

Restigouche 2017

SCIENCE COMMITTEE / COMITE SCIENTIFIQUE



CONSEIL DE GESTION DU BASSIN-VERSANT DE LA
RIVIÈRE RESTIGOUCHE INC.



RESTIGOUCHE RIVER
WATERSHED MANAGEMENT COUNCIL INC.

CGBVRR
RRWMC



SCIENCE COMMITTEE / COMITE SCIENTIFIQUE

Terms of Reference

- Advise on science matters pertaining to the management goals and program for the Restigouche Atlantic salmon
- Coordinate the planning and implementation of stock assessment and research programs
- Review the annual stock assessment for the Restigouche Atlantic salmon
- Provide detailed outlines of stock assessment program, and supporting research

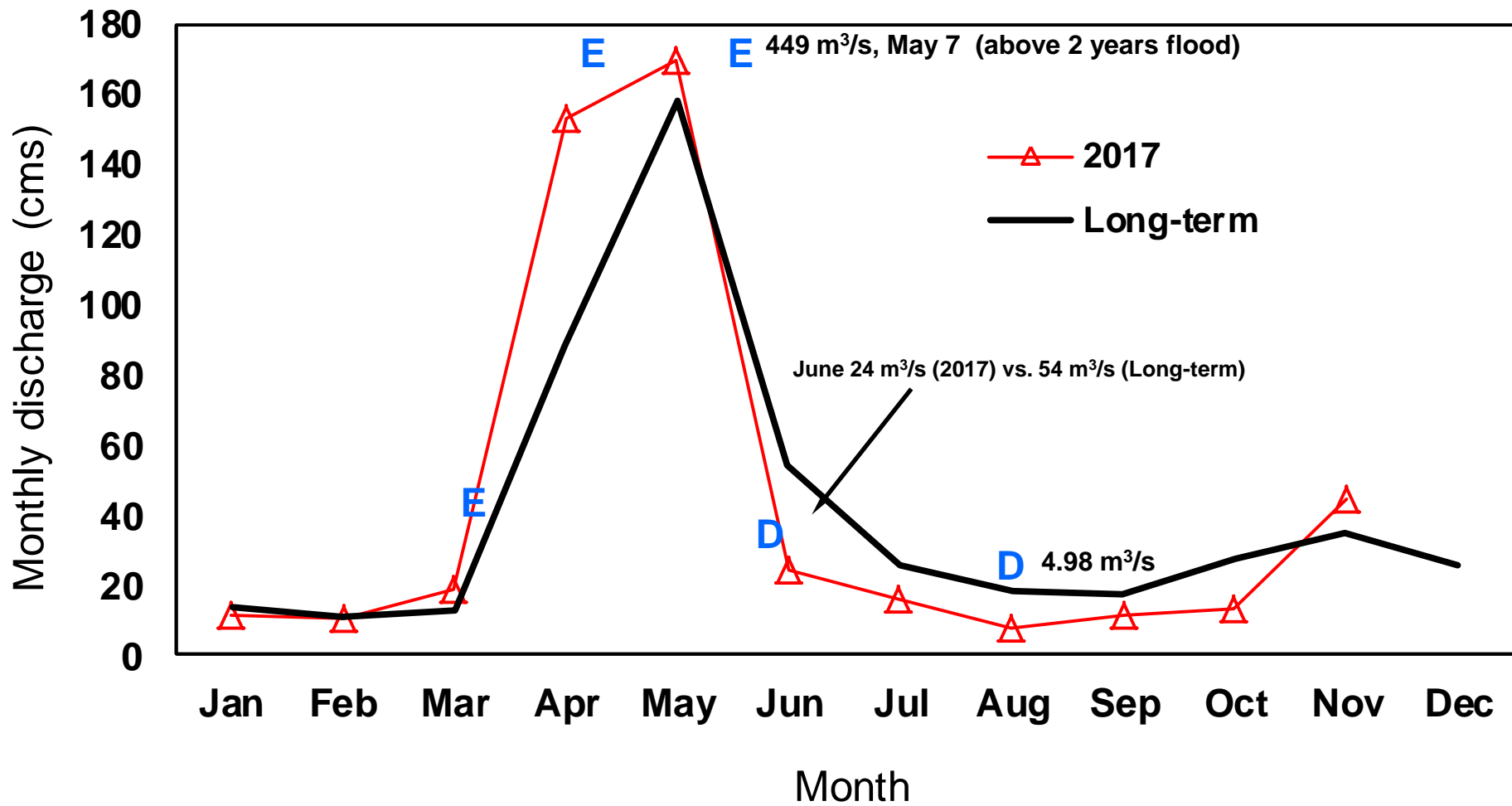


Mandat

- Aviser sur les aspects scientifiques relatifs aux objectifs de gestion et au programme du saumon de la Restigouche
- Coordonner la planification et l'amélioration des programmes d'évaluations et de recherche
- Revoir l'évaluation annuel de l'état des stock de saumon de la Restigouche
- Recommandation sur programme d'ensemencement et autres recherches

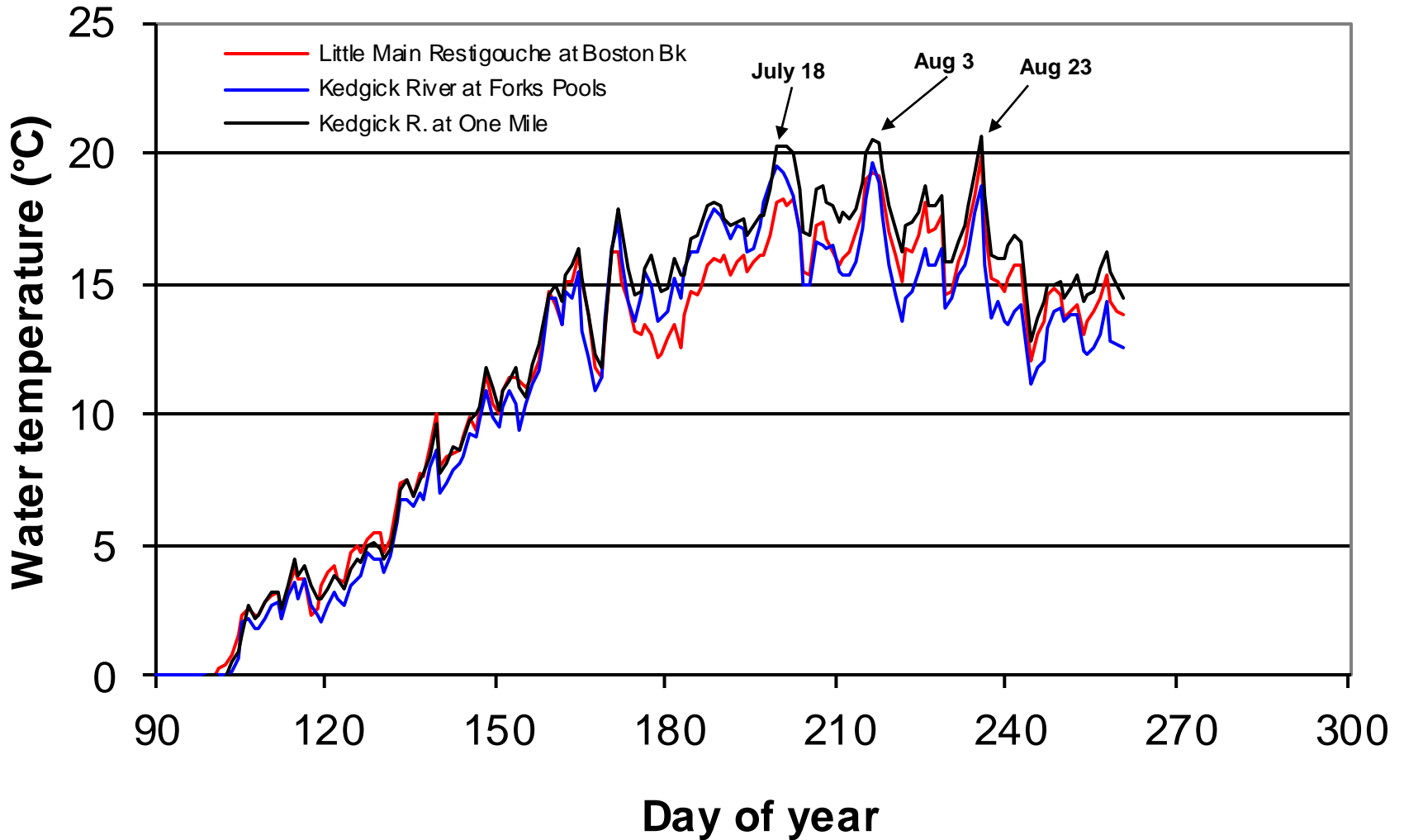
Environmental conditions

Monthly flows at Upsalquitch R. 2017



Environmental conditions

Daily water temperatures in 2017



Environmental conditions

Water Temperatures (2003-2017)

Summer water temperature statistics (July & Aug) for Restigouche River and tributaries (2003-2017)				
	2003-2017	2017	2003-2016	2017
River	Mean	Mean	Max	Max
Kedgwick River at Forks Pool	14.9	16.2	23.8	22.4
Kedgwick River 1 Mile bridge	16.2	17.8	25.3	23.5
Upsalquitch River at Crib Pool	17.4	18.7	25.7	24.3
Patapedia River at 2 Mile	15.6	16.8	23.7	22.2
Patapedia River at 30 Mile	16.6	16.6	25.9	23.8
Restigouche River at Two Brooks	17.3	18.5	24.5	23.2
Restigouche River at Butters Island	18.6	19.7	27.1	24.2
N.W.Upsalquitch River at Ten Mile Pool	17.1	18.3	27.5	24.4
S.E.Upsalquitch above Basket Rock	16.2	17.6	24.5	23.5
Upsalquitch River at Two Brooks	17.3	18.8	24.5	23.9
Causapscal River at Barrier	16.3	16.6	26.8	22.2
Matapedia River below mouth of Causapscal	17.3	17.6	24.7	23.4
Little Main Restigouche River at Boston Brook	15.4	16.4	24.5	22.6

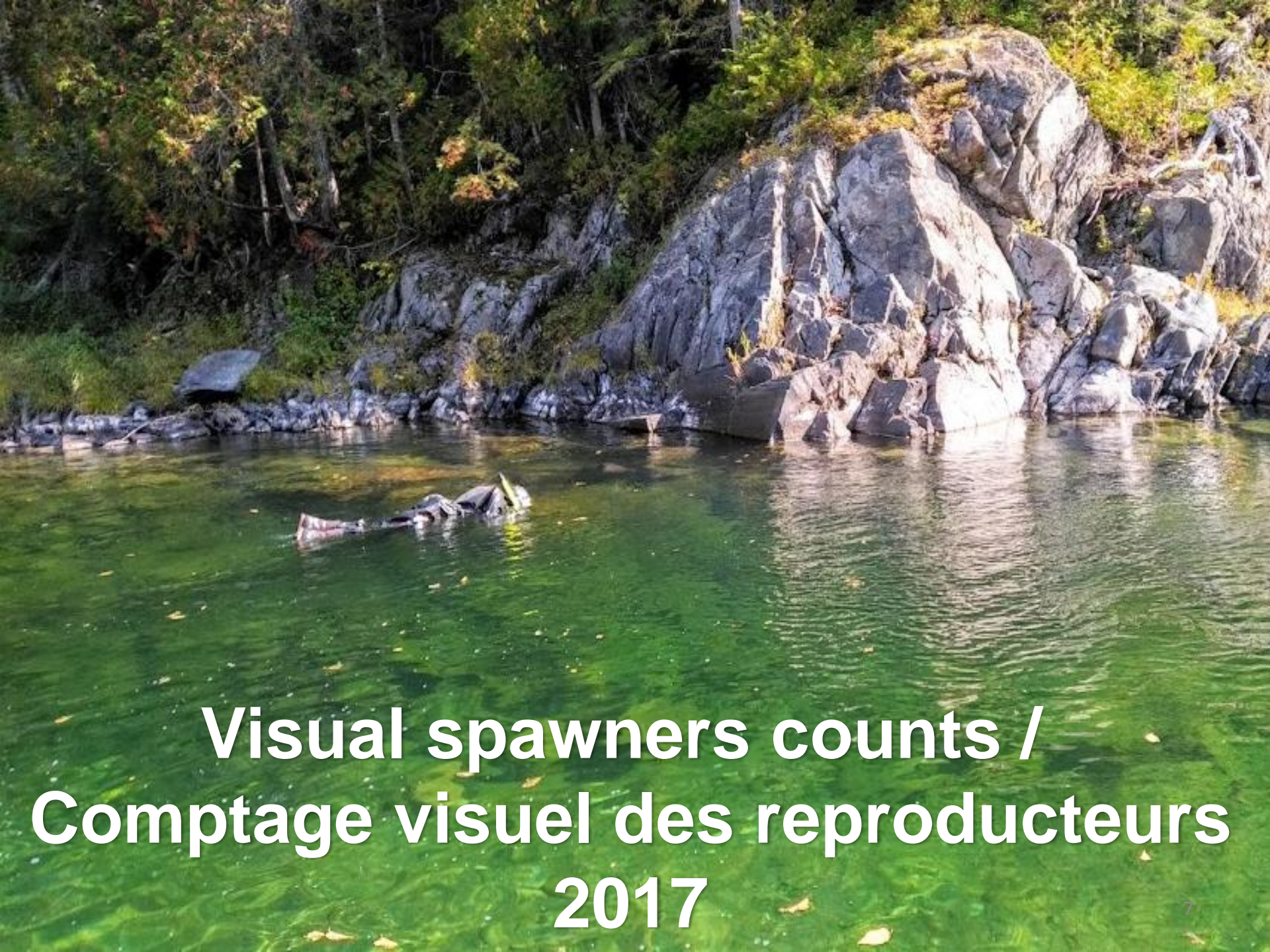
Mean temp. slightly higher than average conditions (+1.0°C)

Max temp. (2017) = 22.2°C to 24.4°C

Environmental conditions

Summary

- Excessive flows in March, April and May
- Spring peak flow on May 7 (449 m³/s), slightly above the 2-year flood
- Deficient flow in June (24 m³/s vs. 54 m³/s) and August, however, flows were below normal from June to October
- Low flows in summer close to 2-year event (5 m³/s), no winter low flows (9.5 m³/s)
- Mean summer WTs were slightly higher than normal in 2017 (+1.0°C)
- Maximum WT (22.2°C to 24.4°C)
- High WT temperature events were: July 18, August 3 and August 23



**Visual spawners counts /
Comptage visuel des reproducteurs
2017**

Snorkel counts - 2017

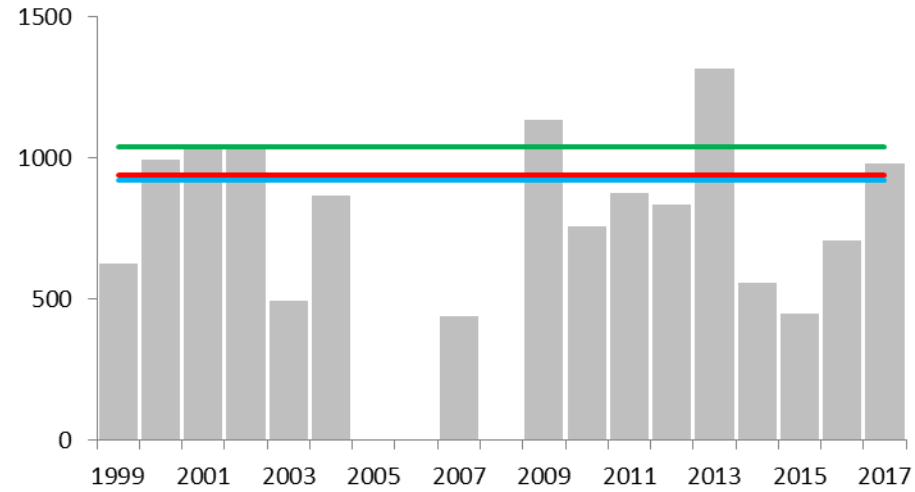
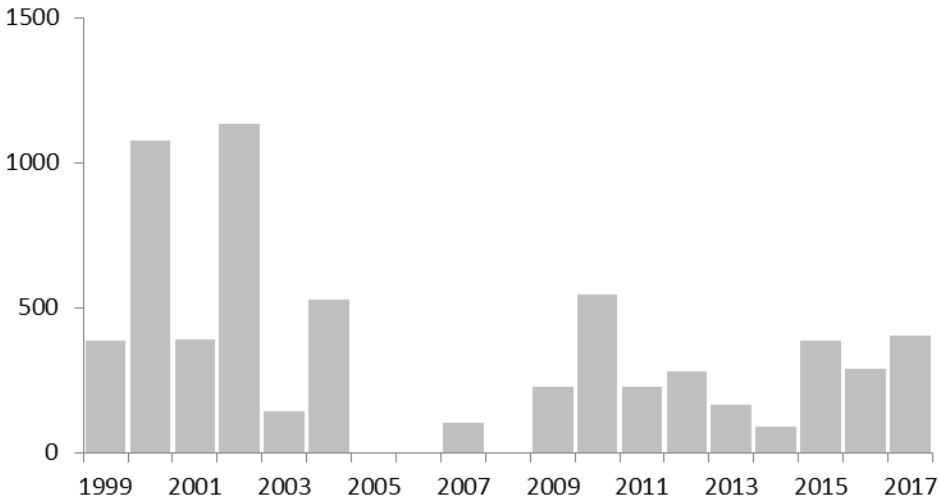
- Assistance was provided by RRWMC
- Tributaries (Kedgwick, Little Main, Gounamitz, Upsalquitch and Patapedia Rivers) were completed from Sept. 18 to 23.
- For logistical reasons the Gounamitz stretch from Dave Richards Brook to Gounamitz Falls was accessed by vehicle.
- The main stem Restigouche River was completed from Sept. 25 to 28.
- Visibility was generally good (8 to 10/10).
- Overall the observed salmon and grilse seemed to be in generally good physical condition with some fungus noted.

Spawners count

Kedgwick River

Kedgwick small salmon

Kedgwick large salmon



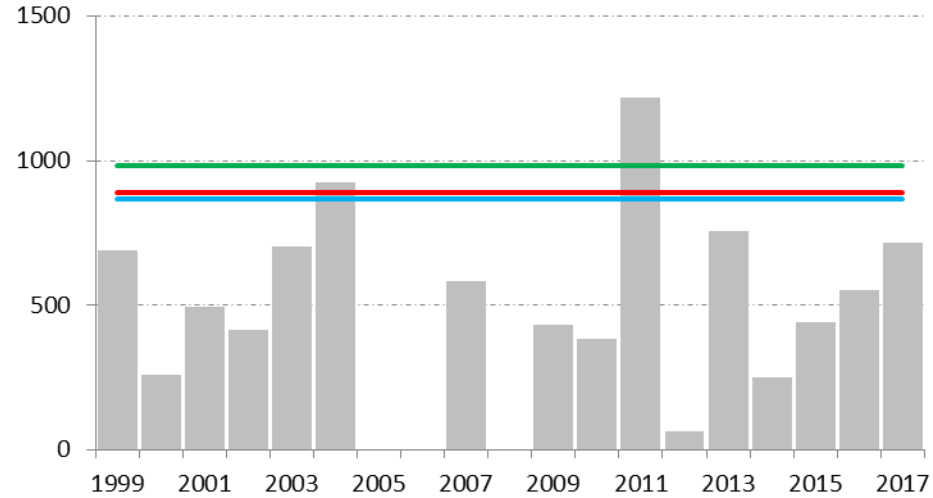
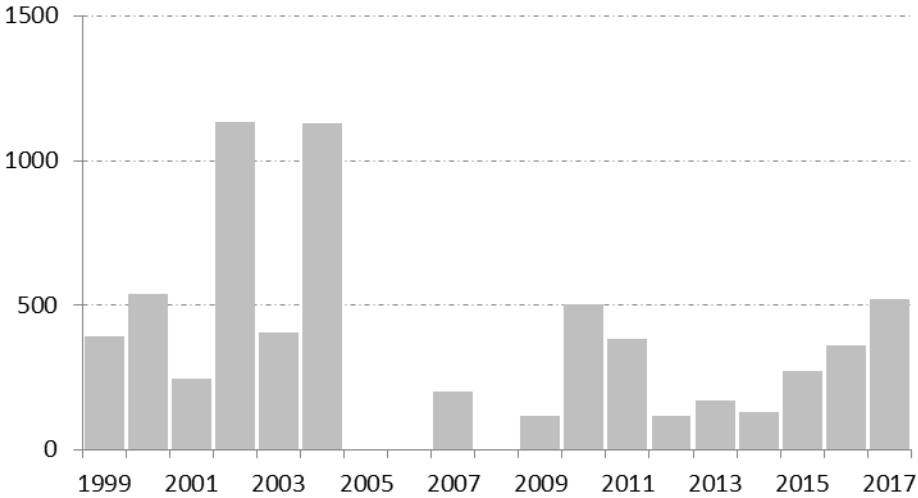
Year	Grilse	Salmon	Conservation requirement (1.68)		LRP (1.52) (in # of large salmon)
			current (in # of large salmon)	new surface/fecundity (in # of large salmon)	
2010	546	757	919	1040	941
2011	228	874	919	1040	941
2012	279	836	919	1040	941
2013	167	1318	919	1040	941
2014	91	556	919	1040	941
2015	387	451	919	1040	941
2016	291	707	919	1040	941
2017	403	978	919	1040	941

Spawners count

Little Main River

Little Main small salmon

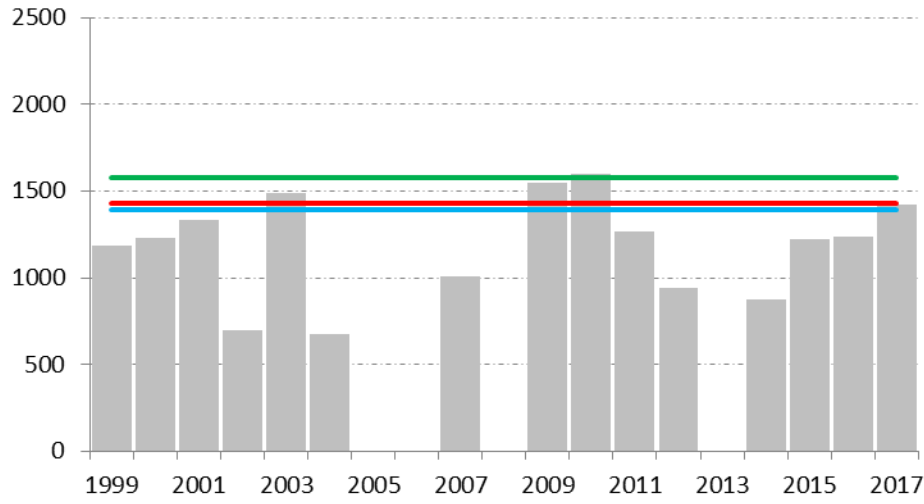
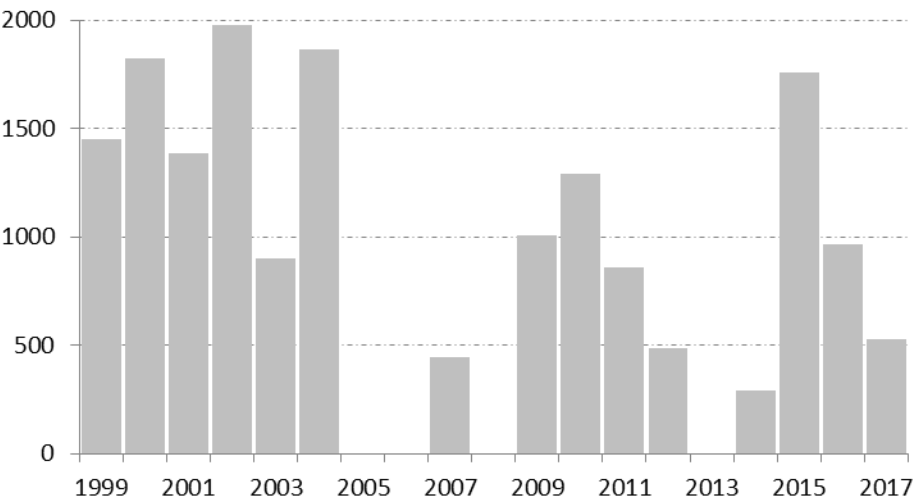
Little Main large salmon



Year	Grilse	Salmon	Conservation requirement (1.68)		LRP (1.52) (in # of large salmon)
			current (in # of large salmon)	new surface/fecundity (in # of large salmon)	
2010	505	381	869	983	890
2011	384	1219	869	983	890
2012	119	63	869	983	890
2013	168	755	869	983	890
2014	128	250	869	983	890
2015	272	442	869	983	890
2016	360	551	869	983	890
2017	522	715	869	983	890

Spawners count

Upsalquitch small salmon Upsalquitch River Upsalquitch large salmon



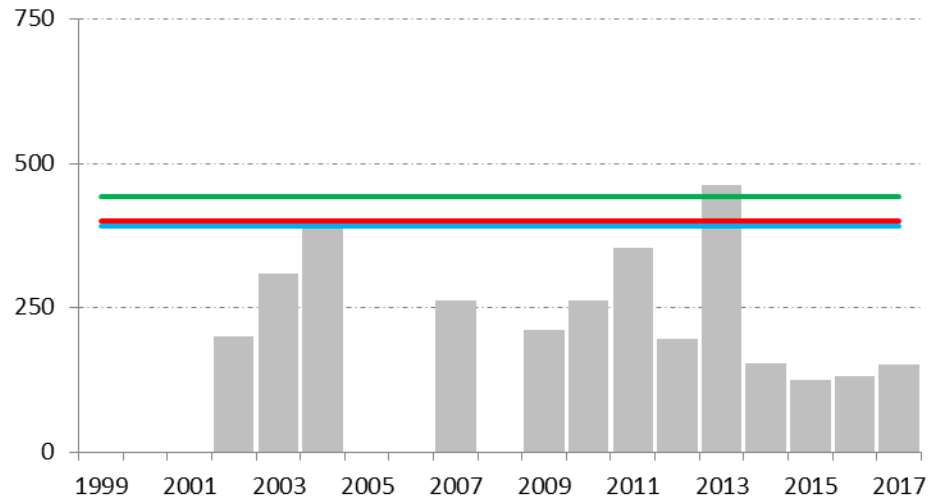
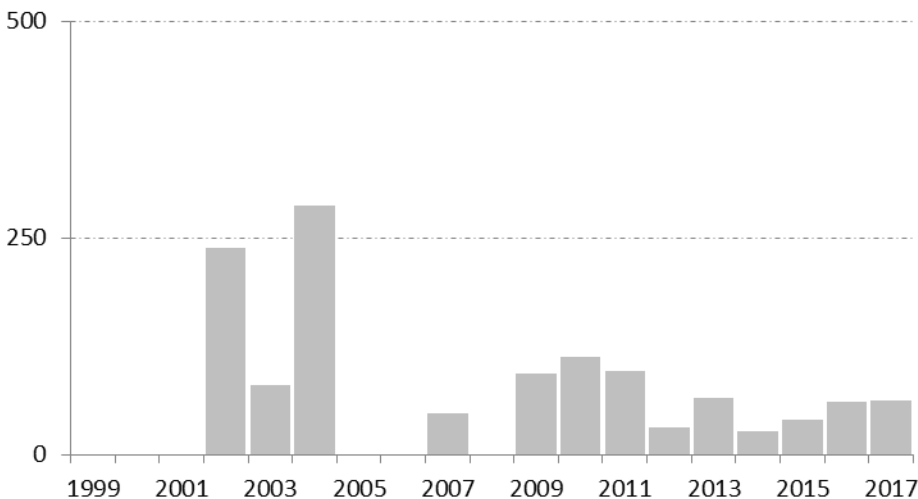
Year	Grilse	Salmon	Conservation requirement (1.68)		LRP (1.52)
			current (in # of large salmon)	new surface/fecundity (in # of large salmon)	
2010	1293	1603	1394	1577	1427
2011	861	1265	1394	1577	1427
2012	486	942	1394	1577	1427
2013			1394	1577	1427
2014	290	878	1394	1577	1427
2015	1759	1220	1394	1577	1427
2016	965	1235	1394	1577	1427
2017	530	1422	1394	1577	1427

Spawners count

Patapedia River (DFO in September)

Patapedia small salmon

Patapedia large salmon



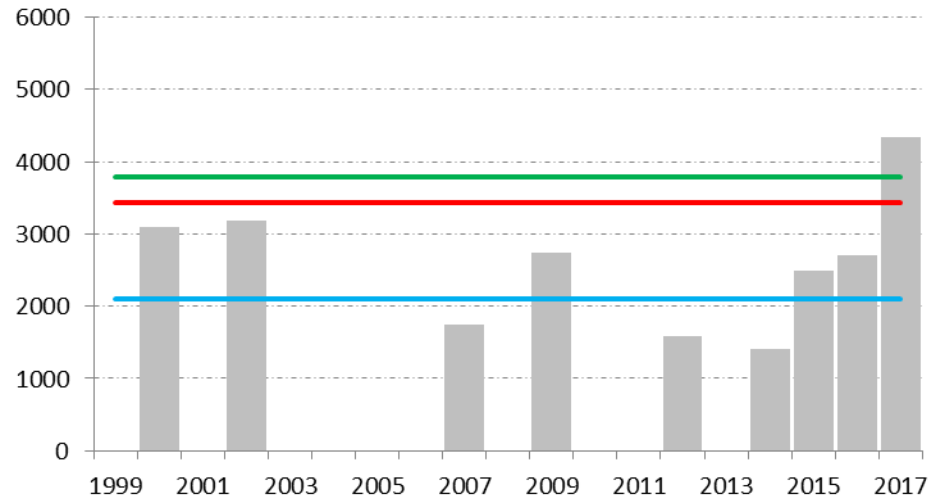
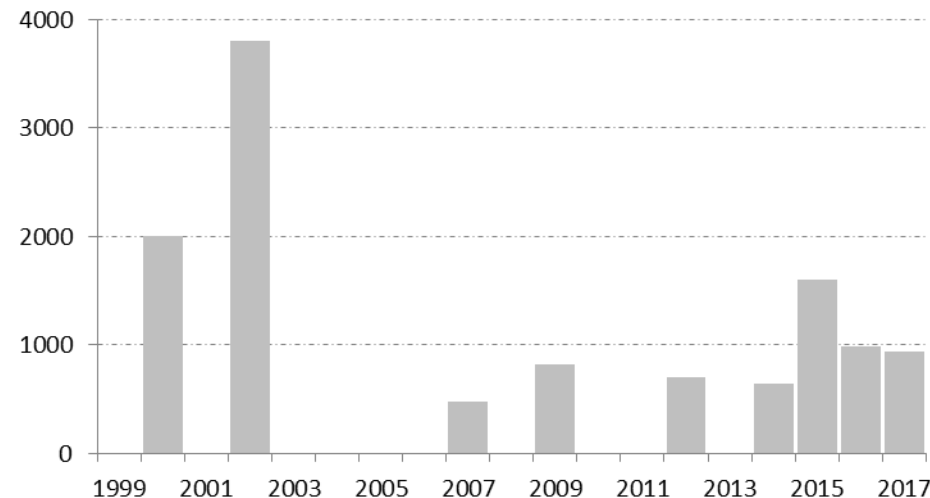
Year	Grilse	Salmon	Conservation requirement (1.68)		
			current (in # of large salmon)	new surface/fecundity (in # of large salmon)	LRP (1.52) (in # of large salmon)
2010	113	263	391	443	400
2011	97	353	391	443	400
2012	31	195	391	443	400
2013	65	463	391	443	400
2014	27	153	391	443	400
2015	40	126	391	443	400
2016	61	131	391	443	400
2017	62	152	391	443	400

Spawners count

Main stem Restigouche River

Main stem small salmon

Main stem large salmon

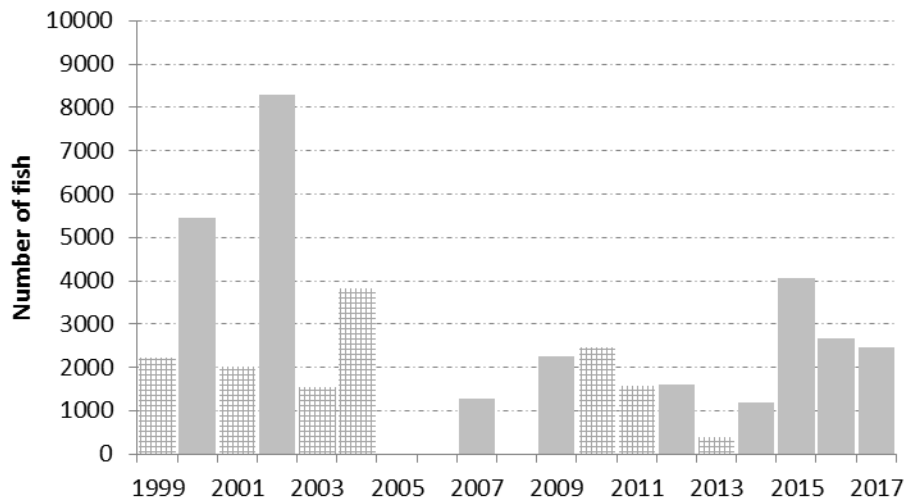


Year	Grilse	Salmon	Conservation requirement (1.68)		
			current (in # of large salmon)	new surface/fecundity (in # of large salmon)	LRP (1.52) (in # of large salmon)
2010			2096	3796	3435
2011			2096	3796	3435
2012	702	1579	2096	3796	3435
2013			2096	3796	3435
2014	643	1400	2096	3796	3435
2015	1606	2497	2096	3796	3435
2016	995	2700	2096	3796	3435
2017	944	4336	2096	3796	3435

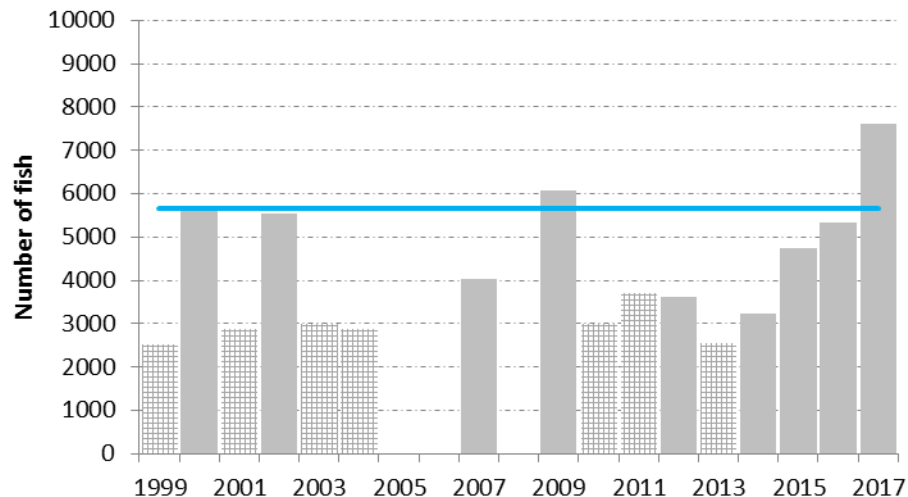
Spawners count

Spawner counts Restigouche River


Restigouche River small salmon



Restigouche River large salmon



Year	Grilse	Salmon	Conservation requirement (1.68)		LRP (1.52) (in # of large salmon)
			current (in # of large salmon)	new surface/fecundity (in # of large salmon)	
2010	2457	3004	5668	7839	7092
2011	1570	3711	5668	7839	7092
2012	1617	3615	5668	7839	7092
2013	400	2536	5668	7839	7092
2014	1179	3237	5668	7839	7092
2015	4064	4736	5668	7839	7092
2016	2662	5324	5668	7839	7092
2017	2461	7603	5668	7839	7092



Bilan saumon 2017 BV Ristigouche Rivières du Québec

Quebec Rivers – Rivières Québec

Captures 2017 Catches

Madeleineaux / Grilse retained

Rivières	2017	2016	moyenne 12-16
Matapédia	358	393	455
Causapschal	13	14	18
Patapédia	12	44	44
Kedgwick	1	4	7

Remises à l'eau / Live release

Rivières	2017	2016	Moyenne 12-16
Matapédia	631	787	146
Causapschal	21	10	12
Patapédia	29	64	43
Kedgwick	3	3	2

Rédibermarins / Salmon retained

Rivières	2017	2016	moyenne 12-16
Matapédia	213	0	491
Causapschal	111	118	123
Patapédia	0*	0*	19

Effort de pêche / Fishing effort

Rivières	Jour/pêche - Rod days		
	2017	2016	moyenne 12-16
Matapédia	7507	6698	7907
Causapschal	367	360	344
Patapédia	666	861	819
Kedgwick	183	185	219

Quebec Rivers – Rivières Québec

Montaisons (incluant captures) 2017 Run (including catches)

Madeleineaux / Grilse (total)

Rivières	2017	2016	moyenne 12-16
Matapédia	440*	574*	670
Causapschal	24	28	50
Patapédia	60	55	167

*Nombre estimé à partir des décomptes de mi-saison

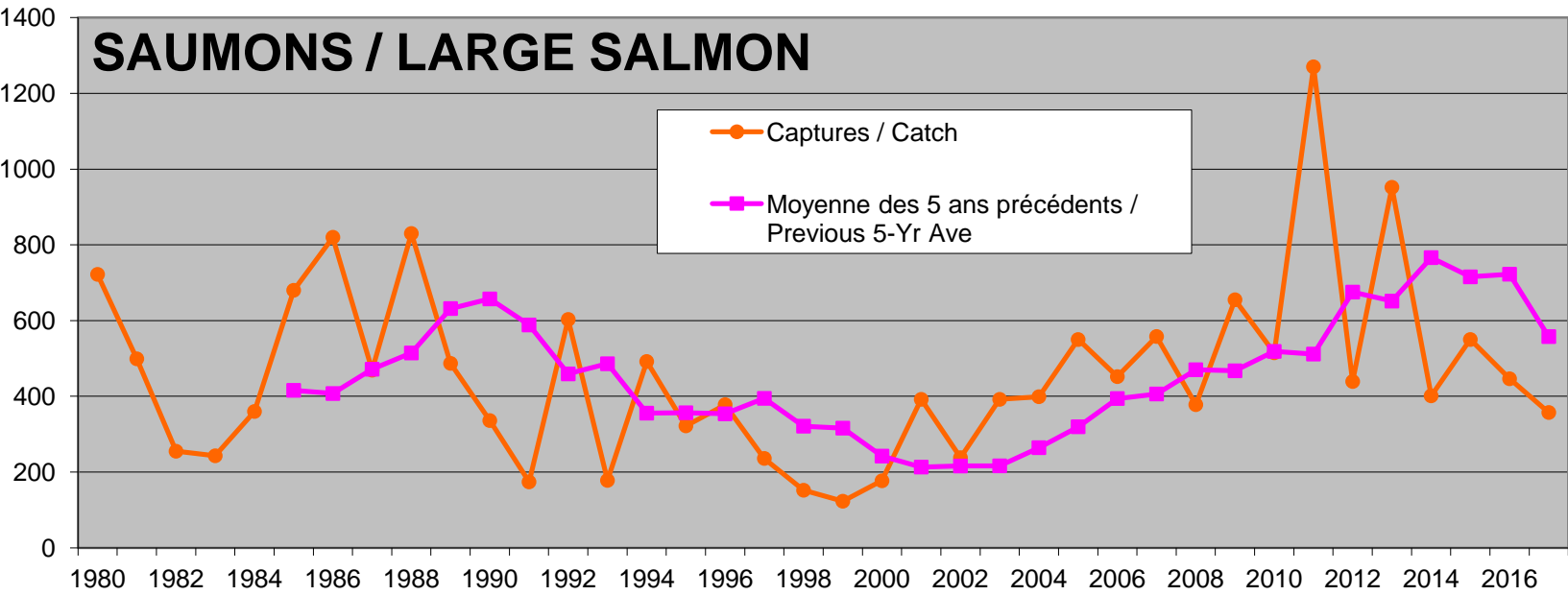
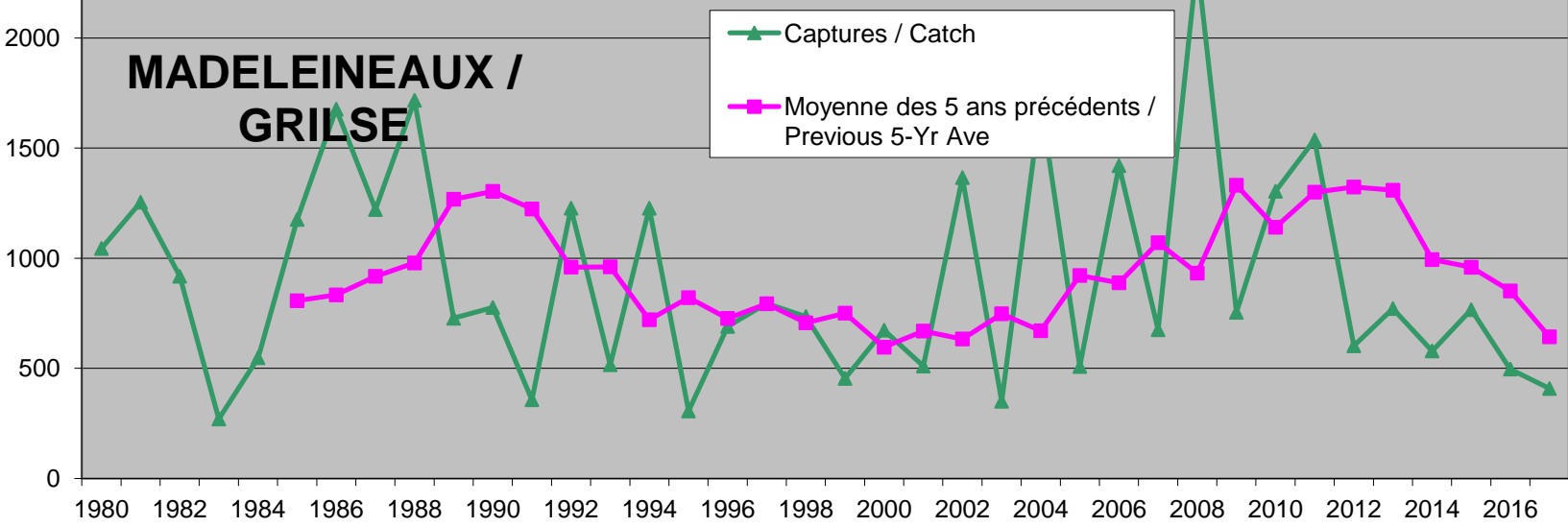
Rédimermarins / Salmon (total)

Rivières	2017	2016	moyenne 12-16
Matapédia	1830*	1367*	1636
Causapschal	627	451	658
Patapédia	393	220	460

Déposition d'œufs / Egg deposition

Rivières	2017	2016	moyenne 12-16	% seuil optimal
Matapédia	12,35	10,31	7,55	119 %
Causapschal	3,57	2,47	3,44	147%
Patapédia	2,83	1,58	2,86	101 %

Crown Reserved waters

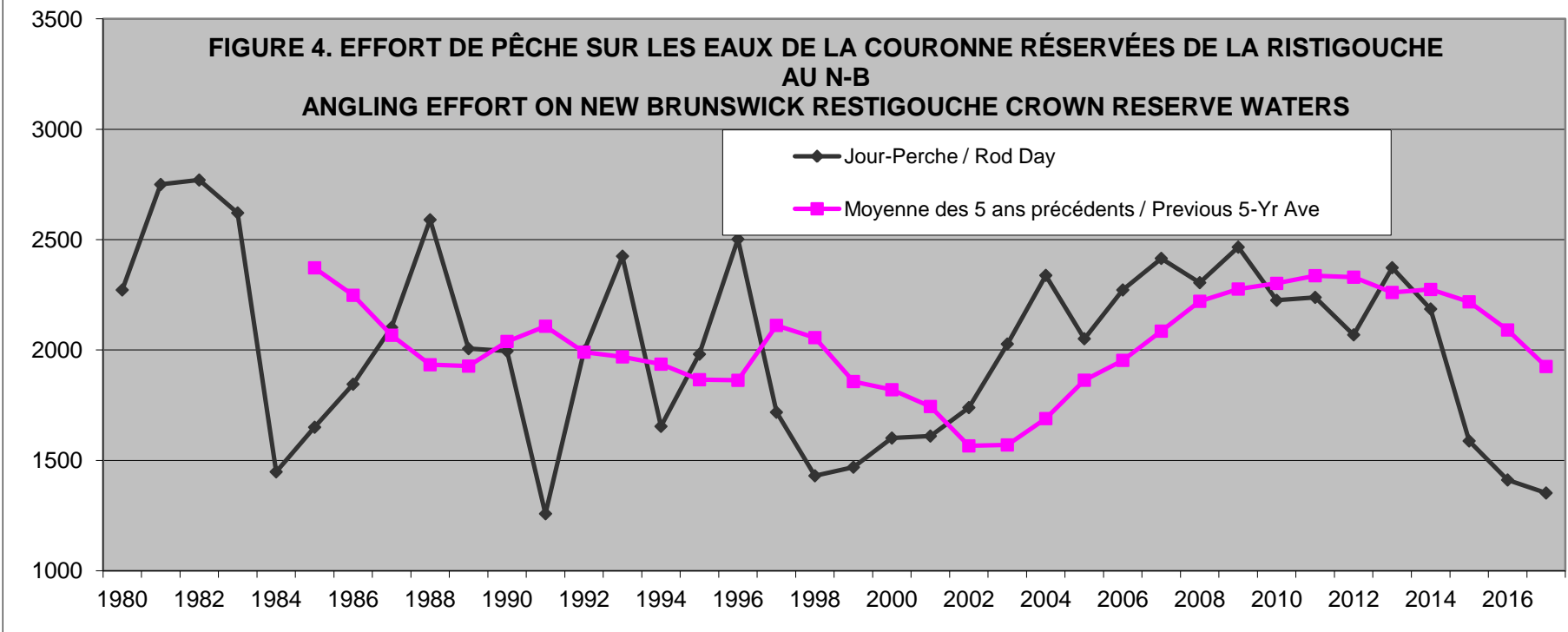


Crown Reserved waters



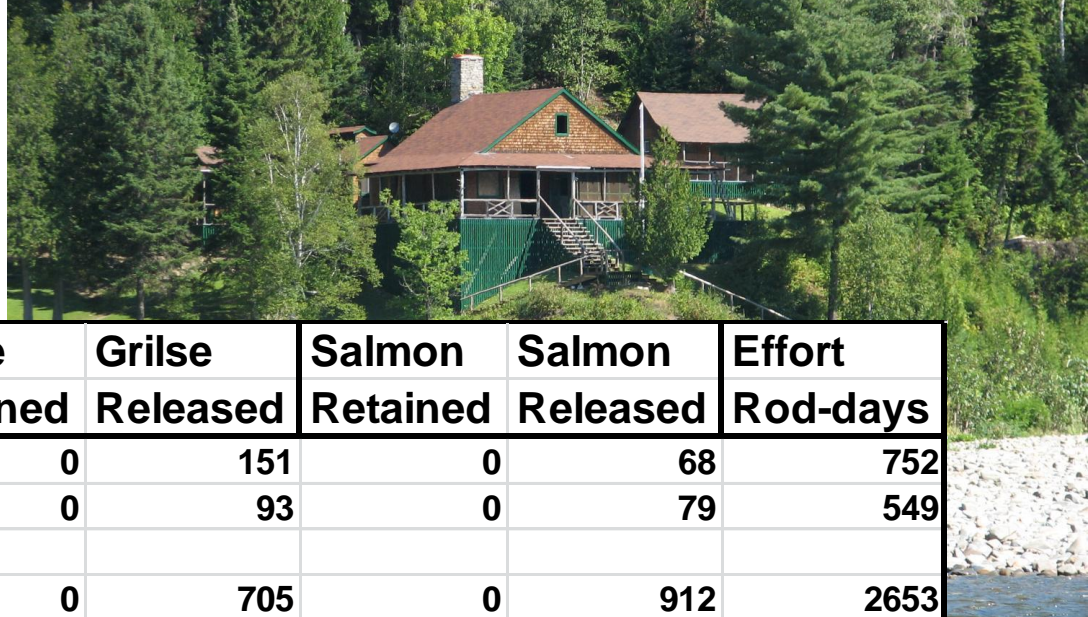
JOUR-PERCHE / ROD DAYS

FIGURE 4. EFFORT DE PÊCHE SUR LES EAUX DE LA COURONNE RÉSERVÉES DE LA RISTIGOUCHE AU N-B
ANGLING EFFORT ON NEW BRUNSWICK RESTIGOUCHE CROWN RESERVE WATERS



**Regs change
to no tag: 2015**

Private fishing camps – camps de pêche



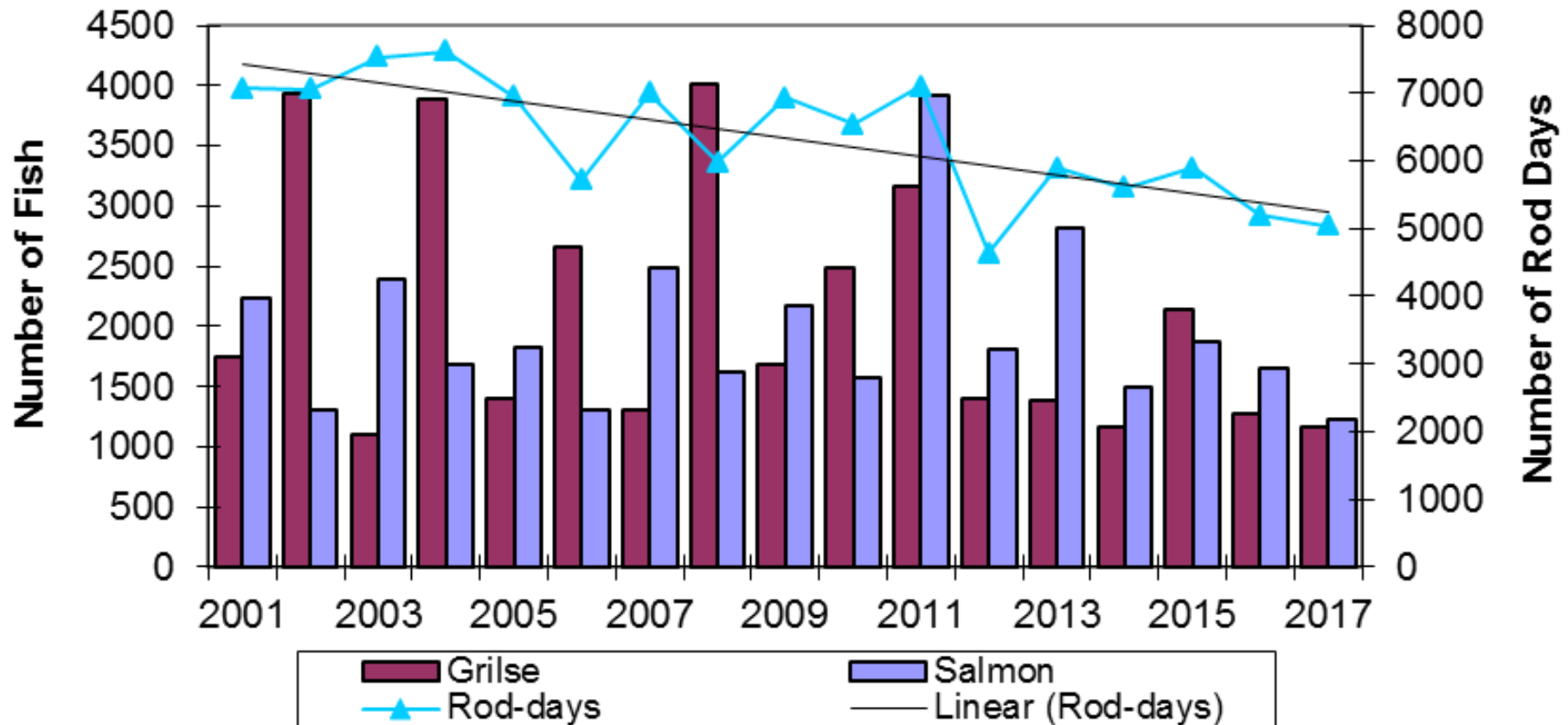
Year	River	Grilse Retained	Grilse Released	Salmon Retained	Salmon Released	Effort Rod-days
2017	Upsalquitch Totals:	0	151	0	68	752
	Kedgwick Totals:	0	93	0	79	549
	Little Main Totals:					
	Main Restigouche Totals:	0	705	0	912	2653
	Restigouche N.B. Totals	0	949	0	1059	3954

corrected data 2017 (Jan. 2017)

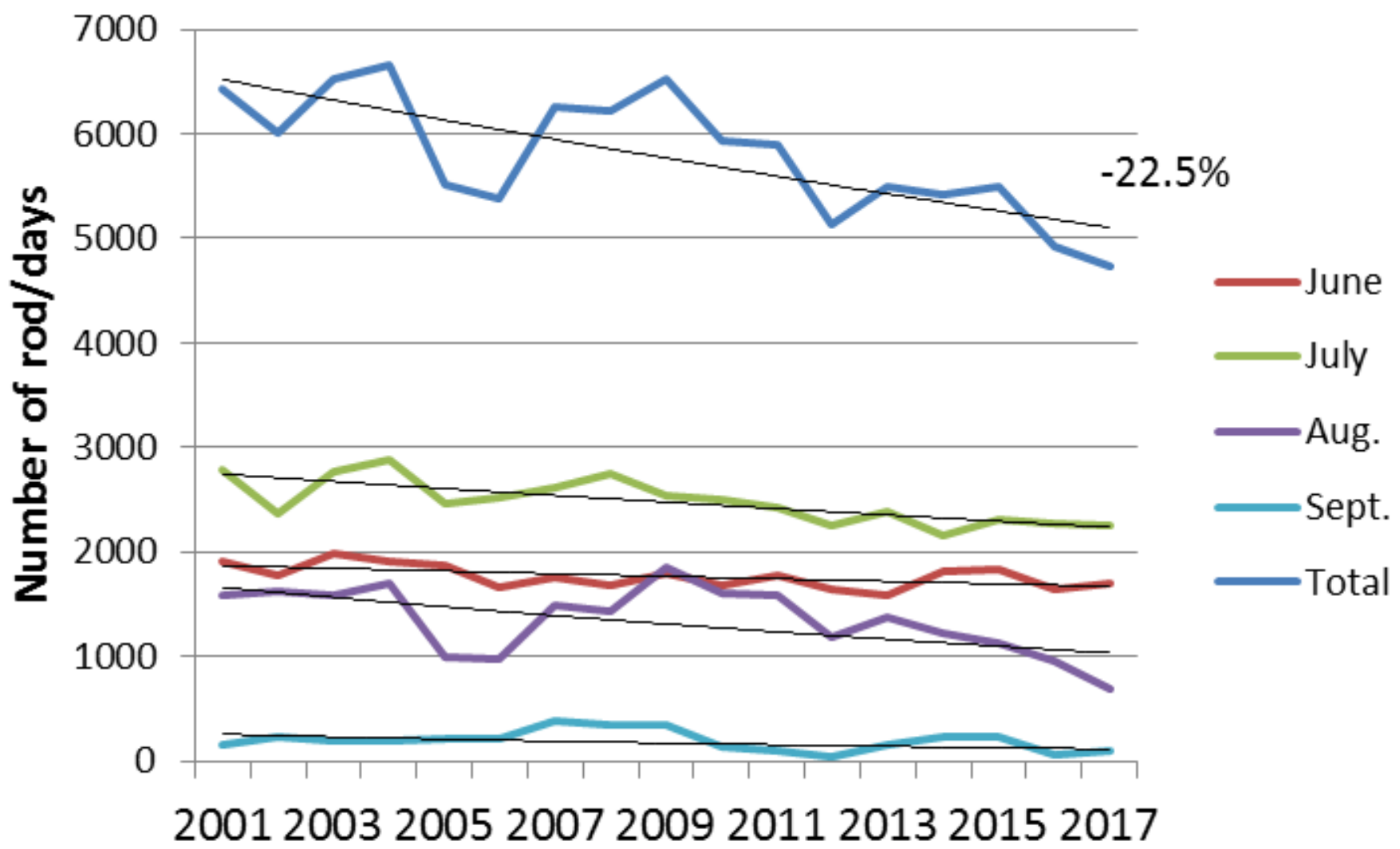
Year	River	Grilse Retained	Grilse Released	Salmon Retained	Salmon Released	Effort Rod-days
2017	Upsalquitch Totals:	0	202	0	90	1019
	Kedgwick Totals:	0	93	0	79	549
	Little Main Totals:	0	34	0	3	80
	Main Restigouche Totals:	0	838	0	1057	3398
	Restigouche N.B. Totals	0	1167	0	1229	5046

Private fishing camps – camps de pêche

Restigouche N.B. - Lodge Angling
"Catch & Effort"



Private fishing camps – camps de pêche



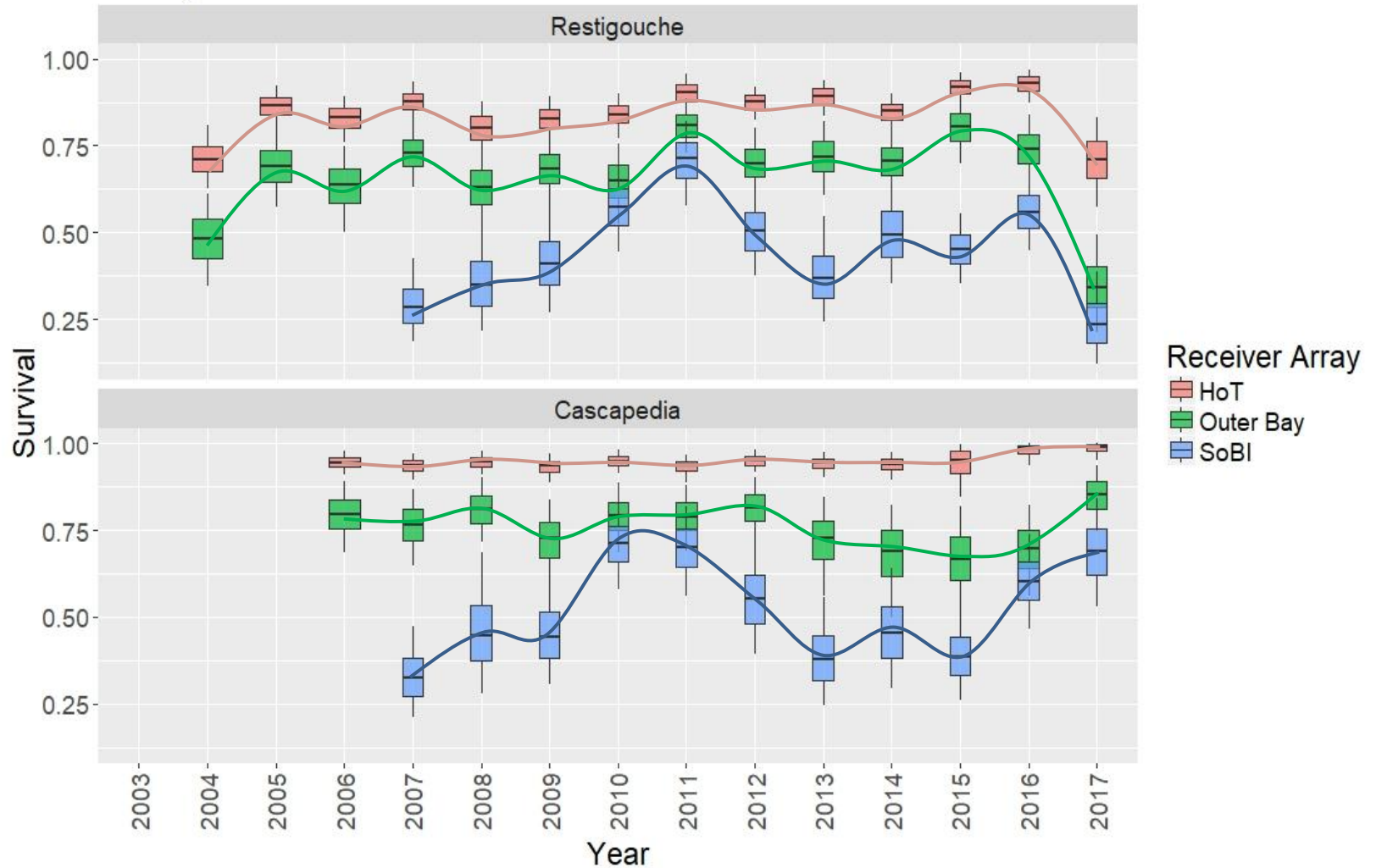
Atlantic Salmon Federation Tracking program



Estimated Smolt Survival



Yearly survival from release



Atlantic Salmon Federation Tracking program

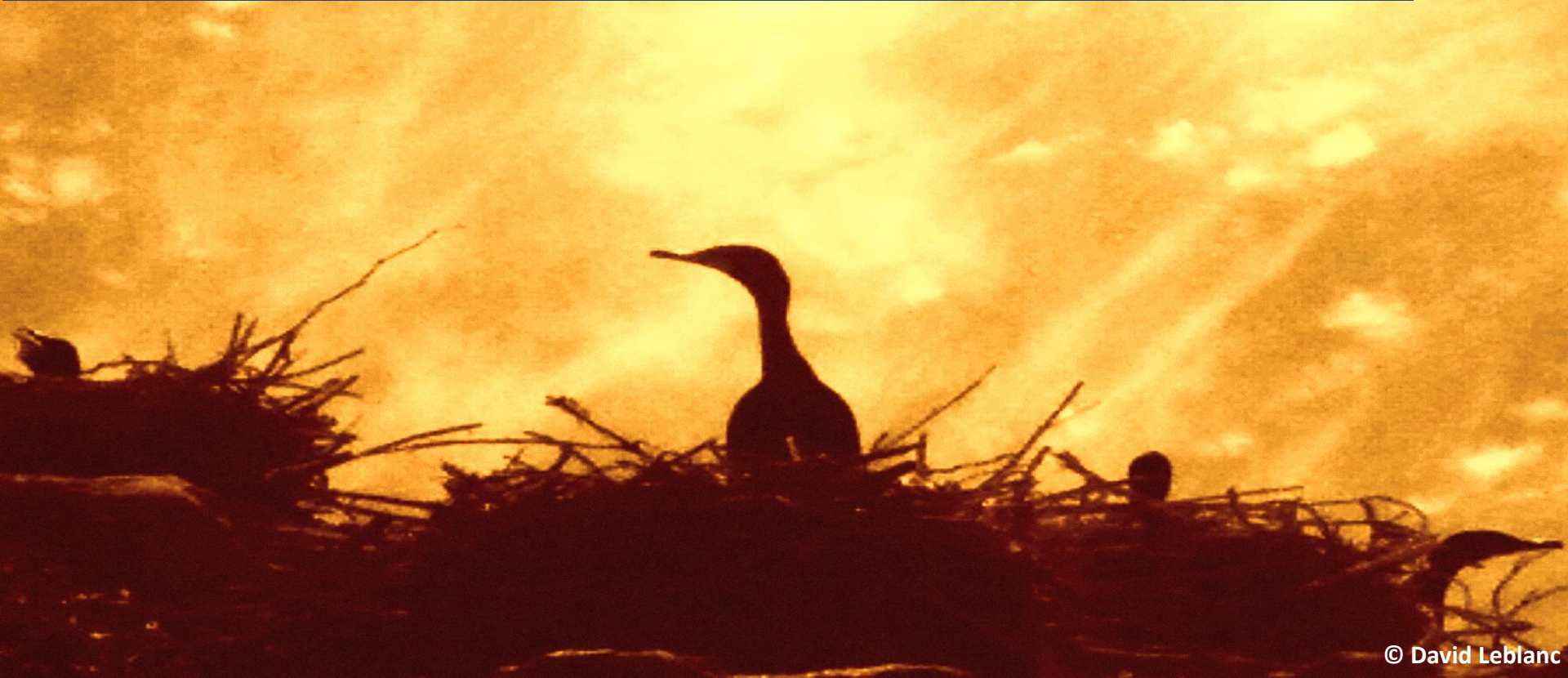


Kelt Survival

River	Year	# Tagged	Consecutive	Double Consecutive	Alternate	Return Rate	Mean Return Rate
Miramichi	2008	50	1	2	5	16%	16%
	2009	50	5	1	0	12%	
	2010	50	7	1	4	24%	
	2011	50	6	3	1	20%	
	2012	35	2	0	0	6%	
	2013	16	0	0	1	6%	
	2014	21	2	0	0	10%	
	2015	24	4	0	0	17%	
	2016	25	4	1	4	36%	
	2017	8	0		3 Via SoBI	0%	
Restigouche	2013	25	0	0	6	24%	21%
	2014	17	0	1	3	24%	
	2015	25	1	0	3	16%	
	2016	25	4	0	1	20%	
	2017	17	0		12 Via SoBI	0%	



Cormorant study results



© David Leblanc

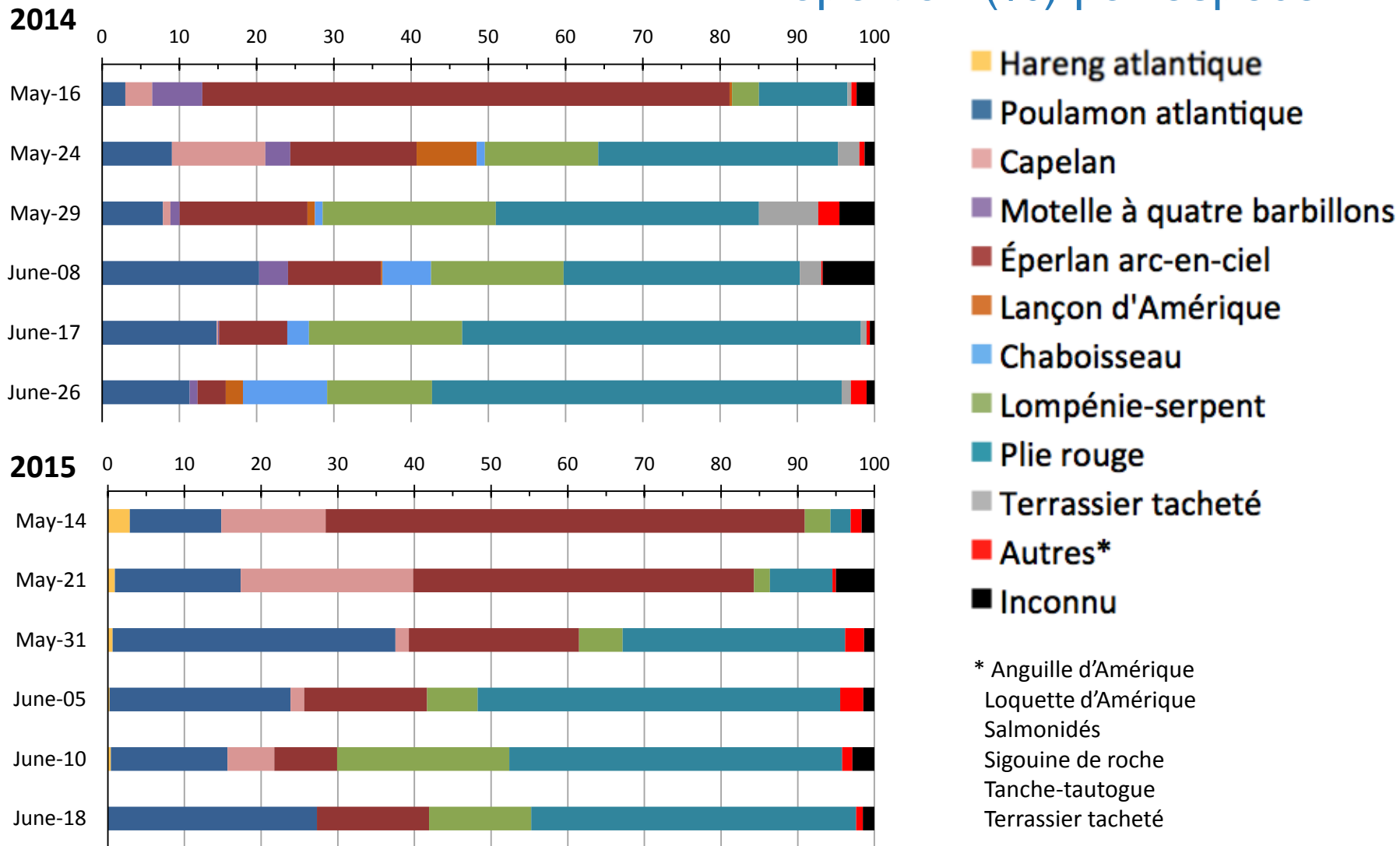


Pêches et Océans
Canada

Fisheries and Oceans
Canada

Cormorant study results

Proportion (%) par espèce



Basé sur un sous-échantillon de 30 pelotes/jour d'échantillonnage

Occurrence (%) par pelote des espèces de poissons consommés

Espèces/Genre/Famille de poisson		2014	2015	Total
<i>Pseudopleuronectes americanus</i>	Plie rouge	63.3	60.0	61.7
<i>Microgadus tomcod</i>	Poulamon atlantique	46.1	67.2	56.7
<i>Osmerus mordax</i>	Éperlan arc-en-ciel	42.2	66.7	54.4
<i>Lumpenus lampretaeformis</i>	Lompénie-serpent	29.4	26.7	28.1
<i>Mallotus villosus</i>	Capelan	11.1	28.9	20.0
<i>Cryptacanthodes maculatus</i>	Terrassier tacheté	23.3	2.2	12.8
<i>Myoxocephalus sp.</i>	Chaboisseau	15.0	6.1	10.6
<i>Enchelyopus cimbrius</i>	Motelle à quatre barbillons	13.3	3.3	8.3
<i>Clupea harengus</i>	Hareng atlantique	0.0	10.0	5.0
<i>Ammodytes americanus</i>	Lançon d'Amérique	3.9	3.3	3.6
<i>Pholis gunnellus</i>	Sigouine de roche	1.1	4.4	2.8
<i>Tautoglabrus adspersus</i>	Tanche-tautogue	2.2	2.2	2.2
<i>Macrozoarces americanus</i>	Loquette d'Amérique	0.6	2.2	1.4
<i>Anguilla rostrata</i>	Anguille d'Amérique	1.7	0.0	0.8
Salmonidae	Salmonidés	1.1	0.6	0.8

Basé sur un sous-échantillon de 30 pelotes/jour d'échantillonnage (180 pelotes/année)

Connectivity model study 2017-2018

Watershed-scale connectivity analysis: An applied GIS model towards the strategic management of barriers to Atlantic salmon migration in the Restigouche River watershed (2017-2019)



Michael J. Arsenault, Allen Curry, Carole-anne Gillis, David LeBlanc, Tommi Linnansaari, and Jae Ogilvie



Connectivity model study 2017-2018



Undersized crossing



Perched crossing



Barriers to migration

Beaver dam blockage

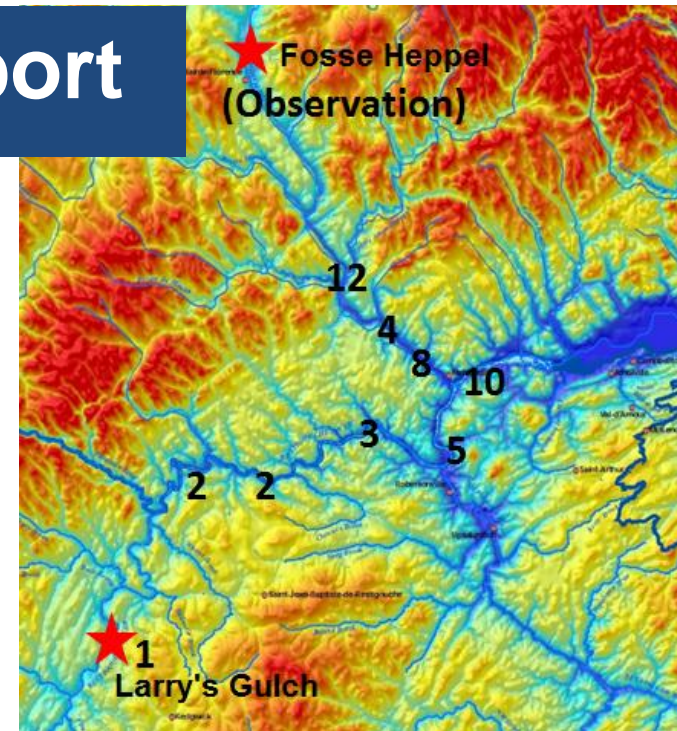
Connectivity model study 2017-2018

Outcome

- An adaptive, cost-effective approach for maintaining road networks
- A detailed inventory of culverts and beaver dams within the watershed
- A model that can predict stream networks based on DEM (LIDAR) data that can be used on other watersheds
- A set of models that can identify culverts that have a high chance of preventing upstream migration



Striped Bass observation / report



Sector	# Striped bass reported
Matapédia River – public (Glen Emma 12, + 8 on sector 1)	20
Matapedia River– Private (Tobique 2, cold spring 2)	4
Restigouche below Upsalquitch	15
Restigouche above Upsalquitch (Pine Island 2, Cheuters 2, Larrys 1, Brandy 3, Harmony 5)	8
	47

+ A shoal of 20 striped bass observed in Haley's pool and 6 at Heppel during mid- season July count

Striped Bass observation / report

Scientific permits issued in 2017

Dept. Fisheries and Oceans - Article section 52 to RRWMC

- Issued on August 11th 2017
- Required to put guides name on the permit
- No catch reported on the permit – most camp were closed mid August

Min. Forêt Faune et Parcs «permis SEG» to CGRMP

- Sub-permit given to anglers when buying daily access permit if desired to keep specimens and provide stomach content;
- No specimen provided

Canada

PERMIS DE PÊCHE POUR FINS SCIENTIFIQUES
Numéro du permis : SG-RHQ-17-107

En vertu de la Partie VII, article 52, du Règlement de pêche (dispositions générales), le présent permis est délivré à :

David LeBlanc
Conseil de gestion du bassin versant de la rivière Restigouche (CGBVRS),
CP 995
Campbellton (Nouveau-Brunswick) G0J 1V
506-759-7300

LES CONDITIONS DE PERMIS SUIVANTES S'APPLIQUENT AU PRÉSENT PERMIS :

Les activités autorisées par ce permis peuvent être menées par les personnes suivantes travaillant sous l'autorité du titulaire du permis :

Nom	Organisation	Téléphone
Carole-Anne Gillis	CGBVRS	418-865-2924
Rick Irvine	Restigouche Salmon Club	418-865-2924
Don Irvine	Restigouche Salmon Club	418-865-2924
Brian Irvine	Restigouche Salmon Club	418-865-2924
David Mann	Restigouche Salmon Club	418-865-2924
Jean-Marc Savoie	Restigouche Salmon Club	418-865-2924
Kévin Gray	Restigouche Salmon Club	418-865-2924
Yves Dufour	Restigouche Salmon Club	418-865-2924
Pierre Dufour	Restigouche Salmon Club	418-865-2924
Michel Doiron	Restigouche Salmon Club	418-865-2924
Karl Craewell	Restigouche Salmon Club	418-865-2924
Guy Arsenault	Restigouche Salmon Club	418-865-2924
Charlie Adams	Restigouche Salmon Club	418-865-2924
Paul Francoeur	Restigouche River Lodge	506-759-8112
Ricky Gray	Restigouche River Lodge	506-759-8112
Lodger Francoeur	Restigouche River Lodge	506-759-8112
Alexander Sandy Maserelle	Restigouche River Lodge	506-759-8112
Raymond Poirier	Restigouche River Lodge	506-759-8112
Rodney Gray	Camp Harmony	506-753-5882
Daniel Boudreau	Camp Harmony	506-753-5882
Jonathan Fale	Toad Brook	506-753-1990
Denis Apin	Lamy's Gulch	418-865-2942
Michel Chasse	Lamy's Gulch	418-865-2942
Camille Dallant	Lamy's Gulch	418-865-2942
Jean-Paul Larouche	Lamy's Gulch	418-865-2942
Jean-Guy Leclerc	Lamy's Gulch	418-865-2942
Julie MacDonald	Lamy's Gulch	418-865-2942

Canada

2018

- Regulation changes requested to remove size limit in fresh water (still pending) (actually 50-65 cm slot)
- If size limit still as actual, Permit section 52 will be requested;
- Renewal of SEG permit on the Matapedia?

Saprolegnia outbreak



- Worst outbreak since 2011
- September snorkeling count: Less than 10 % of fish observed had signs of saprolegnia
- RRWMC visual count Oct 17th -27th: 70 mortalities, 80% of fish infected on most tributaries

Real-time monitoring stations

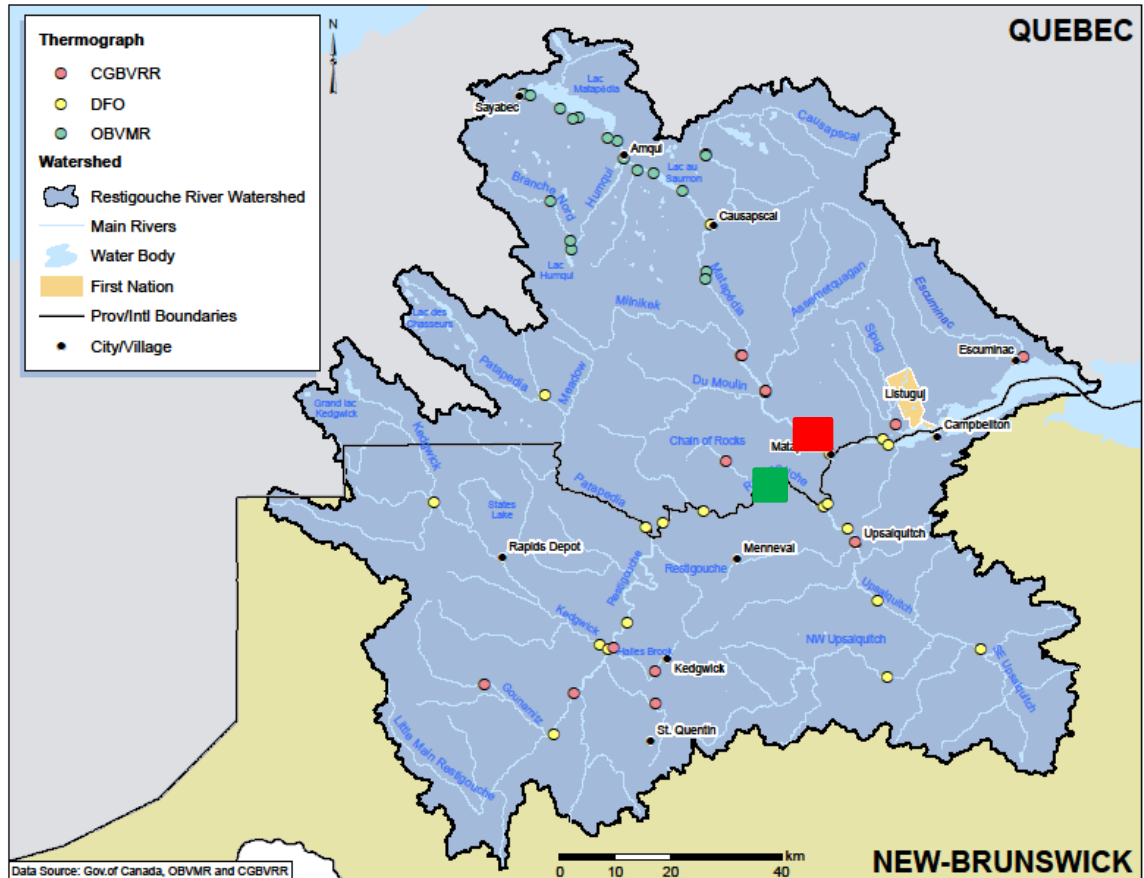
Real time monitoring

- Water temperature
- Water level (2018)
- Other variables?

Matapédia



Restigouche



2018 Research plan



Thanks! Merci!

- All the camps who reported their statistics
- Funding agencies
- Partner organizations
- Universities
- Volunteers
- Donors





QUESTIONS

??