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Proceedings of the Central and Arctic Regional Science Advisory Process on the Recovery Potential Assessment of Pugnose Shiner

6 October 2009

Burlington Art Centre
1333 Lakeshore Road
Burlington, ON

Nicholas E. Mandrak
Meeting Co-chairperson

Marten A. Koops
Meeting Co-chairperson

Lynn Bouvier
Editor

Compte rendu du processus de consultation scientifique régionale de la région du Centre et de l'Arctique sur l'évaluation du potentiel de rétablissement du méné camus

le 6 octobre 2009

Burlington Art Centre
1333 Lakeshore Road
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April 2010 | **Avril 2010**

Foreword

The purpose of these Proceedings is to document the activities and key discussions of the meeting. The Proceedings include research recommendations, uncertainties, and the rationale for decisions made by the meeting. Proceedings also document when data, analyses or interpretations were reviewed and rejected on scientific grounds, including the reason(s) for rejection. As such, interpretations and opinions presented in this report individually may be factually incorrect or misleading, but are included to record as faithfully as possible what was considered at the meeting. No statements are to be taken as reflecting the conclusions of the meeting unless they are clearly identified as such. Moreover, further review may result in a change of conclusions where additional information was identified as relevant to the topics being considered, but not available in the timeframe of the meeting. In the rare case when there are formal dissenting views, these are also archived as Annexes to the Proceedings.

Avant-propos

Le présent compte rendu a pour but de documenter les principales activités et discussions qui ont eu lieu au cours de la réunion. Il contient des recommandations sur les recherches à effectuer, traite des incertitudes et expose les motifs ayant mené à la prise de décisions pendant la réunion. En outre, il fait état de données, d'analyses ou d'interprétations passées en revue et rejetées pour des raisons scientifiques, en donnant la raison du rejet. Bien que les interprétations et les opinions contenus dans le présent rapport puissent être inexacts ou propres à induire en erreur, ils sont quand même reproduits aussi fidèlement que possible afin de refléter les échanges tenus au cours de la réunion. Ainsi, aucune partie de ce rapport ne doit être considéré en tant que reflet des conclusions de la réunion, à moins d'indication précise en ce sens. De plus, un examen ultérieur de la question pourrait entraîner des changements aux conclusions, notamment si l'information supplémentaire pertinente, non disponible au moment de la réunion, est fournie par la suite. Finalement, dans les rares cas où des opinions divergentes sont exprimées officiellement, celles-ci sont également consignées dans les annexes du compte rendu.

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SUMMARY

A regional science peer-review meeting was held on 6 October 2009 in Burlington, Ontario. The purpose of the meetings was to assess the recovery potential of Pugnose Shiner (*Notropis anogenus*) based on the 17 steps outlined in the Fisheries and Oceans Canada (DFO) Recovery Potential Assessment (RPA) framework. Pugnose Shiner was added to Schedule I of the *Species at Risk Act* (SARA) when it was proclaimed in June 2003. The resulting RPA Science Advisory Report will provide the information and scientific advice required for the Department to meet various requirements of SARA for this species including permitting and development of recovery strategies. Meeting participants included DFO (several sectors), Ontario Ministry of Natural Resources, New York State Department of Environmental Conservation and specialists from Essex Region Conservation Authority, Long Point Conservation Authority, Ausable Bayfield Conservation Authority, St. Lawrence National Park, McGill University and the University of Toronto. This proceedings report summarizes the relevant discussions from the peer-review meeting and presents revisions to be made to the associated research documents.

This report will be published in the Canadian Science Advisory Secretariat (CSAS) Proceedings Series on the CSAS website. The working papers presented at the workshop will be published in the form of CSAS Research Documents. The advice from the meeting will be published as a CSAS Science Advisory Report.

SOMMAIRE

Une réunion régionale d'examen scientifique par des pairs a eu lieu le 6 octobre 2009 à Burlington, en Ontario. La réunion avait pour but d'évaluer le potentiel de rétablissement du méné camus (*Notropis anogenus*) selon les 17 étapes contenues dans le cadre de l'évaluation du potentiel de rétablissement (EPR) de Pêches et Océans Canada (MPO). Le méné camus a été inscrit à l'annexe I de la *Loi sur les espèces en péril* (LEP) lorsque celle-ci est entrée en vigueur en juin 2003. L'avis scientifique contenu dans l'EPR fournira l'information et l'avis scientifique dont le Ministère a besoin pour respecter les diverses exigences de la LEP pour cette espèce, y compris la délivrance de permis et l'élaboration de programmes de rétablissement. Parmi les participants à la réunion, mentionnons des représentants du MPO (plusieurs secteurs), du ministère des Richesses naturelles de l'Ontario, du New York State Department of Environmental Conservation ainsi que des experts de l'Office de protection de la nature de la région d'Essex, de l'Office de protection de la nature de Long Point, de l'Ausable Bayfield Conservation Authority, du Parc national des Îles-du-Saint-Laurent, de l'Université McGill et de l'Université de Toronto. Le présent compte rendu résume les discussions tenues pendant la réunion d'examen par des pairs et présente les révisions à apporter aux documents de recherche connexes.

Le présent document sera publié dans la série des comptes rendus du Secrétariat canadien de consultation scientifique (SCCS), sur le site Web du SCCS. Les documents de travail présentés à l'atelier seront publiés sous la forme de documents de recherche du SCCS. L'avis formulé au cours de la réunion sera publié sous la forme d'un avis scientifique du SCCS.

INTRODUCTION

In November 2002, the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) designated the Pugnose Shiner as Endangered. Its designation was based on the species' limited, fragmented Canadian distribution, where it is subject to declining habitat quality. COSEWIC also considered that its isolated habitat might prevent connectivity of fragmented populations, prevent gene flow between existing populations and inhibit re-colonization of other suitable habitats. In June 2003, Pugnose Shiner was added to Schedule I of the *Species at Risk Act* (SARA). A Recovery Potential Assessment (RPA) process has been developed by Fisheries and Oceans Canada (DFO) to provide information and scientific advice needed to fulfill SARA requirements, including the development of recovery strategies and authorizations to carry out activities that would otherwise violate SARA (DFO 2007).

The purpose of the meeting, as described in the Terms of Reference (Appendix 1), was to assess the recovery potential of Pugnose Shiner. The RPA is a science-based peer review process that assesses the current status of the species by addressing the 17 steps in the RPA framework outlined in the Revised Protocol for Conducting Recovery Potential Assessments (DFO 2007). The current state of knowledge of Pugnose Shiner habitat requirements, the scope for human-induced mortality, and scenarios for mitigation and alternatives to activities that negatively impact the species and its habitat, is included in the Science Advisory Report. A peer-review meeting was held at the Burlington Art Centre, Burlington, Ontario on 6 October 2009 to discuss the Pugnose Shiner RPA.

Meeting participants included DFO Science, and Oceans, Habitat and Species at Risk sectors of the Central and Arctic Region, Ontario Ministry of Natural Resources, New York State Department of Environmental Conservation and representatives from Essex Region Conservation Authority, Long Point Conservation Authority, Ausable Bayfield Conservation Authority, St. Lawrence National Park, and the University of Toronto (Appendix 2). The meeting followed the agenda outlined in Appendix 3.

This proceedings report summarizes the relevant discussions from the peer-review meeting and presents revisions to be made to the associated research documents. The Research Documents (Bouvier et al. 2010; Venturelli et al. 2010) provide information on the working papers presented at the workshop, and the Science Advisory Report summarizes the current understanding of the distribution and habitat requirements of this species, along with recovery targets and times to recovery while considering various management scenarios (DFO 2010).

DETAILED DISCUSSION

The meeting co-chair provided the participants with an introduction to the RPA process and explained the purpose of the meeting. This included information on where the RPA process fits with respect to the COSEWIC assessment and SARA listing process for Pugnose Shiner. This included the intent of the meeting and how the products of the meeting might be used. A draft RPA had been developed by DFO and provided to participants in advance of the meeting. The draft report was the basis for discussion and participants were encouraged to add to or change the material, as needed, to ensure that the best, most accurate information was included.

SPECIES STATUS AND HABITAT REQUIREMENTS

Presenter: Lynn Bouvier

The presentation on species status and habitat requirements of Pugnose Shiner included a description of the species, as well as information on its Canadian distribution and habitat requirements for three life stages (i.e., spawning, juvenile and adult). Distribution maps represented years in which Pugnose Shiner was captured at the various locations. It was clarified that additional sampling was conducted between the years indicated and these additional data are included in the text of the research document. It is unknown whether the newly detected Pugnose Shiner locations were newly occupied, or had simply not been detected previously. West Lake, a newly detected Pugnose Shiner location, had been previously sampled but sampling had never targeted Pugnose Shiner.

With respect to the species distribution, a participant asked about the specific sites at which targeted sampling had been conducted. Targeted seining, the best method to sample Pugnose Shiner, was conducted a few of the historic sites. A participant indicated that there are 12 locations in the Thousand Islands where the species was also detected, and that this information would be provided to the authors of the research document. The species was not detected using electrofishing and nearshore seining at additional sites in the St. Lawrence River, nor was it found at sites in southwestern Ontario that were sampled using appropriate methods; therefore, the current distribution in these areas is better understood. Pugnose Shiner was detected at three locations within Pinery Provincial Park during sampling in the Old Ausable Channel.

There was some discussion about Pugnose Shiner depth requirements. Depth preference for Pugnose Shiner is unknown but has been typically collected at depths of up to 2-3 m using seining and electrofishing. Sampling protocols may have missed individuals at greater depth, although the species is generally thought to prefer shallow areas according to the literature.

It was considered important to develop a standardized sampling protocol for recovery planning and habitat management. A participant indicated that electrofishing might be appropriate for targeted sampling in areas where seining is prohibitive (e.g. in deeper water), given the behaviour of the species. Another participant noted that electrofishing is not very efficient for this species, as it often has very low CPUE. Participants noted that most electrofishing had been conducted for transects for other work and it may yield more individuals if Pugnose Shiner habitats were targeted. It was noted that Pugnose Shiner is often found in association with submerged vegetation but appears to require open areas to persist. However, the required amount of open water versus vegetation is unknown. One of the participants agreed to provide data from Turkey Point sites, including macrophyte density information.

RECOVERY TARGETS

Presenter: Marten Koops

The presentation on recovery targets included information on abundance, habitat and distribution targets for Pugnose Shiner recovery. It was noted that SARA requires population targets (versus abundance), although these can include abundance.

A participant indicated that the statement related to status quo might not be accurate for southern Ontario because most of the assessments are based on changes in the area of occupancy, while evidence of declines within individual populations is lacking. It was noted that there is evidence of a change in distribution because individual populations are being lost due to loss of habitat. Participants indicated that there was a deficiency in the amount of targeted sampling conducted, which yields more accurate abundance estimates.

There was some discussion about the effect of catastrophes. It was clarified that catastrophic events were defined as a loss of 50% of the population, and catastrophes were estimated to occur every 4-6 years for Pugnose Shiner. A participant asked how large- and small-bodied fishes were defined. Large- and small-bodied fishes were distinguished on the basis of longevity and age of maturity. Small-bodied fishes have larger minimum viable population sizes because they are more susceptible to point source events and environmental variability.

There was some discussion about whether the minimum viable population estimates were adequate. Modeling results indicated that a population with 115 000 adults would be needed to be reasonably sure that a population would persist. Several participants indicated that this estimate may not be realistic and noted the need for better estimates of actual population size, which they believed could reach much larger numbers. It was noted that the persistence of small-bodied fishes is more dependent on meta-population dynamics and they are more susceptible to stochastic events.

Evidence regarding the frequency of catastrophic events (to estimate the probability of catastrophe, P_k) is not available for Pugnose Shiner. Catastrophes for Pugnose Shiner could include natural events (e.g., severe winter, disease) as well as human-induced catastrophes (e.g., eutrophication, loss of habitat). A participant inquired whether dredging would qualify as a catastrophe. The presenter indicated that if dredging took place for only one year it would make Pugnose Shiner populations more susceptible, but they can reproduce the next year. It was noted that removal of vegetation would have an effect on adults and spawning. A participant indicated that the loss of an age class would make them more susceptible to other factors.

A participant asked whether the minimum viable population estimates were linked to area of occupancy. Logically, a smaller area of occupancy would make a population more susceptible to catastrophes, but no data on this were known to be available. It was noted that the model assumes that catastrophes are independent and does not incorporate rescue effects from nearby populations. In addition, environmental change had not been built into the model. A participant asked whether some of the parameters could be expanded.

With respect to estimating population size, a participant noted that mark-recapture had, to date, been unsuccessful and would require considerably more effort (10-15 seine hauls per day, dozens per week). Depletion sampling had also been conducted. It was noted that other species were used for mark-recapture and this was also unsuccessful.

A participant suggested that the model should include land use, which is expected to affect catastrophic events. The presenter agreed that this was a reasonable expectation, although it had not been included. It was noted that this would require additional data collection and may be more appropriate for analyses across aquatic species.

There was some discussion about the minimum area for population viability (MAPV) estimates. When applying the river MAPV estimates, participants questioned whether the habitats that Pugnose Shiner occupy in river systems have riverine characteristics or whether their

characteristics were more similar to those of coastal wetlands. Participants indicated that the habitats in the Canard and St. Lawrence rivers where Pugnose Shiner has been captured show characteristics more similar to coastal wetlands. It was clarified that the lake and river MAPV estimates differ because there is a different relationship with productivity. It was noted that the Pugnose Shiner exhibits little movement, given the size of the fish and its sensitivity to flow. A participant indicated that some literature (Hinge, Sommers) used the same dataset but found no difference between lakes and rivers after correcting for autocorrelation. The participants decided that the lake values should be used in MAPV analyses for riverine populations, since the difference between lake and riverine habitats may not be valid for this species. Using the lake estimates would be more conservative.

A participant asked whether it was possible to include confidence intervals for the population and area estimates. It was noted that this was possible but these values would be difficult to interpret and apply in the field.

There was some discussion about the data included in the reference material and the extent to which wetlands were included. It was noted that there were many sources for the meta-analysis, including some from degraded systems. Participants agreed that it was important to obtain estimates of the parameters and their variability from the field. Field sampling over five years was considered to be adequate given the generation time of the species. A participant noted that it would be interesting to estimate the area of occupancy by population.

The total number of populations, as well as the connectivity between populations was discussed. It was clarified that the populations were not interconnected but rather independent and discrete. It was further clarified that all records within Long Point Inner Bay (i.e., Long Point NWA, and Turkey Point) were considered to be one large population, which therefore has a higher probability of persistence. Participants discussed the uncertainty regarding what constitutes a distinct population. A participant pointed out that it is unlikely that the species is highly mobile but the area of occupancy of the population is large. It was noted that populations might be demographically independent if gene flow is insufficient to influence the demographics. A participant indicated that whether populations are likely to be stricken by the same catastrophic event is more important than genetic similarity. It was suggested that the method used to identify distinct populations should be clarified.

A participant expressed concern regarding how thresholds had been selected to set recovery targets, which they believed to be oversimplified. It was suggested that area of occupancy be used to set targets, given that population size had already been extrapolated.

With respect to the model assumptions, a participant suggested that catastrophes and environmental information should be modeled in a way that incorporates spatial and temporal linkages (versus treating them as spatially and temporally independent), given the close proximity of the populations in southern Ontario. This could increase the probability of extinction. It was noted that it might also increase the influence of rescue effects.

The distinction between threats, which are generally considered to be chronic, and catastrophes, which are generally acute, was clarified. It was pointed out that there could also be differences in what defines a catastrophe depending on the size of the fish.

A participant suggested that the objective for recovery should be to increase the size of habitat areas, thereby decreasing the probability of catastrophes because populations with small areas

of occupancy are more vulnerable. It was pointed out that the existence of a population should be validated before habitat restoration takes place.

POPULATION STATUS

Presenter: Nick Mandrak

The population status presentation included information on the abundance and trajectory of individual Pugnose Shiner populations. The participants were asked to comment on the assessment of the Pugnose Shiner populations. Participants agreed that the Long Point Bay population trajectory is unknown and noted that sampling is difficult. It was suggested that the certainty of the unknown status be changed to 1, since there are very little data available.

An extensive discussion took place on the methods used to determine Population Status. Participants agreed that the data upon which to base population status assessments were severely limited, as were experts for this species. Several participants requested additional information on sampling gear, methods and effort. Participants discussed whether additional information was needed to designate population status, and for these rankings to be defendable, given the high level of uncertainty for this species. Participants agreed that the raw data, although discussed in the text of the research document, should be made available in a format that is easier to interpret.

A participant asked whether it would be possible to identify temporal trends using CPUE data. This approach was considered to be unreliable, given the limited number of sampling, as well as the non-standardized sampling effort. CPUE is not available for historic records.

A participant suggested that the thresholds used to define conservation status should be made clearer. A participant suggested that ‘unknown’ should be a conservation status, as a more scientific alternative to ‘best guess’ when data is lacking. Another participant noted that a conservation status of critical does not distinguish between instances where numbers are low versus those where populations are decreasing. It was suggested that estimated population abundance (e.g. high, medium, low) be used instead of conservation status to rank populations. Participants agreed but pointed out that there is insufficient data to estimate relative population abundances. A participant indicated that differences in carrying capacities between sites might pose a problem when comparing abundances among populations. It was suggested that an abundance index including an “unknown” classification be used.

There was some discussion about the population status assessment framework, including how the various criteria were defined and/or calculated, as well as the appropriate status assessment based on different combinations of these. Several suggestions were made, including:

- Changing the terminology from critical, cautious and healthy to poor, good, etc. It was pointed out that DFO has used the terms critical, cautious, and healthy in another context, and that the terms may cause confusion (e.g. critical means the reproductive potential is seriously affected).
- Merging the ‘unknown’ trajectory with any of the relative abundance index categories would yield an ‘unknown’ population status. However, participants suggested that if the trajectory is ‘unknown’, the worst case should be assumed and that ‘unknown’ should be used sparing unless there are no data. Therefore, low abundance x unknown trajectory should be ‘low’.

- In the Population Status matrix, the last three “Extirpated” cells should be changed to “Not applicable”.
- Being explicit about how abundance (low, medium, high) is classified and not assume equal catchability by different sampling gear when comparing abundances among populations.
- Use a frequency-based tabulation of the assessment (versus consensus), based on how individual participants assessed each population, for species as data deficient as Pugnose Shiner. A participant pointed out that this approach would not account for differences in the expertise of different participants.

The participants discussed whether and how threats should be considered when ranking populations and assigning population status. It was indicated that those making management decisions should make the combinations. A participant asked whether there is a science-based way to integrate threats into demographics. It was noted that allowable harm indicates how a population reacts to impact. It was suggested to keep abundance and trajectories separate from threats, and to look at threats in the event of an ‘unknown’ population status.

The participants decided that the data provided in the document should be reconfigured into tabular form. After that, the table will be distributed to the participants, who will identify the conservation status and rank the populations. The final decision will then be achieved via conference call. Dissenting opinions would be included in the document and in the text accompanying the tables. DFO will repopulate the tables before the modifications are discussed. It was noted that this approach requires the assumption that catchability is constant across populations, which may be assessed on a case-by-case basis. It was decided that each participant’s inclusion in this process should be based on self-identification of whether they are qualified to interpret the data.

THREAT STATUS

Presenter: Nick Mandrak

The presentation included information on the threat magnitude, relative impact, spatial extent, and temporal extent. Threats to Pugnose Shiner and their habitat were also presented on a population-by-population basis and participants were asked to help fill in missing knowledge gaps based on their expertise.

A participant noted that changes in trophic dynamics and exotic species have caused the disappearance of Pugnose Shiner in Pelee and Rondeau but this threat is ranked as ‘medium’ impact. Another participant indicated that this relationship is not causative and it was decided that the document should be adjusted to reflect the fact that there is not a causative relationship.

There were no comments regarding physical habitat loss. In regard to sediment loading, it was suggested that a range be included because some events are minor. It was noted that the list is meant to provide an overview for the Canadian population and is not an exhaustive list. A participant indicated that the meaning of widespread (i.e. affects more than one population) needed to be clarified.

One of the participants questioned why there were many empty cells in the threat-by-population table. It was explained that the table was filled based on information that was available in the literature. It was reiterated that expert knowledge from participants was to be used to fill in the

missing cells. A participant noted that a similar data table exists in the Ausable River Recovery Strategy and this table should be used to fill in empty cells.

When discussing physical habitat loss, participants indicated that a better definition is needed. More examples should be provided in the text, as the examples provided are very limited and do not properly reflect the scope of activities that could lead to physical habitat loss. Examples to insert in the document include infilling and wetland drainage. It was suggested that the examples of physical habitat loss be made more explicit in the document, for example by referring to 'shoreline hardening' instead of 'physical habitat loss'. Another participant suggested that it be left as a catchall; otherwise, some examples will be missing. It was decided the authors would revise the Threat Status table and it would be sent to participants for their input.

ALLOWABLE HARM

Presenter: Paul Venturelli

The presentation on allowable harm included information on Pugnose Shiner life history and population recovery projections under different recovery strategies.

A participant mentioned that two of the vital rates included in the model are size-dependent processes and, given that some size-related data are available questioned how these size-dependent processes affect the model. A participant indicated that there is no relationship between size and age class because the fish do not grow very much between years, and that uncertainty about mortality rates is more important than fecundity.

A participant asked how frequently two clutch sizes was used to reach equilibrium. It was also noted that Winemiller suggested the species should have two clutches, although perhaps this may only be the case in more southern populations. It was suggested that one clutch be used to maintain a conservative approach. A participant asked whether Leslie and Timmins (2002) has frequency data. Another participant agreed to take another look at the paper.

The participants discussed how to apply the model to provide guidance for allowable harm and permitting. The model indicates how sensitive the population is and whether it is below or above its minimum viable population size. Participants discussed the value of making the model available in an operational format (e.g. to translate habitat loss and degradation into population parameter rates). It was noted that the model could be applied to the baitfish industry and for listing decisions for other species.

A participant asked whether there is evidence that all life stages of the species use the different habitats. This was unknown; however, it was noted that the species does not exhibit spawning runs and individuals probably sub-divide the habitat. It was noted that there are many information gaps for this species and that population size may be underestimated.

ALTERNATIVES AND MITIGATION METHODS

Presenter: Lynn Bouvier

The presentation included information on alternatives and feasible mitigation methods for the threats to Pugnose Shiner populations and habitat.

A participant asked whether feasible mitigation methods could have residual effects on survival and recovery of the species. Another participant indicated that this would be related to allowable harm, since the allowable harm advice would inform the choice of methodology.

With regard to the introduction of exotic species, a participant suggested that the native species should also be identified since their introduction may affect trophic structure. It was indicated that the DFO Introduction and Transfer Code should be applied to detect authorized introductions. Participants discussed whether to include the characteristics of species that should not be introduced, or perhaps provide of list of species. The threat of the introduction of exotic species should also include other groups other than fishes. It was decided that it was not feasible to list all species.

When discussing the mitigations surrounding incidental harm through the baitfish industry, a participant suggested that the recommendation to remove all blackline shiners from catches should be included. It was decided to include this group because of known difficulties in identifying blackline shiners.

SOURCES OF UNCERTAINTY

Presenter: Lynn Bouvier

Sources of uncertainty related to Pugnose Shiner were discussed by participants and it was noted that uncertainty is particularly high for this species. This high level of uncertainty should be expanded and discussed in greater detail in the research document. Participants pointed out that the sources of uncertainty include the use of different methodology, connectivity among populations, population structure and genetics, and difficulty in field identification. Participants also discussed uncertainty regarding the general availability of Pugnose Shiner habitat and its distribution, and the range of intervening areas where targeted sampling had not been conducted. A participant pointed out that Pugnose Shiner has been identified as a species sensitive to climate change but no information on the threshold it can tolerate is available, which represents a significant knowledge gap for mitigation efforts.

SUMMARY OF DISCUSSION

In summary, it was decided that:

- slow moving streams would be removed from the description of habitats where the species is typically found. Participants noted that while the species has been found recently in a riverine environment, these areas are typically very wetland-like;
- both 5% and 10% chance of catastrophic events should be included when estimating the minimum number of individuals for population recovery targets;

- the research document should state that the time required for Pugnose Shiner populations to reach the abundance recovery target in the absence of recovery efforts (estimated to be 17 to 39 year) depends on the initial population size;
- the research document would be revised to indicate the assumption that there is a positive growth rate; and,
- a statement should be included on how long it would take a declining population to become extirpated in the absence of recovery efforts.

It was also noted that both the Population Status and Threat Status framework should be re-visited. New tables, applying the new framework, should be completed by the authors and subsequently sent to participants for their input. The author's responsibility will be to take this information and incorporate it into a final draft of the research document. If it is necessary, a conference call will be set-up to resolve any existing conflicts regarding the information to be included in both the Population Status and Threat Status tables.

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Appendix 1. Terms of Reference

Recovery Potential Assessment of Pugnose Shiner

Regional Advisory Meeting – Central and Arctic Region

Burlington Art Centre, Burlington, ON

6 October 2009

Co-chairs: Nick Mandrak and Marten Koops

Background

In November 2002, the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) designated the Pugnose Shiner as Endangered. Their designation was based on the species' limited, fragmented Canadian distribution, where it is subject to declining habitat quality. COSEWIC also considered that its isolated habitat may prevent connectivity of fragmented populations, prevent gene flow between existing populations and inhibit re-colonization of other suitable habitats. In June 2003, Pugnose Shiner was added to Schedule I of the *Species at Risk Act* (SARA).

Fisheries and Oceans Canada (DFO) Science has been asked to undertake a Recovery Potential Assessment (RPA) for the Pugnose Shiner. DFO Science developed the RPA framework to provide the information and scientific advice required for the Department to meet various requirements of the SARA including listing decisions, authorizations to carry out activities that would otherwise violate the SARA and development of recovery strategies. The advice in the RPA may be used to inform both scientific and socio-economic elements of the listing decision, as well as development of a recovery strategy and action plan, and to support decision-making with regards to the issuance of permits, agreements and related conditions, as per section 73, 74, 75, 77 and 78 of SARA.

This advisory meeting is being held to assess the recovery potential of Pugnose Shiner. The resulting RPA Science Advisory Report will summarize the current understanding of the distribution, abundance and trend of this species in Ontario, along with recovery targets and times to recovery while considering various management scenarios. The current state of knowledge about habitat requirements, threats to both habitat and Pugnose Shiner, and measures to mitigate these impacts, will also be included in the SAR.

Objectives

The intent of this meeting is to assess the recovery potential of the Pugnose Shiner. It is a science-based peer review of the designatable unit assigned by COSEWIC and the 17 steps in the RPA framework outlined in the Summary section of the Revised Protocol for Conducting Recovery Potential Assessments (available at: http://www.dfo-mpo.gc.ca/csas/Csas/status/2007/SAR-AS2007_039_e.pdf). The advice will be provided to the DFO Minister for his consideration in meeting various requirements of SARA for this species.

Products

The meeting will generate a proceedings report summarizing the deliberations of the participants. This will be published in the Canadian Science Advisory Secretariat (CSAS) Proceedings Series. There will be CSAS Research Document(s) produced in relation to the working paper(s) presented at the workshop. The advice from the meeting will be published in the form of a Science Advisory Report.

Participants

DFO, Conservation Authorities, Parks Canada, Royal Ontario Museum, University of Toronto, and Ontario Ministry of Natural Resources experts are invited to this meeting. . Participants will not exceed a maximum of 30 people.

Timetable for FY 2009/10

The draft RPA will be distributed to participants in advance of the meeting. Draft proceedings will be circulated to participants for comments in November 2009 and a final proceedings document is expected to be submitted to CSAS for publication in January 2010. The science advisory document will be finalized and submitted to CSAS for publication in December 2009.

Appendix 2. Meeting Participants

Name	Affiliation
Lynn Bouvier	Fisheries and Oceans Canada - Science
Amy Boyko	Fisheries and Oceans Canada – Species at Risk
Doug Carlson	New York State Department of Environmental Conservation
Matthew Child	Essex Region Conservation Authority
Ghislain Chouinard	Fisheries and Oceans Canada - Science
Andrea Doherty	Fisheries and Oceans Canada - Habitat
Paul Gagnon	Long Point Conservation Authority
Kari Jean	Ausable Bayfield Conservation Authority
Marten Koops (Co-chairperson)	Fisheries and Oceans Canada - Science
Nick Mandrak (Co-chairperson)	Fisheries and Oceans Canada - Science
Megan McCusker	University of Toronto
Debbie Ming	Fisheries and Oceans Canada - Habitat
Simon Nadeau	Fisheries and Oceans Canada - Science
Scott Reid	Ontario Ministry of Natural Resources
Shawn Staton	Fisheries and Oceans Canada - Species at Risk
Josh VanWieren	St. Lawrence National Park
Paul Venturelli	University of Toronto
Jennifer Young	Fisheries and Oceans Canada - Science

Appendix 3. Agenda

Recovery Assessment Potential – Pugnose Shiner
Regional Peer Review Meeting – Central and Arctic Region

Burlington Art Centre
1333 Lakeshore Road
Burlington, ON

6 October 2009
9:00 am to 5:00 pm (EST)

Co-chairs: Nick Mandrak and Marten Koops

Time		Presenter
9:00	Welcome and Introductions	Nick Mandrak
9:15	Purpose of Meeting	Nick Mandrak
9:30	Species Status and Habitat Requirements	Lynn Bouvier
9:45	Recovery Targets	Marten Koops
10:30	Break (refreshments provided)	
10:45	Recovery Targets continued	Marten Koops
11:30	Population Status	Nick Mandrak
12:15	Lunch (provided)	
1:15	Threats	Nick Mandrak
2:15	Allowable Harm	Paul Venturelli
3:15	Break (refreshments provided)	
3:30	Alternatives to Activities/Feasible Mitigation Methods	Lynn Bouvier
4:30	Wrap-up	Marten Koops