**Supplementary Material 1 - Response Statements and Extended Consultation**

The SARA-listing process begins when a species is assessed by an arms-length scientific committee, which provides fully independent recommendations that initiate a mandated government-listing decision process. First, the status assessment is conducted by members of the Species Specialist and Aboriginal Traditional Knowledge subcommittees of COSEWIC (COSEWIC 2019; ECCC 2009; GOC 2012; GOC 2018). COSEWIC assessments are based on best available ecological data and do not include social, cultural, or economic considerations (COSEWIC 2019). Within 90 days of receiving a COSEWIC assessment of an aquatic species, the Minister of Environment Canada and Climate Change (MoE) must publish a response statement on how they wish to proceed. The MoE has 12 months to consult with the competent minister, the Minister of Fisheries and Oceans Canada (as required in the *Fisheries Act*), who provides one of the suggested listing recommendations: 1) list under Schedule 1 of SARA; 2) do not list under Schedule 1; or, 3) refer to COSEWIC for more information (COSEWIC 2019; Lukey and Crawford 2009).

Listing recommendations by the Minister of Fisheries and Oceans are informed by DFO internal operations, which gather relevant information in a Regulatory Impact Analysis Statement (RIAS), a requirement under the *Financial Administration Act* (R.S.C., 1985, c. F-11). The Minister of Fisheries and Oceans adopts a default listing position in accordance with the COSEWIC assessment unless RIAS identifies compelling rationale for why the overall benefits of not listing a species outweigh the recommended listing. RIAS balances input from multiple perspectives regarding science, economics, and the interests of the public (Mooers et al. 2007). In support of compliance with the Cabinet Directive on Regulatory Management, at a minimum, the RIAS must consider the COSEWIC assessment, the impacts of the management scenarios, a qualitative analysis of benefits and costs, and the results of the consultation process.

Consultation takes place with “landowners and other persons whom the competent minister considers to be directly affected by the strategy”, including provincial/territorial governments, Aboriginal groups, stakeholders, and Canadians (SARA, S.C. 2002, c.29). The stated purpose of these consultations is to allow the MoE a more complete understanding of the social and economic consequences of listing or not listing a species (GOC 2018). Comments received during consultations are published in the Canada Gazette, Part I, for an additional comment period of 30 days.

The standard consultation period lasts three months, and the total process to amend a species to list takes a total of 24 months. Yet, the MoE may choose to undertake extended consultation if they deem appropriate. For extended consultation, the period of consultation and analysis alone may take up to 24 months. In addition to the 90 days that the MoE has to post a response statement, and the 9 months that the GIC has to make its final decision, the timeline to list aquatic species with extended consultations is expected to be 36 months total (GOC 2017).

After consultation, the MoE forwards the COSEWIC assessment and their recommendation to the Governor in Council (GIC) of Canada to make the final listing decision. For species not currently on Schedule 1, if no decision is made by the GIC within nine months of receiving the recommendation, the species shall be automatically listed (SARA, S.C. 2002, c.29 s. 27.3). The final listing decision, along with a summary of the public consultation, is then published in the Canada Gazette, Part II, and on the Species at Risk Public Registry (GOC 2018) (e.g., Canada Gazette Vol. 151, No. 9 — May 3, 2017<http://gazette.gc.ca/rp-pr/p2/2017/2017-05-03/html/sor-dors59-eng.html>).

This supplementary material provides a summary of the response statements provided by the Minister of Environment and highlights the longer than usual periods of extended consultation that occur in the SARA-listing process for freshwater fishes. The two tables below outline the intended action described in each response statement for species that were listed (20) and not listed (14) under Schedule 1 of SARA. These response statements are made publicly available on the Species at Risk Public Registry (<https://species-registry.canada.ca/>). Further, we highlight the number of years between the response statement and a consultation period, the number of years between the request for consultation and the species being listed on Schedule 1 of SARA or, in the case of 14 species, the outstanding number of years since the response statement.

**Table S1a**. Response statements (and year), consultation period, the number of years between the response statement and consultation period, and the number of years since the response statement (as of 2020) for fourteen freshwater fish identified as ‘no status’.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Species/ Designatable Unit | COSEWIC classification | Response Statement (Year) | How the Minister of the Environment intends to respond to the assessment | Consultation period | Time between response and consultation (years) | Time since response statement (as of 2020) |
| Little Quarry Lake Stickleback (Benthic) | TH (2015) | 2017 | The Minister of the Environment will forward the COSEWIC assessment of the Little Quarry Lake Benthic Threespine Stickleback to the Governor in Council as soon as possible following completion of the **extended consultation period**, and analysis as appropriate. During the extended consultation period the Minister of Fisheries and Oceans **will undertake consultations** with the government of British Columbia, Indigenous Peoples, stakeholders, and the public on whether or not the Little Quarry Lake Benthic Threespine Stickleback should be added to the List of Wildlife Species at Risk (Schedule 1) under the Species at Risk Act as Threatened | 2018-02-13 to 2018-03-16 | 1 | 3 |
| Little Quarry Lake Stickleback (Limnetic) | TH (2015) | 2017 | The Minister of the Environment will forward the COSEWIC assessment of the Little Quarry Lake Limnetic Threespine Stickleback to the Governor in Council as soon as possible following completion of the **extended consultation period**, and analysis as appropriate. During the extended consultation period the Minister of Fisheries and Oceans **will undertake consultations** with the government of British Columbia, Indigenous Peoples, stakeholders, and the public on whether or not the Little Quarry Lake Limnetic Threespine Stickleback should be added to the List of Wildlife Species at Risk (Schedule 1) under the Species at Risk Act as Threatened. | 2018-02-13 to 2018-03-16 | 1 | 3 |
| American Eel | TH (2012) | 2013 | The Minister of Fisheries and Oceans **will undertake consultations** with the governments of Ontario, Quebec, Newfoundland and Labrador, New Brunswick, Nova Scotia and Prince Edward Island, the Torngat Joint Fisheries Board, Aboriginal peoples, stakeholders, and the public on whether or not the American Eel should be added to the List of Wildlife Species at Risk (Schedule 1) under the Species at Risk Act as Threatened.  | 2015-11-23 to 2016-03-18 | 2 | 7 |
| Striped Bass (Bay of Fundy) | EN (2012) | 2013 | The Minister of Fisheries and Oceans **will undertake consultations** with the governments of New Brunswick and Nova Scotia, Aboriginal peoples, stakeholders, and the public on whether or not the Striped Bass, Bay of Fundy population, should be added to the List of Wildlife Species at Risk (Schedule 1) under the Species at Risk Act as Endangered.  | No consultation period listed | 7 + | 7 |
| White Sturgeon (Upper Fraser) | EN (2012) | 2013 | The Minister of Fisheries and Oceans **will undertake consultations** with the government of British Columbia, Aboriginal peoples, stakeholders, and the public on whether or not the White Sturgeon, Upper Fraser River population, should be added to the List of Wildlife Species at Risk (Schedule 1) under the Species at Risk Act as Endangered.  | 2019-05-10 to 2019-07-09 | 6 | 7 |
| Atlantic Sturgeon (Maritimes) | TH (2011) | 2011 | The Minister of Fisheries and Oceans **will undertake consultations** with the governments of Newfoundland and Labrador, New Brunswick, Nova Scotia and Prince Edward Island, Aboriginal peoples, stakeholders, and the public on whether or not the Atlantic Sturgeon, Maritimes populations, should be added to the List of Wildlife Species at Risk (Schedule 1) under the Species at Risk Act as Threatened.  | 2014-11-17 to 2015-02-27 | 3 | 9 |
| Atlantic Sturgeon (St. Lawrence population) | TH (2011) | 2011 | The Minister of Fisheries and Oceans **will undertake consultations** with the governments of Quebec, Newfoundland and Labrador and New Brunswick, Aboriginal peoples, stakeholders, and the public on whether or not the Atlantic Sturgeon, St. Lawrence populations, should be added to the List of Wildlife Species at Risk (Schedule 1) under the Species at Risk Act as Threatened.  | 2014-11-17 to 2015-02-27 | 3 | 9 |
| Umatilla Dace | TH (2010) | 2010 | The Minister of Fisheries and Oceans **will undertake consultations** with the government of British Columbia, Aboriginal peoples, stakeholders, and the public on whether or not the Umatilla Dace should be added to the List of Wildlife Species at Risk (Schedule 1) under the Species at Risk Act as Threatened.  | No consultation period listed | 10 + | 10 |
| Lake Sturgeon (Great Lakes - Upper St. Lawrence River) | TH (2006) | 2007 | The Minister of Fisheries and Oceans **will undertake consultations** with the governments of Ontario and Quebec, Aboriginal peoples, stakeholders, and the public on whether or not the Lake Sturgeon Great Lakes - Upper St. Lawrence populations should be added to the List of Wildlife Species at Risk (Schedule 1) under the Species at Risk Act.  | 2011-11-15 to 2012-03-31 | 4 | 13 |
| Lake Sturgeon (Nelson River) | EN (2006) | 2007 | The Minister of Fisheries and Oceans **will undertake consultations** with the government of Manitoba, Aboriginal peoples, stakeholders, and the public on whether or not the Lake Sturgeon Nelson River populations should be added to the List of Wildlife Species at Risk (Schedule 1) under the Species at Risk Act.  | 2011-11-15 to 2012-03-31 | 4 | 13 |
| Lake Sturgeon (Red Assiniboine - Lake Winninpeg) | EN (2006) | 2007 | The Minister of Fisheries and Oceans **will undertake consultations** with the governments of Saskatchewan, Manitoba and Ontario, Aboriginal peoples, stakeholders, and the public on whether or not the Lake Sturgeon Red-Assiniboine Rivers - Lake Winnipeg populations should be added to the List of Wildlife Species at Risk (Schedule 1) under the Species at Risk Act.  | 2011-11-15 to 2012-03-31 | 4 | 13 |
| Lake Sturgeon (Saskatchewan River) | EN (2006) | 2007 | The Minister of Fisheries and Oceans **will undertake consultations** with the governments of Alberta, Saskatchewan and Manitoba, Aboriginal peoples, stakeholders, and the public on whether or not the Lake Sturgeon Saskatchewan River populations should be added to the List of Wildlife Species at Risk (Schedule 1) under the Species at Risk Act. | 2011-11-15 to 2012-03-31 | 4 | 13 |
| Lake Sturgeon (Western Hudson Bay) | EN (2006) | 2007 | The Minister of Fisheries and Oceans **will undertake consultations** with the governments of Saskatchewan and Manitoba, Aboriginal peoples, stakeholders, and the public on whether or not the Lake Sturgeon Western Hudson Bay populations should be added to the List of Wildlife Species at Risk (Schedule 1) under the Species at Risk Act.  | 2011-11-15 to 2012-03-31 | 4 | 13 |
| Lake Sturgeon ( Winnipeg River - English River) | EN (2006) | 2007 | The Minister of Fisheries and Oceans **will undertake consultations** with the governments of Manitoba and Ontario, Aboriginal peoples, stakeholders, and the public on whether or not the Lake Sturgeon Winnipeg River - English River populations should be added to the List of Wildlife Species at Risk (Schedule 1) under the Species at Risk Act.  | 2011-11-15 to 2012-03-31 | 4 | 13 |
| Mean = | 3.3 | 9.3 |

**Table S1b**. Response statements (and year), consultation period, the number of years between the response statement and consultation period, and the number of years since the response statement (as of 2020) for twenty freshwater fish listed on Schedule 1 of the Canadian *Species at Risk Act.*

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Species/Designatable Unit | COSEWIC classification | Response Statement (year) | How the Minister of the Environment intends to respond to the assessment | Consultation | Time between response and consultation (years) | Year listed on Schedule 1 | Time between response statement and GIC decision |
| Bull Trout - Saskatchewan - Nelson River population | Threatened | 2013 | The Minister of Fisheries and Oceans **will undertake consultations** with the government of Alberta, Aboriginal peoples, stakeholders, and the public on whether or not the Bull Trout, Saskatchewan - Nelson Rivers populations, should be added to the List of Wildlife Species at Risk (Schedule 1) under the Species at Risk Act as Threatened. The Minister of the Environment will forward the COSEWIC assessment of the Bull Trout, Saskatchewan - Nelson Rivers populations, to the Governor in Council upon completion of consultations. | 2015-04-15 to 2015-07-15 | 2 | 2019 | 6 |
| Eastern Sand Darter - Ontario | Threatened | 2010 | The above assessment confirms the classification of this wildlife species in Schedule 1, the List of Wildlife Species at Risk as Threatened. | NA | NA | 2013 | 3 |
| Eastern Sand Darter - Quebec | Threatened | 2010 | The Minister of the Environment will forward the COSEWIC assessment of the Eastern Sand Darter, Quebec populations, to the Governor in Council within three months. The Minister of Fisheries and Oceans **will consult** with the government of Quebec, Aboriginal peoples, stakeholders, and the public on whether or not the Eastern Sand Darter, Quebec populations, should be added to the List of Wildlife Species at Risk (Schedule 1) under the Species at Risk Act as Threatened. | No consultation period listed | NA | 2013 | 3 |
| Mountain Sucker - Milk River  | Threatened | 2011 | The Minister of Fisheries and Oceans **will undertake consultations** with the governments of Alberta and Saskatchewan, Aboriginal peoples, stakeholders, and the public on whether or not the Mountain Sucker, Milk River populations, should be added to the List of Wildlife Species at Risk (Schedule 1) under the Species at Risk Act as Threatened. The Minister of the Environment will forward the COSEWIC assessment of the Mountain Sucker, Milk River populations, to the Governor in Council upon completion of consultations. | 2013-02-28 to 2013-04-30 | 2 | 2017 | 6 |
| Plains Minnow | Threatened | 2013 | The Minister of Fisheries and Oceans **will undertake consultations** with the government of Saskatchewan, Aboriginal peoples, stakeholders, and the public on whether or not the Plains Minnow should be added to the List of Wildlife Species at Risk (Schedule 1) under the Species at Risk Act as Threatened. The Minister of the Environment will forward the COSEWIC assessment of the Plains Minnow to the Governor in Council upon completion of consultations. | 2013-11-29 to 2014-02-28 | 0 | 2019 | 6 |
| Pugnose Minnow | Threatened | 2013 | The Minister of Fisheries and Oceans **will undertake consultations** with the government of Ontario, Aboriginal peoples, stakeholders, and the public on whether or not the Pugnose Minnow should have its Schedule 1 status of Special Concern changed to Threatened on the List of Wildlife Species at Risk (Schedule 1) under the Species at Risk Act. The Minister of the Environment will forward the COSEWIC assessment of the Pugnose Minnow to the GIC upon completion of consultations. | 2013-11-30 to 2014-02-28 | 0 | 2019 | 6 |
| Rainbow Smelt - Lake Utopia - Small | Threatened | 2009 | The above assessment confirms the classification of this wildlife species in Schedule 1, the List of Wildlife Species at Risk as Threatened. Activities will continue to be undertaken in a manner consistent with the purposes, and according to the timelines identified in, the Species at Risk Act. | NA | NA | 2013 | 4 |
| Salish Sucker | Threatened | 2013 | The Minister of Fisheries and Oceans **will undertake consultations** with the government of British Columbia, Aboriginal peoples, stakeholders, and the public on whether or not the Salish Sucker should be added to the List of Wildlife Species at Risk (Schedule 1) under the Species at Risk Act as Threatened. The Minister of the Environment will forward the COSEWIC assessment of the Salish Sucker to the Governor in Council upon completion of consultations. | No consultation period listed | NA | 2019 | 6 |
| Silver Shiner | Threatened | 2011 | The Minister of Fisheries and Oceans **will undertake consultations** with the government of Ontario, Aboriginal peoples, stakeholders, and the public on whether or not the Silver Shiner should be added to the List of Wildlife Species at Risk (Schedule 1) under the Species at Risk Act as Threatened. The Minister of the Environment will forward the COSEWIC assessment of the Silver Shiner to the Governor in Council upon completion of consultations. | 2013-02-04 to 2013-04-02 | 2 | 2019 | 8 |
| Westslope Cutthroat Trout | Threatened | 2007 | The Minister of Fisheries and Oceans **will undertake consultations** with the government of Alberta, Aboriginal peoples, stakeholders, and the public on whether or not the Westslope Cutthroat Trout Alberta population should be added to the List of Wildlife Species at Risk (Schedule 1) under the Species at Risk Act. The Minister of the Environment will forward the COSEWIC assessment of the Westslope Cutthroat Trout Alberta population to the GIC upon completion of consultations | 2007-12-27 to 2008-04-25 | 0 | 2013 | 6 |
|  | Mean = 5.4 |
| Atlantic Whitefish | Endangered | 2011 | The above assessment confirms the classification of the Atlantic Whitefish which is already on Schedule 1, the List of Wildlife Species at Risk. This species will thus remain on the List as Endangered and activities will continue to be undertaken in a manner consistent with the purposes, and according to the timelines identified in, the Species at Risk Act | NA | NA | 2011 | 0 |
| Lake Chubsucker | Endangered | 2009 | The Minister of the Environment will forward the COSEWIC re-assessment of the Lake Chubsucker to the Governor in Council (GiC) within three months. This species is currently on the List of Wildlife Species at Risk (Schedule 1) under the Species at Risk Act as Threatened. The Minister of Fisheries and Oceans **will consult** with the government of Ontario, Aboriginal peoples, stakeholders, and the public on whether or not the Lake Chubsucker should have its Schedule 1 status of Threatened changed to Endangered. | 2009-11-24 to 2010-01-15 | 0 | 2011 | 2 |
| Misty Lake Stickleback - Lake - Lotic | Endangered | 2007 | The Minister of Fisheries and Oceans **will undertake consultations** with the government of British Columbia, Aboriginal peoples, stakeholders, and the public on whether or not the Misty Lake Lotic Stickleback should be added to the List of Wildlife Species at Risk (Schedule 1) under the Species at Risk Act. The Minister of the Environment will forward the COSEWIC assessment of the Misty Lake Lotic Stickleback to the GIC upon completion of consultations | No consultation period listed | NA | 2010 | 3 |
| Misty Lake Stickleback - Stream - Lentic | Endangered | 2007 | The Minister of Fisheries and Oceans **will undertake consultations** with the government of British Columbia, Aboriginal peoples, stakeholders, and the public on whether or not the Misty Lake Lentic Stickleback should be added to the List of Wildlife Species at Risk (Schedule 1) under the Species at Risk Act. The Minister of the Environment will forward the COSEWIC assessment of the Misty Lake Lentic Stickleback to the GIC upon completion of consultations | No consultation period listed | NA | 2010 | 3 |
| Nooksack Dace | Endangered | 2007 | The above assessment confirms the classification of this wildlife species in Schedule 1, the List of Wildlife Species at Risk. Activities will continue to be undertaken in a manner consistent with the purposes, and according to the timelines identified in, the Species at Risk Act. | NA | NA | 2007 | 0 |
| Northern Madtom | Endangered | 2013 | The above assessment confirms the classification of the Northern Madtom which is already on Schedule 1, the List of Wildlife Species at Risk. This species will thus remain on the List as Endangered and activities will continue to be undertaken in a manner consistent with the purposes of, and according to the timelines identified in, the Species at Risk Act. | NA | NA | 2013 | 0 |
| Rainbow Trout - Athabasca population | Endangered | 2015 | The Minister of the Environment will forward the COSEWIC assessment of the Rainbow Trout, Athabasca River populations, to the Governor in Council after the close of the **extended consultation period**. This species is not on the List of Wildlife Species at Risk (Schedule 1) under the Species at Risk Act. The Minister of Fisheries and Oceans invites comments from the provincial government, Aboriginal organizations, stakeholders, and the public on whether or not the Rainbow Trout, Athabasca River populations, should be added to Schedule 1 as Endangered. | 2016-01-08 to 2016-02-09 | 1 | 2019 | 4 |
| Silver Chub - Great Lakes Upper St. Lawrence | Endangered | 2013 | The Minister of Fisheries and Oceans **will undertake consultations** with the government of Ontario, Aboriginal peoples, stakeholders, and the public on whether or not the Silver Chub, Great Lakes - Upper St. Lawrence populations, should be added to the List of Wildlife Species at Risk (Schedule 1) under the Species at Risk Act as Endangered. The Minister of the Environment will forward the COSEWIC assessment of the Silver Chub, Great Lakes - Upper St. Lawrence populations, to the Governor in Council upon completion of consultations. | 2014-01-24 to 2014-03-31 | 1 | 2019 | 6 |
| Speckled Dace | Endangered | 2006 | The Minister of the Environment (or the Minister of Fisheries and Oceans) **will undertake consultations** with the government of British Columbia, Aboriginal peoples, stakeholders, and the public on whether or not the Speckled Dace should be added to the List of Wildlife Species at Risk (Schedule 1) under the Species at Risk Act. The Minister of the Environment will forward the COSEWIC assessment of the Speckled Dace to the GIC upon completion of consultations | 2007-01-16 to 2007-02-28 | 1 | 2009 | 3 |
| Spring Cisco | Endangered | 2009 | The Minister of Fisheries and Oceans **will undertake consultations** with the government of Quebec, Aboriginal peoples, stakeholders, and the public on whether or not the Spring Cisco should be added to the List of Wildlife Species at Risk (Schedule 1) under the Species at Risk Act as Endangered. The Minister of the Environment will forward the COSEWIC assessment of the Spring Cisco to the Governor in Council upon completion of consultations. | 2010-02-12 to 2010-04-30 | 1 | 2013 | 4 |
|  |  |  |  |  |  |  | Mean = 2.5 |

**References**

COSEWIC. 2019. COSEWIC assessment process, categories and guidelines [online]: Available from: <http://cosewic.ca/images/cosewic/pdf/Assessment_process_criteria_Nov_2019_en.pdf>.

[ECCC 2009] Environment and Climate Change Canada. 2009. Government of Canada Species at Risk Act policies: Overarching policy framework [online]: Available from <https://www.sararegistry.gc.ca/default.asp?lang=En&n=D89664FB-1&offset=7&toc=show#_Toc294262085>

[GOC 2012] Government of Canada. 2012. Species at Risk Act annual report 2012: Chapter 2, section 2.2.4. Species at risk public registry [online]: Available from <https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry/publications/annual-report-2012/chapter-2.html#X-2013090613500110>

[GOC 2017] Government of Canada 2017. Timeline for amendments to Schedule 1 of the Species at Risk Act [online]: Available from https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry/policies-guidelines/timeline-amendments-schedule-1.html

[GOC 2018] Government of Canada 2018. Consultation on Amending the list of species under the Species at Risk Act: Terrestrial species [online]: Available from <https://www.sararegistry.gc.ca/default.asp?lang=En&n=335D013E-1#_02>

Lukey JR, Crawford SS. 2009. Consistency of COSEWIC Species at risk designations: Freshwater fishes as a case study. Canadian Journal of Fisheries and Aquatic Sciences, 66(6): 959-71.

Mooers AØ, Prugh LR, Festa-Bianchet M, Hutchings JA. 2007. Biases in legal listing under Canadian endangered species legislation. Conservation Biology, 21(3): 572-75. <http://doi.wiley.com/10.1111/j.1523-1739.2007.00689.x>