

New Brunswick Salmon Council
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Conseil du Saumon Nouveau Brunswick
C.P 533, Fredericton, NB, E3B 5A6

December 6, 2017

Ryan Francis, BA, MA
Manager, Special Projects
Fisheries and Aquaculture Management
Fisheries and Oceans – Gulf Region
343 University Ave, Moncton, NB

Dear Mr. Francis:

RE: Response to NB Recreational Salmon Management Transformation Project Questionnaire

Please consider this a formal response by the NB Salmon Council to the five questions posed at the User Engagement session for the NB Recreational Salmon Management Transformation Project. Thank-you for the opportunity to provide input to this valuable and important exercise.

Sincerely,

John Bagnall
Communications Chair, NB Salmon Council

New Brunswick Recreational Salmon Management Transformation Project (NBRSM T)
User Engagement Questionnaire
 Metepenagiag, New Brunswick
 November 24, 2017

Response from the NB Salmon Council, December 6, 2017

1) What do you feel works (or could work)? What are the strengths of some of the regimes you have seen? Are there elements you feel could work that haven't yet been presented?

a. Now Works:

- i. Crown Reserve Program; Crown Lease Program; NB Electronic Licensing; private water system (but should be modified), No MSW harvest in NB rivers (should be permanent), protection barriers.

b. Could Work:

- i. NL model of River Classification adopted for NB rivers (explained below in "Not Adequately Considered" section). This proposal is uncomplicated, and therefore could be implemented in 2018, meets our policies of harvest-by-abundance and river-specific management, and is our preferred option.
- ii. A model such as colour-coded tags for individual rivers, or perhaps, given projected fish abundance levels, a certain number of tags available via a lottery per managed river system. We suspect that such system would require extensive planning, discussion and consultation, and will probably not be ready for implementation in 2018. In years post-2018, it could be refined and replace (if necessary) our preferred option.
- iii. Mandatory reporting of harvests in real time – i.e. within days of harvest.
- iv. A FN's Guardian program to help with enforcement,
- v. A Fisheries Liaison Committee,
- vi. A Commercial striped bass fishery by First Nations (FNs) that would have the additional benefit of controlling the ongoing excessive smolt mortality,
- vii. No slot limit for striped bass harvests above the head-of-tide.

c. Not Adequately Considered:

1. River classification - The NL river classification system could be modified to fit the NB tagging system. NB and the Miramichi in particular is ideally located for the proposed program that is described subsequently below. The Miramichi has an approximate 1:1 mixture of grilse and multi-sea-winter (MSW) returns, and MSWs are essentially female (80%) and grilse are male (80%). (Conversely, NL has very high grilse returns and a high female grilse component. QC rivers have fewer grilse than NB rivers do.) A grilse harvest in NB would have very little effect on egg deposition. **This is essentially what is stated by DFO in Canadian Science Advisory Secretariat Science Response 2010/005.** The sensitivity analysis (Table 1 on the next page and Figure 1 on the following page) using DFO data (Canadian Science Advisory Secretariat Research Document 2016/029) demonstrates the insensitivity of spawning success to a grilse harvest, and its extreme sensitivity to an MSW harvest.

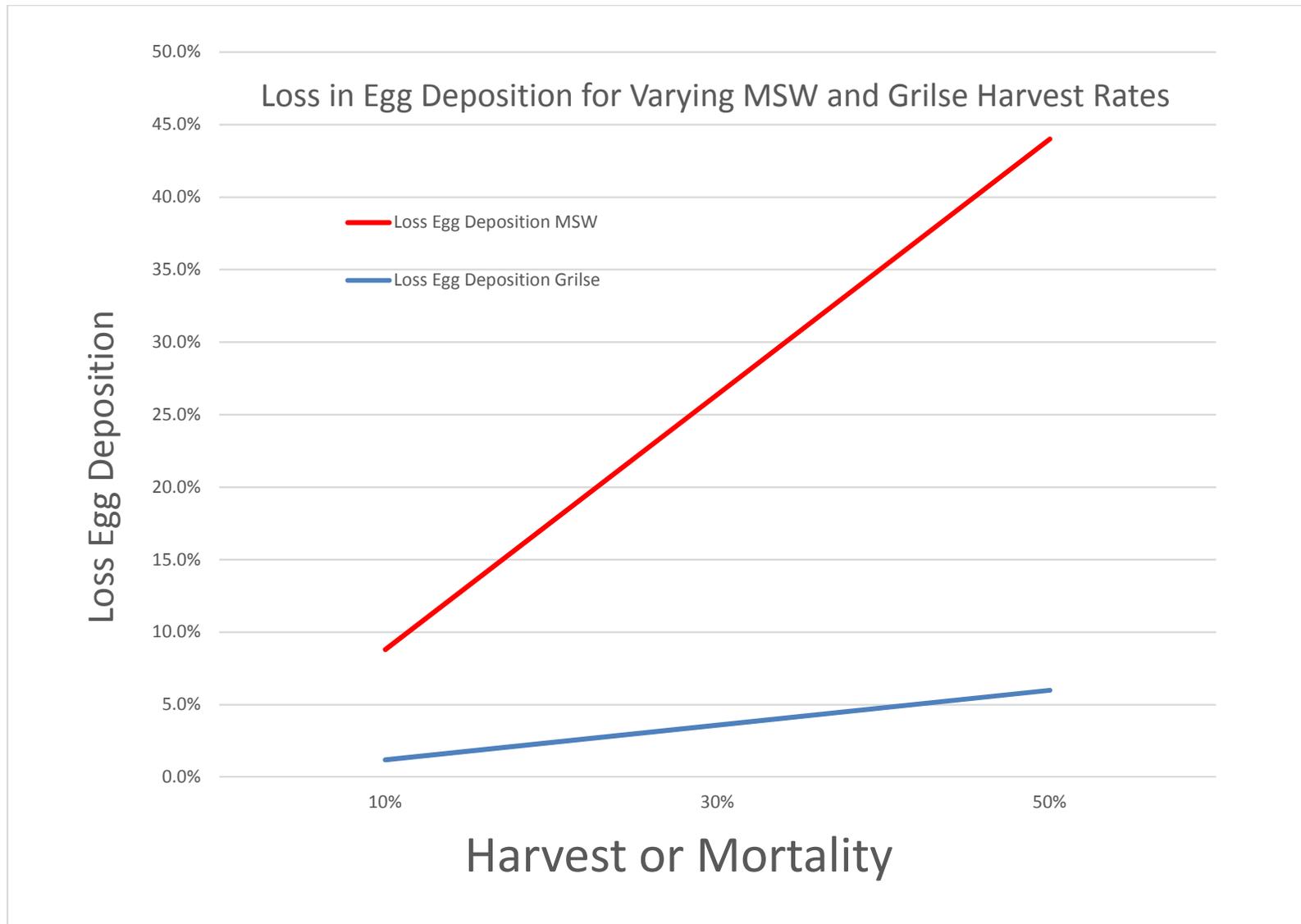


Figure 1. Relative Sensitivity of Miramichi River Atlantic Salmon Egg Deposition to Harvest or Mortality of MSWs vs. Grilse

A retention recreational fishery for grilse would restore a sense of resource stewardship among resident anglers, and their presence on the water would deter poaching and provide free “eyes and ears” for enforcement staff and regulators. Because of the limited effects on egg deposition, and for reasons of stewardship and enforcement, we feel that a grilse harvest is warranted. Although such a system *could* be aligned with the Precautionary Approach (PA) methodology, the proposed managed grilse harvest would not require the PA limits or restrictions that should apply to a harvest fishery targeting MSWs. A recreational fishery targeting grilse could be accommodated with the existing tag system. Following is a description:

The Miramichi has essentially five salmon rivers, The Northwest (NW) Miramichi, the Little Southwest (LSW) Miramichi, the Southwest (SW) Miramichi, the Renous/Dungarvon, and the Cains. What we propose is that *one or more than one tag would be applied to grilse retained* from the five rivers, with the number of tags applied depending on the angling pressure that is potentially exerted on each river, and on the sensitivity of the potential egg deposition on each river to a harvest of a portion of the grilse run.

Zero to a maximum of four tags would be issued per licence. On the Southwest Miramichi, a harvested grilse would require that only one tag be applied. The runs are strong on that river and there is a relatively large area of water to be fished.

On the Renous (including the Dungarvon) and Cains, two tags would be applied per grilse. Although these stocks are relatively strong in comparison with closed rivers or the NW/LSW Miramichi, there is a lot of public access to a small fishable area on the Cains, Dungarvon and Renous compared with the SW. As explained during the consultation meeting, recreational fisheries management is for the most part people management. Requiring two tags per fish would encourage effort to disperse to the larger Southwest Miramichi where only one tag per harvested grilse would be required.

Grilse on the NW and LSW would require all four tags be applied. The drainages are small and have extensive public access. The river has a higher proportion of female grilse than on the SW and its tributaries, and there is an existing Food, Social and Ceremonial (FSC) fishery on the NW that impacts egg deposition. As a further measure, the NW/LSW could be a zero retention (C&R) river until August 1, with retention allowed only downstream of the leases and/or Crown Reserves. The early run component that travels to the high elevation headwaters has a very high proportion of female grilse in comparison with the late run or the grilse runs on other greater Miramichi system tributaries.

The proposed tagging requirements may change on further debate and input. Conceptually, the proposed system is illustrated by Figure 2 (next page). Tags per grilse could be modified by in-season reviews, but generally, the insensitivity of egg deposition to a grilse harvest would allow such adaptive management to be postponed until after the angling season closes.

Revenue could be generated by applying a surcharge for each tag. At \$25 per tag, enhanced enforcement could be funded. To discourage harvest, especially and end-of-season rush, unused tags could be partially refunded (say for \$10) at the end of the season, or they could be used as entries for a prize draw to encourage catch and release (C&R). User ideas for revenue generation and use from the tag system could be solicited.

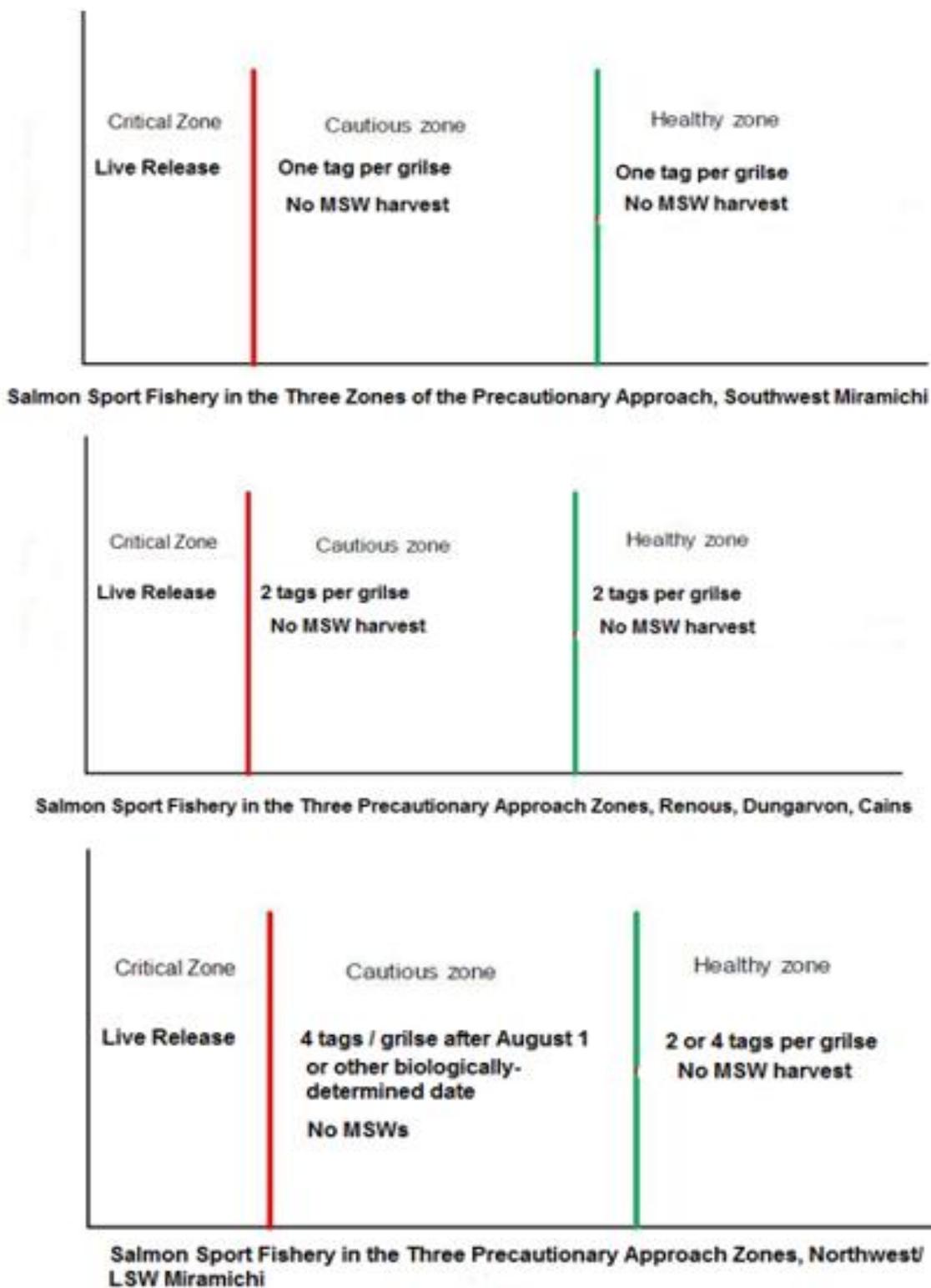


Figure 2. Conceptual Tag Use in Each Zone of the Precautionary Approach on the Various Miramichi Basins

Addressing Arguments Against Such a System: We have heard the following *arguments* against such a system.

- a. ***Grilse are important to the population. What happens on the spawning ground is complex - it's important to have males competing to fertilize eggs, and the demographic of MSW and grilse has evolved over thousands of years for a reason. Therefore, they must be important, and should be protected with conservatively restrictive harvest regulations. It would be better to harvest the same proportion of grilse and MSWs as is currently observed in populations.***

Responses to a:

- i. The Precautionary Approach concentrates on preserving egg deposition. This is the intent of the Limit Reference Point and Upper Stock Limit. Concentrating harvest on grilse slows downward pressure of Stocks towards these limits. While preserving demographics may be a secondary goal, and it may be important to have males competing, there will be plenty of males that survive to spawn.
- ii. In addition, the present salmon demographics that we see may be a result of the commercial fishery of the not-so-distant past. An average of 34,000 MSW salmon were harvested primarily by commercial fishermen in the Miramichi estuary between 1965 and 1980, with an astonishing 102,000 being taken in 1967. During the same period, an average of only 22,000 grilse were harvested, mainly by anglers ¹. It is a biological principle that excessive harvest and “high grading”, causes reproduction at an earlier age, and therefore breeder size to decrease. A harvest of grilse instead of one targeting MSWs would tend to select for larger fish (i.e. MSWs) and return demographics to their natural condition. 1. Reference: Chaput, G., D. Moore, M. Biron and R. Claytor. Stock status of Atlantic salmon (*Salmo salar*) in the Miramichi River, 1993. DFO Atl. Fish. Res. Doc. 94/20. 80 p.)
- iii. Also, if, as the PA prescribes, the entire salmon fishery adheres to the PA, it would be in FN's interest to decrease MSW harvest. Any MSW harvest rapidly decreases a population towards the Limit Reference Point. Therefore, assuming FN's Food, Social and Ceremonial (FSC) fisheries adhere to the PA, FNs would concentrate on grilse to maximize food availability.
- iv. Many harvests on various species of animals (e.g. deer) target males with benefits to the population as a whole.

- b. ***Grilse, being mostly male, fertilize the eggs. A harvest may produce a lack of fertilization capacity.***

Responses to b:

- i. Anglers will not catch all or even most of the grilse. Studies suggest the maximum catch (as opposed to harvest) rate of salmon in intense recreational fisheries seldom exceeds 50%, and is usually far lower than this. A large proportion of these grilse would be released in any event. Even in addition to an FSC fishery, a recreational grilse harvest will be limited by fly fishing inefficiencies.
- ii. All anglers will not “fill their tags”. A tag issued is not necessarily a tag used. For example, in 1998, when salmon stocks were stronger than they are today and therefore angling success rates would be higher, data indicate that 21,166 salmon angling licences were issued by the province and 15,291 grilse were harvested (Data source: Hooper and Dryden, 1998). Assuming that eight

tags were issued per angler, 9% were used. It would be far lower today if an equivalent number of tags were issued.

- iii. Recreational fishery participation is self regulating. If there are fewer fish to catch, fewer anglers will participate leaving the remainder to accomplish fertilization.
- iv. Precocious parr and hookbills (MSW male salmon) will still be present for fertilization.

c. Despite spreading out the effort, your proposed multiple tag system is still an arbitrary number of tags issued to every angler and it has no defence in science, therefore, it doesn't adhere to council's policy of harvest by abundance.

Responses to c.

- i. Even the annually-predicted stock strength is an arbitrary number that relies on a science-based guess. Why pretend that we know the exact number of grilse that we should be allowed to harvest when we don't and can't know in advance the numbers that will be available. The rigid PA approach for a grilse harvest is like using a laser scope on a shotgun. Precision doesn't matter, and since the recreational fishery targets primarily-male grilse, accuracy may not be essential either. An assumption of a sufficient number of grilse to harvest is not fatal. It's the MSWs that we must protect. MSW management is where accuracy, perhaps to the point of precision is necessary. It's not really possible of course, but, unlike in the case of grilse, worth the effort.
- ii. The tag number is conservatively low. Give people tags, try to get the effort and harvest spread to where fish numbers will support a moderate harvest on rivers where available fishing area is compatible with producing an enjoyable fishing experience given that effort. Monitor and adjust the results annually, or semi-annually if necessary – adaptive management. The system adheres to harvest-by-abundance since targeting only grilse virtually always allows for an acceptable level of harvest. Even in the Critical Zone a small grilse harvest would probably be biologically insignificant, but probably politically unacceptable.

d. DFO has been clear that the scale at which they intend to manage, at least at first, is broken down into the Renous, SW, LSW, and NW – rivers that empty into tidal water. This doesn't delineate the Cains, although that might come later.

Responses to d.

- i. The multi-tag concept is included in the section describing what "is not adequately considered". A river classification strategy has not been adequately considered, or even considered at all. We could bow to DFO's lead, but I think that in this question they are looking for independent thought. It may require some bending of the rules, but for simplicity and applicability purposes, the rules could be made more flexible.

Not Adequately Considered (continued)

2. Standardized signs and digital maps to identify private water This system was suggested by the NB Salmon Council to the Province of NB ten years ago, but rejected by the province out-of-hand:

NB should require standard signs and professionally-surveyed plans for any private water that a person wants to restrict public-fishing access to. The plans would be digital, geo-spatially precise for use with GPS systems, and maintained in a central database and available to the public so that they can know what waters to avoid or be subject to a trespassing offence. If a stretch of water is not in the database, then it
Dec. 16, 2017. Response from NB Salmon Council to NBRSM Questionnaire

would be considered publicly accessible for angling. This would avoid the confusion about the location of private fishing water, and the unethical posting of public-open water as being private. It would be analogous to the red/green/yellow hunting system.

2) What do you feel doesn't, or is unlikely to work?

Doesn't currently work:

1. Universal catch and release (C&R), one rule fits all rivers creating a lack of stewardship and maybe encouraging poaching,
2. salmon river total closures,
3. enforcement,
4. separating FN's FSC fisheries management from recreational fishery management,
5. exclusive FSC harvest from NW/LSW (could be spread out to harvest more fish from SW Miramichi, and/or FSC fishery rely on grilse rather than MSWs),
6. consultation between angler groups and DFO – DFO ignores input or uses it as support for predetermined positions rather than as constructive input that is considered,
7. electrofishing stock assessments – should be better stratified to better predict smolt runs,
8. late access by the public to stock status of current years returns,
9. late (delayed) decisions on next year's angling regulations,
10. the current private water system and perceived lack of access to fishing water,
11. lack of integration of striped bass management with salmon management – obvious source of smolt and juvenile freshwater salmon mortality that is being downplayed or ignored,
12. Assumption of a tag issued = a tag used (far from true). To repeat from Question 1, in 1998, when salmon stocks were stronger than they are today and therefore angling success rates would be higher, data indicate that 21,166 salmon angling licences were issued by the province and 15,291 grilse were harvested (Data source: Hooper and Dryden, 1998). Assuming that eight tags were issued per angler, 9% were used.
13. C&R angling assumed to be an allocation (It should not be. The 3 – 5% incidental mortality rate assumption is based on flawed science that is still being perpetuated. C&R incidental mortality is virtually zero and should be assumed to be zero.),
14. Scape-goating the angler for salmon decline (universal mandatory C&R for grilse, closed waters, no double hooks, – these have little or virtually zero effect on egg deposition),
15. Lack of recognition by the Province of NB (and by DFO) that, since the province owns the fish thereby licensing the fishery, that they (the province) has a responsibility to assist DFO with, and to have a say on salmon fishery management,
16. **lack of revenue or funding to adequately manage the salmon recreational fishery**, which is a cultural icon of NB – **should be a top priority**.

Unlikely to Work

1. Verbatim transfer of the Quebec ZEC approach for accessing fishing water is unlikely to work as, in much of the province of NB (such as the Miramichi), it may be perceived as taking fishing opportunities away from resident anglers. This would be very unpopular.
2. In-season adjustments will not work unless DFO increases and expands stock assessments by rivers.

3) What elements or opportunities exist within the project/area/people that could be built upon and utilized?

The Miramichi area has a mix of most of the various elements for a successful recreational fishery including First Nations interests with Traditional Ecological Knowledge (TEK) and young people that could be employed in fisheries management, a salmon fishing tradition, active and knowledgeable conservation groups, a still sustainable fish resource, well-functioning headwater protection barriers, the Miramichi hatchery, a mix of private and public land and water managed through a blend of leases, public-open, Crown Reserve, and private classifications, a largely undeveloped watershed, good water quality, access to the internet over some of the drainage, cell phone coverage over some of the drainage, a new and effective electronic licensing system, professional and knowledgeable outfitters, capable guides, specialized and knowledgeable fly fishing angling gear suppliers, long-time non-FN residents with TEK of their own, retired individuals who have managed recreational fisheries in the past, wealthy individuals with an interest in the salmon recreational fishery. A few ideas:

1. Establish an Inland Recreational Fisheries Liaison Committee
 - a. Federal and Provincial governments need the users involved in making decisions on management of the public resource
 - b. Includes all recreational fisheries
 - c. In addition to DNR and DFO the Committee should be made up of representatives of Province-wide fishery conservation organizations that meet certain criteria.
 - d. These criteria may include the requirement of a minimum membership and number of meetings each year.
 2. First Nations Guardian Program, angler groups reporting methods (App on phone to help with enforcement and environmental problem reporting);
 3. Using the Fort Folly Fish Habitat Recovery group as an example, expand it to the Miramichi, as well as the Tobique, St. John, Nepisiguit etc.
 4. An intensive FN's commercial harvest of striped bass.
 5. Allow and encourage the CAST smolt-to-adult supplementation method to increase egg deposition.
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4) What risks are there that need to be addressed or mitigated in order for the project to succeed?

1. As a point of departure, everyone (Governments including First Nations and the NGOs at the table) should share their official positions on whether in general terms that they support a sustainable recreational harvest of grilse if science shows that Conservation requirements are likely to be met and FN rights have been met.
2. The need for river-by-river management has been requested for years – time to move quickly. The status quo is not acceptable for 2018. The preferred option system proposed and described in the answer to Question 1 would work. Move quickly and build on it, adjust it, modify it, fine tune it (adaptively manage) as time goes forward.
3. Other rivers in the Province should be addressed in the program as well as the test-case Miramichi. 2018 plans for these other drainages should have an element of river-by-river management as well. Our preferred option could be rapidly applied to these rivers as well.

4. There is a risk that moving too quickly on a more complicated river-by-river management system such as our proposed second option (alluded to in our answer in Question 1.b.ii) will not be ready for roll-out in 2018. Alternatively, if it is rushed into implementation, operational problems may incur.
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5) How might we increase participation of stakeholders, users and First Nations in:

- **Advisory processes**
- **Science and Monitoring; and**
- **Compliance activities.**

Advisory Process

1. DFO to show some respect for NGOs (See Question 2, bullet 6). Do not downplay roles or responsibilities.
2. Keep people and representative groups involved by not closing rivers, or in the case of closed rivers, opening them again.
3. From this point forward, involve other groups from other NB drainages (e.g. Restigouche River Watershed Management Council) in the consultation process. The desired end result is to produce a system that is transferable to these non-Miramichi watersheds.
4. Fisheries Liaison Committee

Science and monitoring – See Question 3, answer 3.

1. Many retired or active professional or avid amateur scientists and outdoors people are members of the various organizations consulted under this “Transformation” process. Listen to their advice. These people have vast knowledge gained from years on the river and in their communities, experience that DFO personnel may not have. Use them and use their opinions during consultation with First Nations, and listen to them and their comments on interpretation of science.
2. Bring FN individuals into the scientific and socio-economic monitoring programs. They are interested. Give them the tools to become professionally or vocationally involved.

Compliance

1. Use FN groups for enforcement and compliance. They have an interest in the state of the salmon resource and should be involved with its protection.
 2. Establish a phone app system for anglers to report infractions.
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