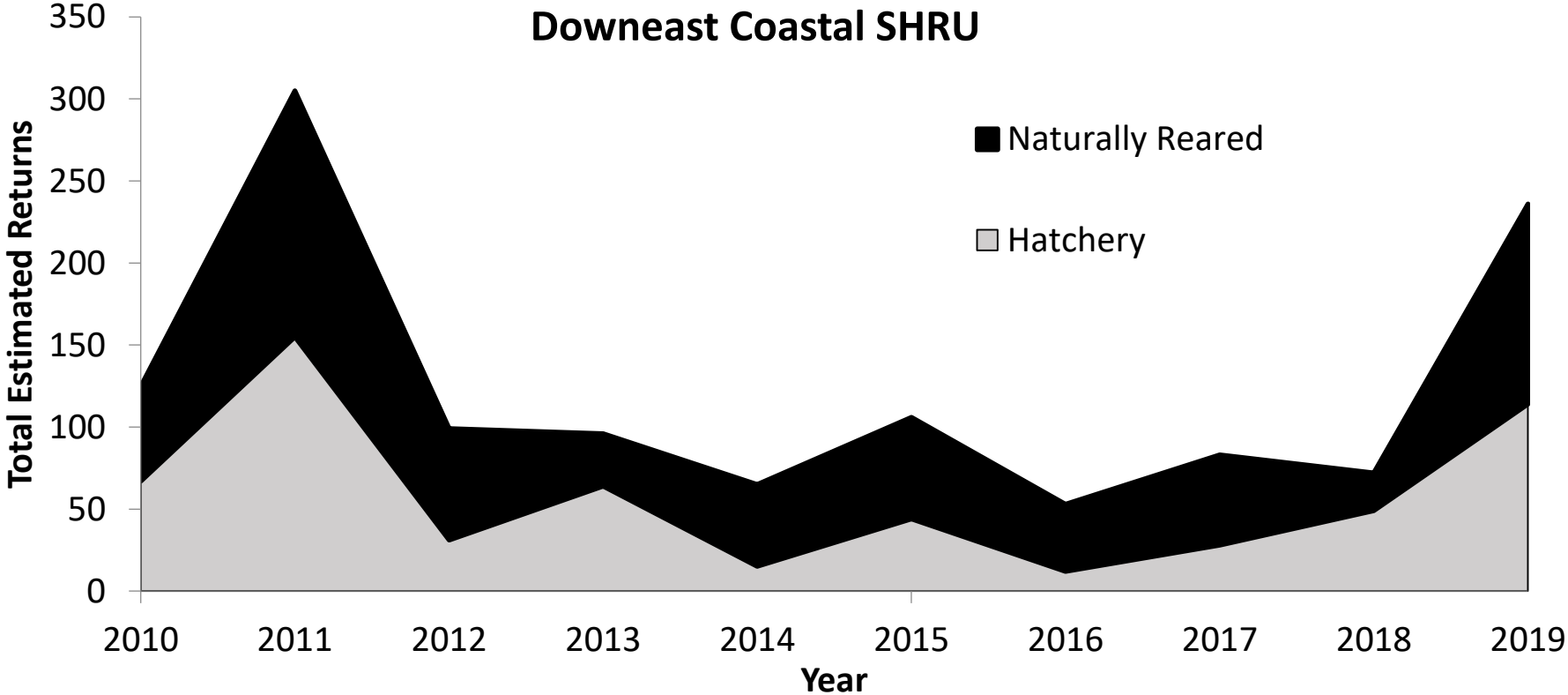
Rory Saunders - NMFS



Abundance

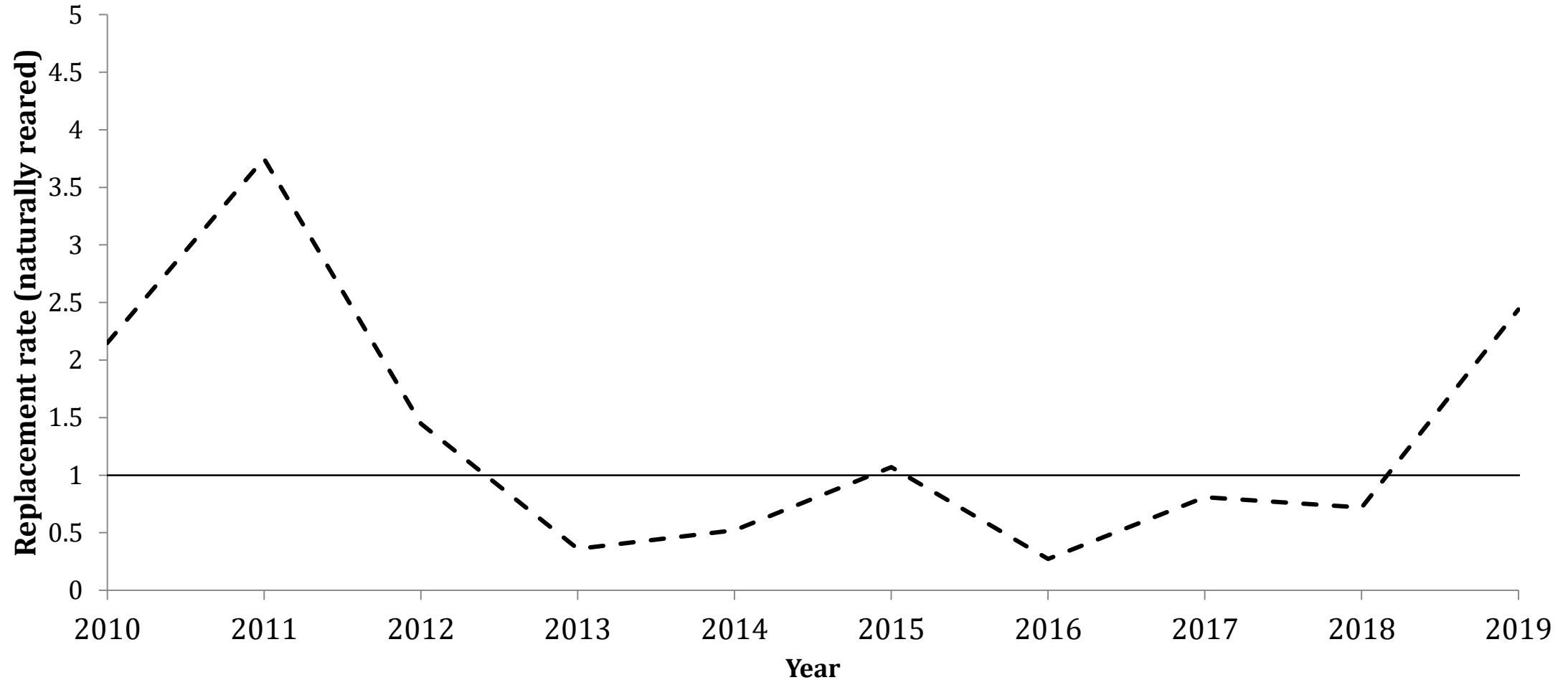
- 2019 Adult Returns to DE SHRU -236
 - Naturally Reared - 122
 - Hatchery origin - 114

River	Adult returns	% naturally reared	% Hatchery Origin
Union	2	100%	0%
Narraguagus	123	37%	63%
Pleasant	26	100%	0%
East Machias	40	1%	99%
Machias	29	100%	0%
Dennys	16	100%	0%



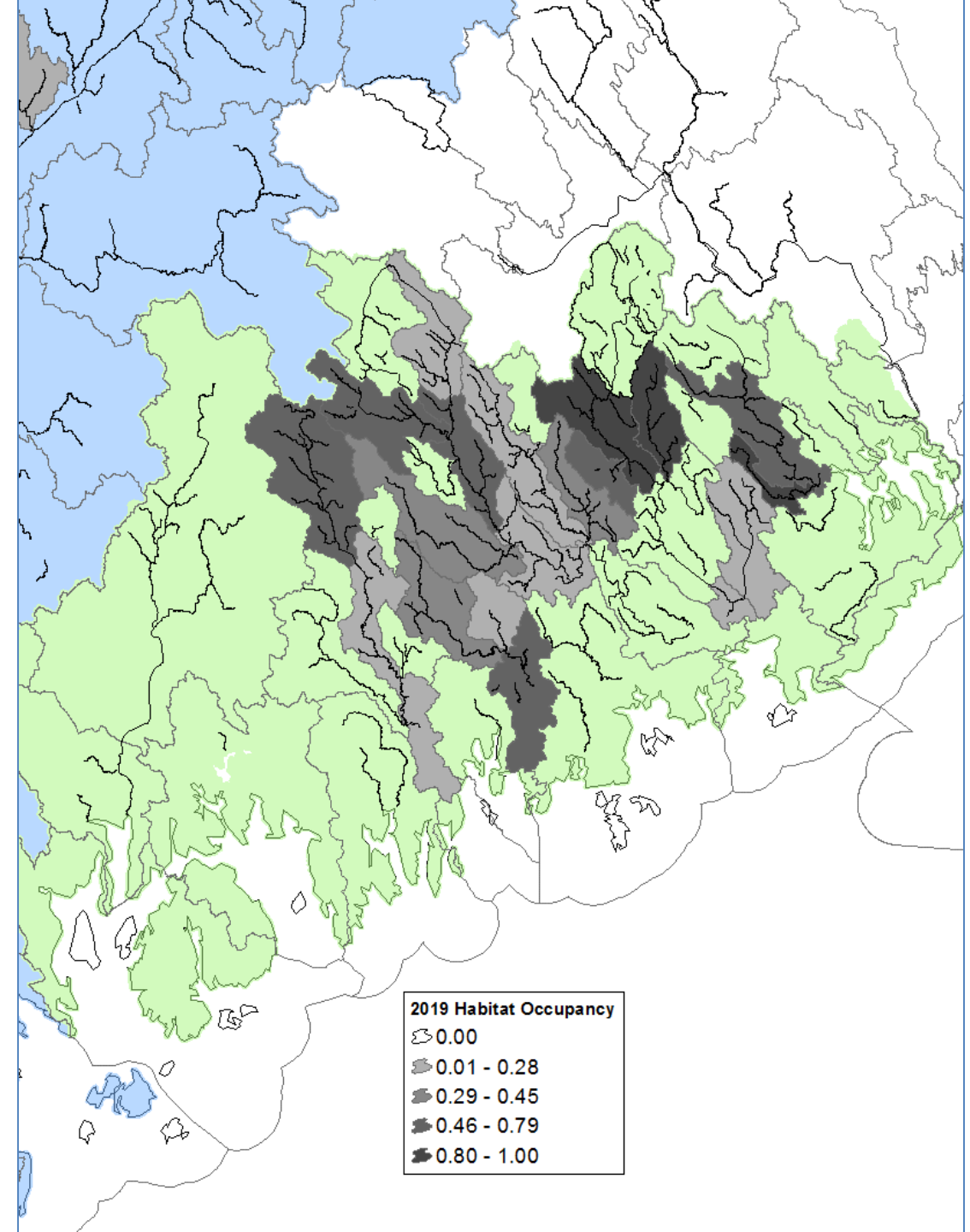
2019 Replacement rate of naturally-reared salmon

- 10-year geometric replacement rate – 0.99 (CI 0.54 – 1.82)



Spatial Distribution

- Occupancy reflects proportion of habitat presence/absence known from stocking or redd survey activities by HUC 12
- Spatial distribution closely correlated to stocking
- Mean SHRU occupancy 15% with a max of 100% and min of 0%
- Managed Drainages mean 50%, max 95%, min 3%



Stocking Activities

Total 1,248,833 salmon stocked

669,000 fry

226,000 fall parr

245,000 eyed eggs

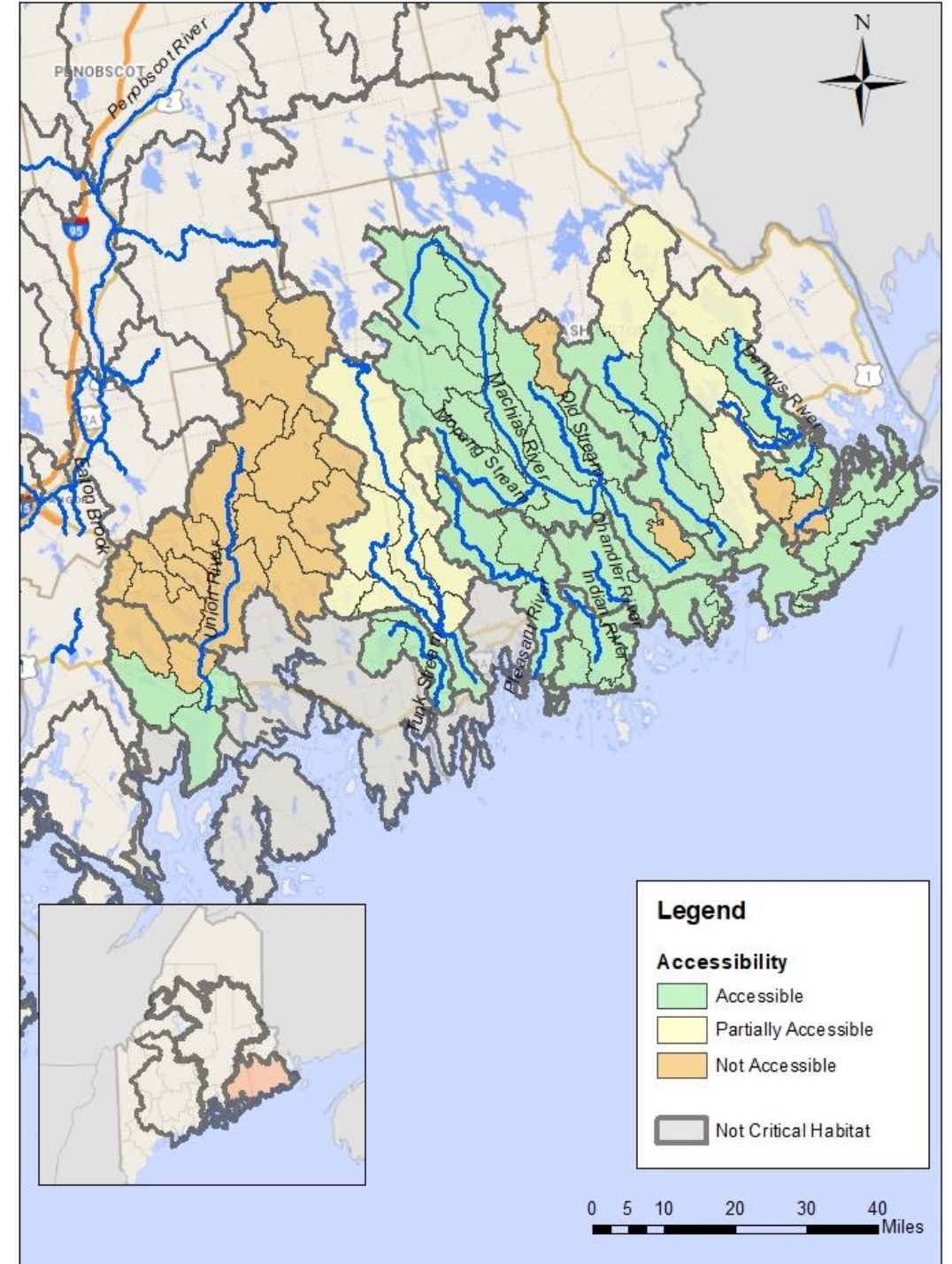
100,000 smolts



River	Life stage	Number
Union	fry	2,000
Narraguagus	egg	66,000
	fry	179,000
	1+ smolt	95,500
	2+ smolt	100
	Post-Spawn adult	253
Pleasant	egg	88,000
	fry	132,000
	post-spawn adult	171
East Machias	0+ parr	226,000
	post-spawn adult	194
Machias	egg	91,000
	fry	183,000
	2+ smolt	100
	post-spawn adult	251
Dennys	fry	175,000
	0+ parr	10,000
	post-spawn adult	264

Habitat Access

- Currently accessible habitat at the Hydrologic Unit 10 level
 - Consistent with delisting criteria in part 2F/2G of the final recovery plan and described in detail on p. 23.
 - *habitat is accessible above a dam with upstream and downstream passage*
 - *accessible above road stream crossings set at the correct elevation*



Accessibility Projects completed in 2019

- NGO projects reconnected 24.26 km of streams
 - Culvert replacements
 - PALS/Mobile Wood
 - Riparian protection
 - Dam removal



Recovery Action	Project Type	Lead Partner	Watershed	Stream/ Lake	Stream Miles	Stream Kilometers
C4.8	Open Bottom Culvert	Project SHARE	East Machias	Seavey Brook	5.5	8.85
C4.8	Open Bottom Culvert	Project SHARE	East Machias	Roaring Brook	2.5	4.02
C4.8	Embedded Round Culvert	Project SHARE	East Machias	Richardson Trib.	0.7	1.13
C4.8	Open Bottom Culvert	Project SHARE	East Machias	<i>unnamed</i>	0.2	0.32
C4.8	Open Bottom Culvert	Project SHARE	East Machias	<i>unnamed</i>	1.28	2.06
C4.8	Open Bottom Culvert	Project SHARE	Narraguagus	Baker Brook	2.5	4.02
C4.8	Open Bottom Culvert	Project SHARE	Narraguagus	Sinclair Brook	2.4	3.86
C2.3	Dam Removal	Downeast Salmon Federation	Union	Branch Lake Stream	6.0	9.65
F4.4	Restore Natural Watershed Boundary	Downeast Lakes Land Trust	Machias	Getchel/Wabasus	N/A	N/A
F3.5	Wood Griphoist	Project SHARE	East Machias	Northern Stream	0.2	0.46
F3.5	Wood PALS/Mobile	Project SHARE	Narraguagus	Above Beddington Lake	0.6	1.00
F3.2	Thermal Profile	USFWS	Machias	Old Stream (Rkm 26.9-30.2)	2.1	3.30
F3.2	Thermal Profile	USFWS	East Machias	Rkm 1.0-48.0)	29.2	47.00

Allelic Diversity: 2017

- A target of 200 parr collected for brood stock
- Allelic diversity based on 18 microsatellite loci
- Allelic diversity increased 2016 to 2017
- Allelic diversity remains stable (2008 – 2017)
- Continued monitoring essential

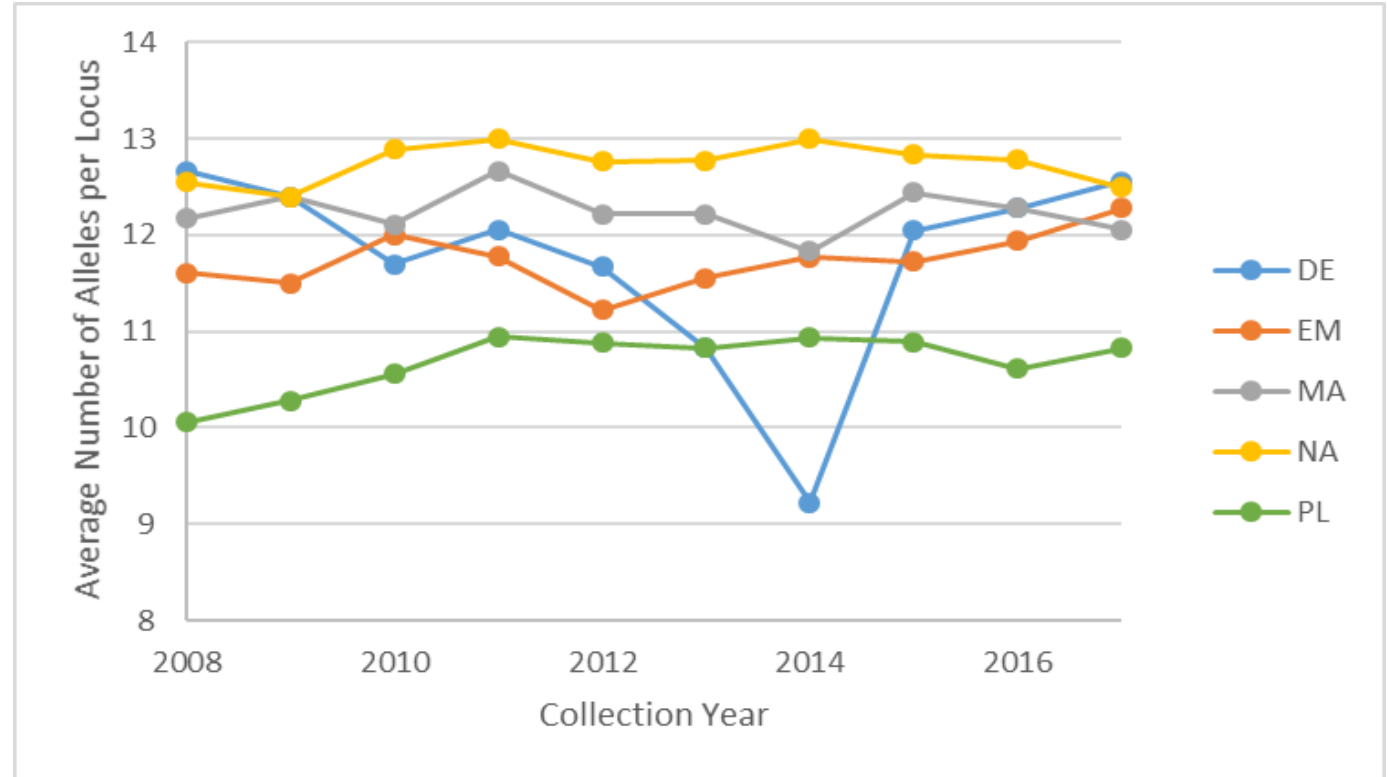


Table of adult returns by life history attributes

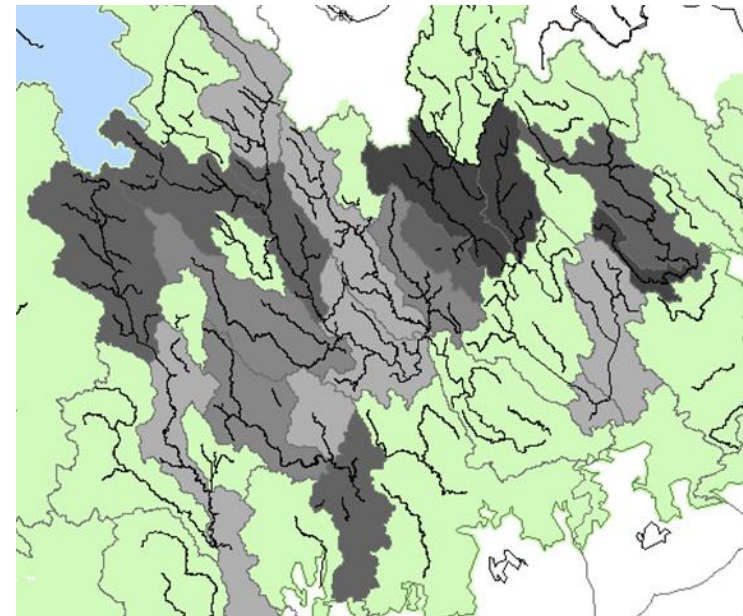
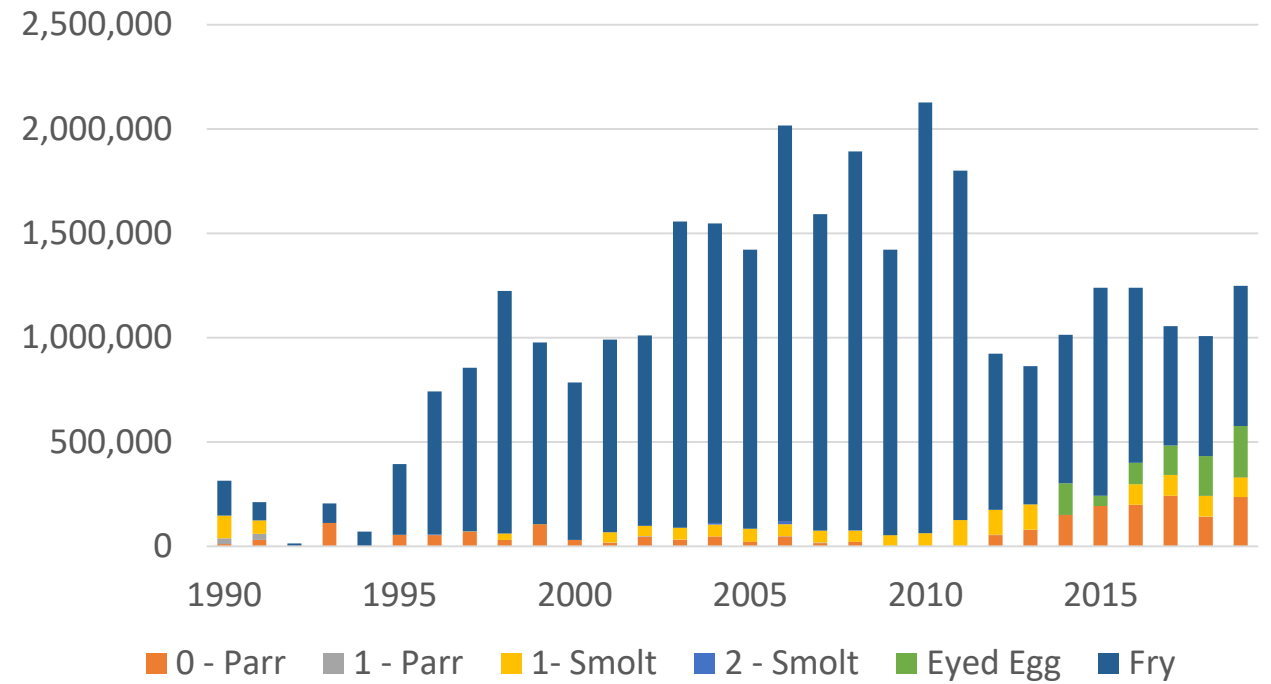
River	% 1SW	% 2SW	% 3SW	% Repeat spawners	% Age 1 smolt	% Age 2 smolt	% Age 3+ smolt
Narraguagus	81	15	1	3	63	35	2
Union	0	100	0	0	NA	NA	NA



Emerging Issues

- Freshwater production of naturally reared smolts in the DE Coastal SHRU is near historical lows.
- Filling vacant habitats to maximize smolts production limited by current hatchery production.
- Smolt to adult survival rates in the East Machias River are considerably higher than nearby rivers like the Narraguagus.
- Proposal by the Downeast Salmon Federation to raise other populations at the Peter Gray Hatchery.

Stocking by Lifestage



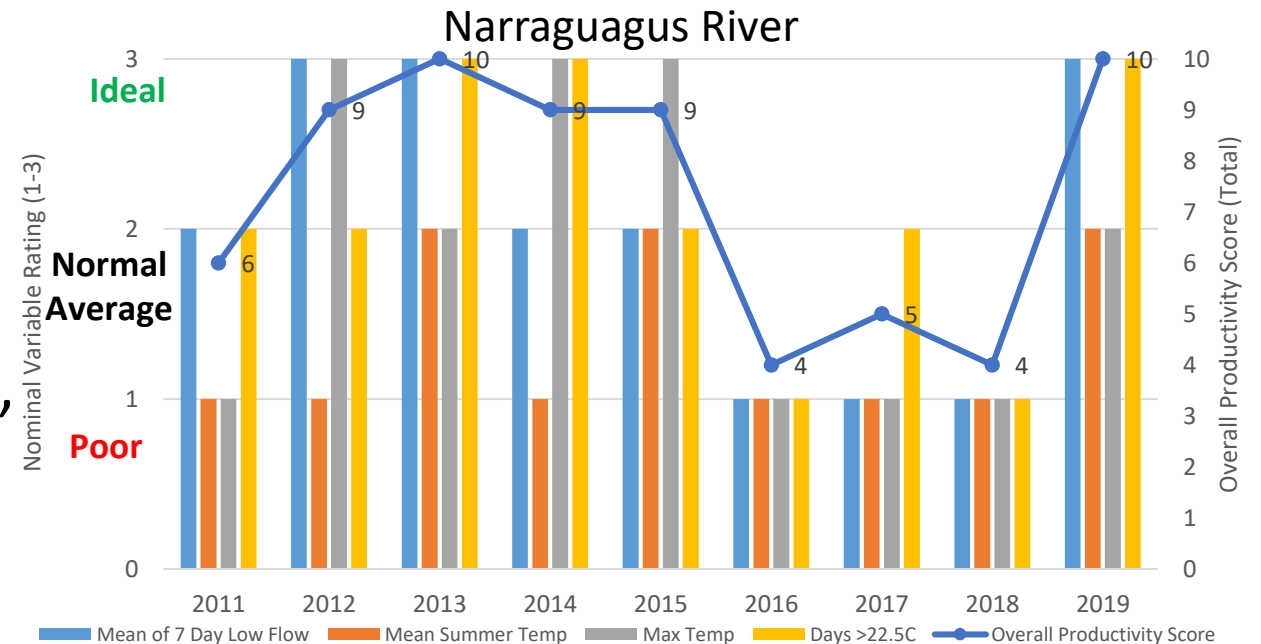
Emerging Issues

- Increasing habitat complexity in the upper Narraguagus River offers promise of improving freshwater production; however, the project remains underfunded.
- Salt water reared adult stocking is planned by Maine DMR in the Machias River (2022 and 2023).
- The future of the Ellsworth Dam in the Union River remains uncertain.
 - The Department of Environmental Protection recently denied the water quality certification for the Ellsworth Dam.



Priorities

- Restoration of fish passage is now underway at the Meddybemps powerhouse.
- Coordination for improved fish passage at the Rt. 9- Beaverdam Stream crossing.
- Feasibility of fish passage at Lower Sabao Dam in the West Branch
- Completed thermal profiles to locate cold water refugia and quantify cold water inputs in mainstem areas of the Narraguagus, East Machias and Dennys
- The “Bay of Fundy Aquatic Connectivity” project recently unveiled



Thank you, questions???

