



# Consultation Workbook Regarding the Addition of the Copper Redhorse

to the List of Wildlife Species at Risk

under the *Species at Risk Act*.

November 2005



Photography: Nathalie Vachon



## **Preamble**

**Your opinion is being sought by the Canadian Government in order to make an informed decision concerning the addition of the copper redhorse to the List of Wildlife Species at Risk, as presented in Schedule 1 of the Species at Risk Act (SARA).**

The status of the copper redhorse was first assessed by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) in 1999, and designated it as being "threatened". Recently revised, in November 2004, this status was changed to "endangered". The Minister of Fisheries and Oceans must now decide whether to recommend that the Governor in Council adds the species to the List of Wildlife Species at Risk. Before deciding how to proceed, the federal government wishes to consult Canadians, particularly those directly concerned, to obtain their opinion in order to properly determine the social and economic impacts, both positive and negative, of the addition of the copper redhorse to the List of Wildlife Species at Risk. This consultation workbook was therefore designed with this objective in mind.

We encourage you to answer the questions (any or all) at the end of this workbook. We also invite you to add any comment you consider relevant. You can be assured that your answers and comments will be taken into consideration in the decision-making process. To make sure your comments are considered, responses are required before:

**March 31, 2006**

You can download a copy of this consultation workbook and find additional information regarding SARA at the following Internet address:

<http://www.sararegistry.gc.ca>

**Sources used:**

Vachon, N. 2004. COSEWIC Status Report on the copper redhorse *Moxostoma hubbsi*. Update prepared for the Committee on the Status of Endangered Wildlife in Canada, May 26<sup>th</sup>, 2004

Gariépy S. and N. Vachon. 2004. **Recovery plan for the copper redhorse** (*Moxostoma hubbsi*) **2004-2008**. Document prepared on behalf of the Copper Redhorse Recovery Committee, Direction du développement de la faune, Ministère des Ressources naturelles, de la Faune et des Parcs, Quebec, July 2004.

## 1. The Species at Risk Act

A large variety of wildlife species inhabit Canadian lands and waters. Unfortunately some of them are in danger of disappearing. The Canadian government has therefore seriously committed to protecting them, particularly by adopting the Species at Risk Act (SARA) in June 2003, as part of its Endangered Wildlife Species Protection Strategy.

This Act provides a legal framework for adopting measures, throughout Canada, that will ensure the survival of wild animal and plant species and protect our natural heritage. This Act also establishes the criteria being used to determine which species must rapidly become the focus of recovery measures, and the methods to implement recovery in order to protect them. Finally, this Act establishes guidelines for cooperation between governments, organizations and individuals, and provides sanctions for offenders.

Environment Canada is responsible for the overall implementation of SARA. However, Fisheries and Oceans Canada has the responsibility for aquatic species at risk, except for individuals located on territories managed by Parks Canada (national parks, national historical sites, national marine conservation areas, and other protected heritage sites).

Since no single organization or entity can, on its own, take on the responsibility of ensuring the survival of a species, the effectiveness of the new Act will depend on everyone's goodwill to ensure the survival of all species at risk. With this in mind, SARA requires, at several steps throughout the process, that the federal government consult provincial and territorial governments, First Nations, landowners, resource users, and the general public.

The consultation objective of the current workbook is about adding the copper redhorse to the List of Wildlife Species at Risk presented in Appendix 1 of SARA. This list contains all the species that have been assessed by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), and benefit from SARA's protection. COSEWIC designated the copper redhorse as "endangered" in November 2004. The reader will find more details in the following sections regarding the addition of wild species, in copper redhorse, to the List of Wildlife Species at Risk and its legal consequences.

### 1.1 The role of COSEWIC

The mandate of the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) is to assess the status of wild animal and plant species present in Canada and assign them a designation. The Committee is comprised of specialists working in various relevant fields such as biology, ecology and traditional native knowledge. The members of COSEWIC come from different circles, such as governments, universities, aboriginal organizations, and non-governmental organizations. They are appointed according to their expertise, and must provide independent, impartial and scientific advice and recommendations in accordance with the mission of COSEWIC.

COSEWIC assesses the biological status of wildlife species by using the best scientific and traditional knowledge available. It reviews research and takes into account community and aboriginal traditional knowledge. In its species assessment, COSEWIC uses rigorous assessment criteria based on those developed by the World Conservation Union (IUCN).

The first step in assessing the status of a wildlife species is to request a status report, which will then be reviewed by peers and approved by a sub-committee of experts on the species. During a meeting of COSEWIC members (once or twice a year), the status report is examined, and discussions are held in order to determine whether the species is at risk, and if necessary, to provide a status designation.

The statuses provided, which represent risk level categories, are as follows:

- “Extinct” species: any species that no longer exists;
- “Extirpated” species: any species that no longer exists in the wild in Canada, but exist elsewhere;
- “Endangered” species: any species facing imminent extirpation or extinction;
- “Threatened” species: any species likely to become endangered if limiting factors affecting it are not reversed;
- “Of special concern” species: any species raising concerns because of characteristics that make it particularly sensitive to human activity or to certain natural phenomena.

COSEWIC submits its species assessment to the Minister of the Environment, who, in collaboration with the other competent ministers if necessary, initiates the process of adding the species to the List of Wildlife Species at Risk.

For more information, please visit the COSEWIC Web site at the following address:

<http://www.cosewic.gc.ca>

## **1.2 Wildlife species listing process**

Once COSEWIC has determined that a wildlife species is “at risk”, the first step to ensure its protection is to add it to the List of Wildlife Species at Risk, otherwise, it will not benefit from SARA protection. When COSEWIC submits its assessment to the Minister of the Environment, the Minister must produce a recommendation and present it to the Governor in Council (GIC). Within nine months of receiving the COSEWIC assessment (from the Minister of the Environment), GIC must react to the report and recommendation in one of the following ways:

- a) accept the assessment and add the species to the List of Wildlife Species at Risk;
- b) decide not to add the species to the List of Wildlife Species at Risk;
- c) return the assessment to COSEWIC for further information or consideration.

After nine months, if the Governor in Council has not make any decision, the Minister of the Environment will have to add the species to the List of Wildlife Species at Risk, as recommended by COSEWIC.

The Governor in Council's decision will initially be based on the advice of COSEWIC, which is based on the biological status of the species. However, in order to make an informed decision, the Government of Canada must assess other factors such as the social and economic impacts that could occur from adding a species to the List of Wildlife Species at Risk. This consultation is an opportunity for concerned Canadians to express their point of view and voice their concerns on this issue.

Once a species is listed as "extirpated", "endangered" or "threatened", two processes are triggered. Initially, a series of prohibitions are adopted to protect the species, and in order to begin its recovery, a recovery strategy and an action plan are developed. In the case of the species "of special concern" a management plan must be developed but no prohibition applies.

### **1.3 Protection**

Under the terms of SARA, Fisheries and Oceans Canada must ensure the protection of all aquatic species at risk. When a species is added to the List of Wildlife Species at Risk with an "extirpated", "endangered" or "threatened" status, prohibitions are automatically applied. The Act prohibits the killing, harming, harassing, capturing or taking of any individual belonging to that species. It also prohibits people from possessing, collecting, buying, selling or trading individuals of a species at risk. As well, the Act prohibits the damage or destruction of the residence or any part of the species' critical habitat, as defined within a recovery strategy or an action plan. It should be noted that these prohibitions do not apply to "special concern" species.

In the case of aquatic species, the Minister of Fisheries and Oceans (or Parks Canada when these species are found in waters managed by this Agency) may authorize exceptions to these prohibitions as long as the survival or the recovery of the species will not be in jeopardy. In fact, the competent Minister under the *Species at Risk Act* may enter into agreements or issue permits only if he is of the opinion that: 1) the activity is scientific research relating to the conservation of the species, 2) the activity benefits the species or enhance its chance of survival, 3) the activity only has incidental effect on the species. Furthermore, the competent Minister will not conclude an agreement or issue a permit only if he is of the opinion that: a) all reasonable alternatives to the activity were examined and the best solution was adopted, b) all measures will be taken to minimize the impact of this activity will be taken, and that c) the activity will not jeopardize the survival or recovery of the species.

### **1.4 Recovery planning and management plan**

The goal of the recovery process for "extirpated", "endangered" or "threatened" species is to reduce the causes of decline for that species by putting emphasis on stewardship and public awareness among others. First, a recovery strategy is prepared. It contains recovery objectives and strategies that are developed according to the threats the species is facing. Thereafter, an action plan is developed, which details the actions flowing from the recovery strategy.

The recovery of a species requires planning and teamwork. The competent Minister must therefore gather the people, organizations and government bodies interested in the species (federal, provincial or territorial government ministers from where the species can be found, wildlife resources management boards, First Nations organizations, landowners, and other people likely to be interested in the recovery of the species), and consult with them during

development of the recovery strategy. Planning for recovery is a continuous process. Every 5 years, the competent Minister must also prepare a report on the implementation of the recovery strategy, and the progress made towards meeting its objectives.

The recovery strategy and action plan must also indicate as well as possible the critical habitat of the species as well as activities that might potentially destroy it. The strategy must include a schedule of the researches to be undertaken in case of a lack of knowledge. Once the critical habitat has been identified in a recovery strategy or an action plan, the competent Minister must make sure there are legal tools to protect this critical habitat.

In the case of a special concern species, a management plan is developed that must contain conservation measures for the species and its habitat. Management plans are developed along with competent provincial or territorial ministers, federal ministers, wildlife resources management boards, and any other competent person or organization.

Once the recovery strategies, action plans, or management plans are developed, they are published on the Public Registry (see section 1.5). Anyone can make comments to the appropriate Minister in writing concerning the recovery strategy, the action plan, or the management plan for a listed animal or plant species. The general public has 60 days, after publication of the strategy or the plans in the Registry, to inform the Minister of their position.

## **1.5 Public Registry**

The SARA Public Registry, available on the Internet, is a complete source of information on issues covered by the Act giving access to public records concerning the administration of SARA. It is a key instrument in allowing the government to respect its commitment to support public contribution in the environmental decision making process.

The Registry includes various documents, such as regulations, orders, agreements, guidelines, standards and codes of practice. Furthermore, it contains status reports, recovery strategies, action plans, as well as management plans. The Public Registry can be found at the following address:

<http://www.sararegistry.gc.ca>

## 2. Background information on copper redhorse

**Statut :** endangered

**Last COSEWIC assessment :** november 2004

### 2.1 Description of the species

Copper redhorse (*Moxostoma hubbsi*, Legendre, 1942) is one of seven species of the genus *Moxostoma* (Catostomidae family) occurring in Canada. The metallic appearance of its scales is the reason for its name. In this family, there are three other species living in the same area: the silver redhorse (*M. anisurum*), the shorthead redhorse (*M. macrolepiotum*), and the river redhorse (*M. carinatum*).

### 2.2 Distribution of the species

The species occurs nowhere in the world except Canada, and its range is restricted to a few rivers in the lowlands of south-western Quebec. It is the only vertebrate that is found only in Quebec. Since 1942, the year it was discovered, it has been observed only in certain sections of the Richelieu, Yamaska, Noire and Mille Îles rivers, at the mouth of the Maskinongé River, and in a few reaches of the St. Lawrence River, between Vaudreuil and the downstream area of Lake Saint-Pierre. Its current distribution is limited to certain locations in the Richelieu River, to a short reach of the St. Lawrence, and possibly a residual aggregation in the Mille Îles River.

### 2.3 Copper redhorse biology

The copper redhorse has several biological features that distinguish it from its congeners, such as longevity (more than 30 years) and considerable size.

#### 2.3.1 *Breeding and spawning*

They reach sexual maturity at an older age (about 10 years) and spawn later in the season than its congeners. High female fecundity is another one of its features. The breeding period occurs at the end of June and beginning of July. So far, two breeding grounds have been identified, both in the Richelieu River, at several kilometres from each other: one upstream, in the archipelago of the Chambly rapids, and the other in the lower reach of the Saint-Ours dam.

#### 2.3.2 *Movements and migration*

Younger redhorses have a different predilection site than adults. Younger redhorses are found in shallow water near the shoreline. They remain there at least until the beginning of their second year. The section of the Richelieu River that includes the Jeannotte and the Cerfs islands is a significant rearing area. Summering and wintering areas for adults and young redhorses two years and older are still unknown. It is possible however that adults winter in the reaches of the Lavaltrie-Contrecoeur river corridor.



### 2.3.3 *Diet*

Over 90% of the copper redhorse diet is made up of small molluscs. Their pharyngeal apparatus is well adapted to crushing this small shell prey. This type of diet is unique to this species of fish in North America.

### 2.3.4 *Population size*

Since the discovery of the copper redhorse in 1942, less than 800 individuals have been identified. Despite the tagging made in the Richelieu River in the 1990s, no tagged fish has ever been recaptured. It is therefore impossible to estimate the number of individuals. Currently, the only estimate available concerns the Lavaltrie-Contrecoeur aggregation. This group numbers around 100 individuals. There have been almost no captures of juvenile redhorses of two years and older over the last 30 years. These observations show how serious the issue of recruitment is<sup>1</sup>.

### 2.3.5 *Habitat*

Some studies have described in a general way the streams where the copper redhorse can be found. They inhabit medium-sized rivers, with steep banks, a maximum depth of 4 to 7 m, a hard bottom, generally composed of gravel, sand and clay. Current is moderate and summer water temperatures are higher than 23°C. Areas with rapids are conducive to breeding. The two known spawning grounds (archipelago of the Chambly rapids and the Saint-Ours dam) have the following characteristics in common: riffle areas, with a moderate to slow current and depths ranging from 0.75 to 2 m; bottoms made up of different size gravel, rocks and fragments of bedrock partly submerged in the clay.

In 1998, an aggregation of copper redhorses was rediscovered<sup>2</sup> in the Lavaltrie-Contrecoeur sector of the St. Lawrence River. This reach of the river could be a spring or fall gathering area or even a wintering area. It could not be shown that this area was a spawning ground. Contrary to adults who avoid shallower areas with dense vegetation, young-of-the-year and one-year olds prefer them. The significant rearing site, located in the Jeannotte and Cerfs islands area, is characterized by a current and a soft slope, and by a homogeneous substrate made up of a mix of fine clay-silt particles and sand. The fry of the year prefer to gather in shallow areas (1.5 m) with vegetation.

## **2.4 Why has COSEWIC designated the copper redhorse as an endangered species?**

Here are the reasons for the COSEWIC copper redhorse designation:

- Global distribution of the species limited to a few streams in the St. Lawrence plain;
- Rare in its distribution range and numbers in decline;
- Weak numbers: total population estimated at a few thousand individuals at the most;
- Particular biological characteristics: specialized diet species, and late sexual maturity and spawning periods;
- Habitat degradation and fragmentation;
- Introduction of potentially competing species;

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<sup>1</sup> Recruitment: The number of fish added to the exploitable stock each year through growth or migration.

<sup>2</sup> First discovered in 1970 (Massé and Mongeau 1976)

- Aging population and low recruitment;
- Breeding difficulty in natural environment.

## **2.5 What is threatening this species?**

### *2.5.1 Geographical and biological features*

- Global distribution of the species limited to a few streams in the St. Lawrence plain.

Since 1942, it has been found only in certain sections of the Richelieu, Yamaska, Noire and Mille Îles rivers (a residual aggregation), at the mouth of the Maskinongé River, and in a few reaches of the St. Lawrence River, between Vaudreuil and the downstream area of Lake Saint-Pierre. Currently, aggregations are located in the Richelieu River and a short reach of the St. Lawrence River.

- Specialized diet species

The copper redhorse's pharyngeal apparatus is very specialized and limits its choice of prey. Its diet is almost exclusively limited to small molluscs.

- Late sexual maturity and spawning periods

Sexual maturity at an older age (10 years) and a late spawning period (shorter time for growth and smaller fry size facing their first winter) are two factors contributing to the species vulnerability. It has not yet been demonstrated, but it is possible that smaller fry are dying during winter.

- Breeding and aging population

Some studies suggest that the species has difficulties breeding in a natural environment (late sexual maturity and spawning periods, restricted diet). The very low recruitment is insufficient to balance out natural mortality. The only two known spawning grounds are the Chambly basin archipelago, downstream from the Chambly rapids, and the one at Saint-Ours. The only confirmed breeding aggregation is in the Richelieu River, at two different sites.

- Decreasing distribution range

There is no doubt that man-made activities jeopardize the species. In fact, the copper redhorse streams are located in the most heavily populated areas of Quebec. Other areas within the distribution range could have the necessary characteristics for copper redhorse breeding (Grand Moulin rapids on the Mille Îles River, Dorion and Sainte-Anne-de-Bellevue channels). However, there has been no copper redhorse found at those sites.

### *2.5.2 Degradation, fragmentation and changes to the habitat*

Among the different theories explaining the decline of the species, the most significant obviously have to do with habitat degradation and fragmentation. The degradation of the quality of streams is caused by, among other things, the excessive input of nutrients and by the increase of the rate of erosion (silting).

➤ Agricultural, foresting and urbanization activities

It is likely that the copper redhorse disappeared from the Yamaska and Noire rivers because of significant problems related to heavy agricultural activities, foresting and to urban development: deoxygenation (eutrophication), silting and turbidity (muddy water). These changes destroy habitat and disrupt the entire food chain; the copper redhorse and its prey, molluscs, are particularly sensitive to this type of aggression. The excessive input of fertilizers in streams causes a blooming of vegetation that attracts carp (*Cyprinus carpio*), pumpkinseed (*Lepomis gibbosus*) and newly introduced tench (*Tinca tinca*). These species compete with copper redhorse and therefore restrict the available habitat for young-of-the-year. For adults, the blooming vegetation works against them because they usually avoid this type of habitat.

The discovery of zebra mussel colonies (*Dreissena polymorpha*) in the Richelieu River is alarming. This mussel could take over sites that harbour molluscs that are part of the copper redhorse diet. Furthermore, this mussel, which is well known for its ability to concentrate contaminants in its organism, could intoxicate the copper redhorse if it began eating it.

Some contaminants stemming from pesticide use and from water treatment plants effluents could interfere with hormonal signals and prevent males and females from being able to breed. Copper redhorse spawners, eggs and larvae are more exposed to contaminants than their congeners who spawn earlier in the season, because the spawning period coincides with the reduction of the flow in streams and the peak of agricultural pesticide application. These same pollutants are likely to contaminate copper redhorse prey that, by eating them, will also become contaminated.

➤ Water control structures

Many dams were built in the copper redhorse distribution range and restrict its movements. This is the case of the Saint-Ours dam (between 1967 and 2001). Beginning in the spring of 2001, the Vianney-Legendre multi-species migratory fishway at the Saint-Ours dam allowed the copper redhorse to travel to the Chambly basin archipelago several kilometres further upstream. The Yamaska, Noire and Mille Îles rivers are also regulated, and the copper redhorse cannot move freely.

➤ Disturbance

In the Chambly basin archipelago, near the rapids, recreational boaters and vacationers are also visiting the copper redhorse spawning grounds. Human movements on the islands disturb spawners, and in certain areas, eggs are being stepped on. In 2002, in an attempt to protect the copper redhorse habitat, the Pierre-Étienne-Fortin Wildlife Sanctuary was created and regulations were implemented.

### 2.5.3 Other factors

Lower water levels in the St. Lawrence River could make certain potential spawning areas inaccessible to copper redhorses and restrict their feeding grounds.

Because the copper redhorse was a favourite food in the 19th century, over-fishing could have weakened certain populations.

### **3. Overview of potential consequences for different stakeholders**

This consultation workbook was designed so that the different stakeholders can better understand the implications on their activities of adding the copper redhorse to the List of Species at Risk. If the species is listed, automatic prohibitions under SARA will apply. Under the terms of SARA, some prohibitions protect the individuals of a species designated as “extirpated”, “endangered” or “threatened”. The Act prohibits the killing, harming, harassing, capturing or taking of any individual belonging to an “endangered” or “threatened” species, or damaging or destroying its habitat. It also prohibits people from possessing, collecting, buying, selling or trading individuals – any part or derivative of such an individual – from an “extirpated”, “endangered” or “threatened” species.

A recovery process will be implemented and will likely result in the adoption of management measures that may have consequences on the activities of stakeholders concerned. In order to better illustrate this fact, a few examples of possible consequences are presented below. These examples, taken from the **Plan de rétablissement pour la survie du chevalier cuiré (*Moxostoma hubbsi*) 2004-2008** (Gariépy S. and N. Vachon. 2004), are obviously not an extensive list of measures and is not necessarily a representation of what will actually become the adopted measures. It should be noted that the SARA was designed to implement a cooperation approach for species recovery, and in the event this species is added to the official list, all future management measures will be subjected to more consultations with regulating bodies and stakeholders.

#### **3.1 Shoreline residents and landowners**

Re-vegetating projects aiming at stabilizing river banks and protecting riparian strips, such as those put forward by agricultural or environmental groups or by public and private bodies, should be implemented.

#### **3.2 Agricultural and industrial activities**

Agricultural soil erosion at the head of watersheds and all along the river system sends suspended sediments, pesticides, fertilizers and agriculture-based pathogens into streams. To offset this phenomenon, cooperative measures between biologists, municipalities, governments, environmental groups and agricultural representatives involved in this issue should be encouraged.

#### **3.3 Recreational activities**

In 2002, in order to protect the copper redhorse habitat, the Pierre-Étienne-Fortin Wildlife Sanctuary was created and regulations were implemented.

Acquiring river properties and managing strategic territories that give access to areas visited by this species would reduce the disturbance generated by boaters by limiting their access to these areas.

### **3.4 Fishery industry**

Catching copper redhorse either through sport fishing or commercial fishing has already been outlawed in streams that are part of its distribution range. It is important to outline the extent of the threat that any fishery activity has on the copper redhorse. Should one of these activities threaten the survival and recovery of a species listed on the List of Species at Risk, management measures will be taken to eliminate the threat. Fishing could be prohibited, areas could be closed to fishing, fishing gear may have to be modified, or other measures could be adopted in collaboration with industry in order to eliminate or reduce interactions between the species and the fishery.

### **3.5 Municipal activities**

Measures that are aimed at improving the quality and the flow rate of water, rigorous guidelines concerning development that can impact the habitat of the copper redhorse, and measures reducing the disappearance of natural shorelines could be developed.

Promoters of project involving the streams targeted by the copper redhorse recovery strategy should first take an inventory of the species and conduct a risk assessment. Critical habitats will be subjected to strict protection measures and it will be forbidden to destroy even a part.

Additional or extended measures will not be implemented until new consultations have taken place.

### **3.6 Aboriginal activities**

Aboriginal people will be contacted. Their interest in the copper redhorse is still unknown. It should be noted however that the recovery planning process will require new consultations.

#### **4. Let us know what you think**

Adding the Copper Redhorse to the List of Wildlife Species at Risk will lead to the implementation of a series of prohibitions to protect the species, and to the establishment of a recovery process that could have both positive and negative impacts for interested stakeholders.

It is now your turn to speak up! By answering the following questions before March **31, 2006**, you will ensure the federal government has a complete description and understanding of costs, advantages and impacts related to the addition of the copper redhorse to the List of Wildlife Species at Risk.

How to proceed:

- You can answer the questionnaire (detachable) in the reserved space below or on separate sheets that you will send us by mail at the following address:

**Species at Risk Coordination Office  
Maurice Lamontagne Institute  
Fisheries and Oceans Canada  
P.O. Box 1000  
850 route de la Mer  
Mont-Joli, Québec  
G5H 3Z4**

- Or by fax : **(418) 775-0542**
- You can also send us your answers by email at the following address:

[especiesperilqc@dfo-mpo.gc.ca](mailto:especiesperilqc@dfo-mpo.gc.ca)

**Deadline: March 31, 2006**

For any question or comments concerning the Species at Risk Act or concerning this consultation process, please do not hesitate to write (coordinates above) or to communicate with us at:

**1-877-775-0848**

**Thank you!**

**Questionnaire**

**Name:** \_\_\_\_\_

**Affiliation** (if applicable): \_\_\_\_\_

**Question 1**

Briefly describe your activity sector or your interest concerning the copper redhorse (use of shoreline, agriculture, urbanization, etc.)

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**Question 2a**

Based on what you know about the Species at Risk Act, do you think the addition of the copper redhorse will have a positive or negative impact on **your activities**?(revenues, turnover,opportunities, number of jobs, hours worked,etc.) Explain.

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**Question 2b**

On the other hand, do you think that not adding the copper redhorse would have a positive or negative impact on **your activities**? (revenues, turnover, opportunities, number of jobs, hours worked, etc. ) Explain.

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**Question 3a**

Based on what you know about the Species at Risk Act, do you think the addition of the copper redhorse will have a positive or negative impact on **other activities** (commercial fishing, sport fishing, other industries, etc.)? Explain.

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**Question 3b**

On the other hand, do you think that not adding the copper redhorse would have a positive or negative impact on **other activities**? (commercial fishing, sport fishing, other industries, communities etc.)? Explain.

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**Question 4**

According to you, can these positive or negative impacts progress with time? Explain.

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**Question 7**

How could you contribute to the recovery of the copper redhorse as an individual, company or institution? Can you give a few examples of activities?

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**Question 8**

a) Are you in favour of the Canadian government adding the copper redhorse to the Species at Risk Act list?

Yes\_\_\_\_ No\_\_\_\_ Don't know \_\_\_\_ Yes, but \_\_\_\_\_

Why?\_\_\_\_\_

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b) Check an answer for each statement below:

	AGREE COMPLETELY	SOMEWHAT AGREE	INDIFFERENT	DON'T REALLY AGREE	DON'T AGREE AT ALL
I believe this species is precious because it plays a significant role in maintaining a healthy ecosystem.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I believe this species is precious for future generations.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I value this species even though I may never see one.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I believe this species needs protection or particular attention against interaction with humans and/or their activities.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I believe that protecting this species will have a positive impact on my leisure, employment or personal activities.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I believe that adding this species to the official list might limit my leisure, employment or personal activities.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

