

Where is it found?

The distribution area of the copper redhorse is limited to a few rivers, namely the Richelieu, Des Prairies, Mille Îles, Yamaska and Noire rivers as well as the St. Laurent River, from Lake Saint-Louis to Lake Saint-Pierre.

The monitoring of adult copper redhorses fitted with a transmitter has revealed that this species migrates over large distances and is rather solitary in nature. In spring, adults swim upstream toward Richelieu River to reach their spawning grounds. Some specimens can cover 120 km in 5 days! In summer and fall, the copper redhorse does not move about much and tends to frequent the aquatic vegetated area of the St-Laurent River and other large rivers around Montreal in order to feed. In winter, adults remain spread out over the entire territory and are not very active.

The first months of life. The eggs and the young fish are left to fend for themselves since most of the spawners quickly leave the spawning ground to return to their feeding areas. The newly hatched larvae remain buried in the substrate for approximately ten days before dispersing along the river, carried by the current, and colonizing the shallow zones near the shores. These habitats, where the current is weak and vegetation is present, are veritable "nurseries" or fry-rearing sites. The young fish find an abundant supply of food allowing them to grow enough to be able to face their first winter, while enjoying protection from predators. All of Richelieu River, from the Chambly dam up to the St-Laurent River, is a very important habitat for young copper redhorses.

Photo : Daniel Hatin, MRNF

The copper redhorse: a fish that is exclusive to Québec

The copper redhorse (*Moxostoma hubbsi*) is found in a few rivers in southwestern Québec and nowhere else in the world. This species gets its name from its copper colour. The copper redhorse is also characterized by its lumpy back and its small triangular head, which accounts for one-fifth of its total body length.

In Québec, the copper redhorse has been designated a threatened species since 1999 under the Act respecting the Status of Endangered Wildlife in Canada (COSEWIC) changed the copper redhorse's status of threatened species in Canada, a status which it had benefited from since 1987, to that of endangered species, a status legally assigned in December 2007 under Canada's Species At Risk Act (SARA). These designations confirm the precarious state of this species and afford it additional legal protection.



Copper redhorse pharyngeal teeth Photo: Yves Chagnon, MRNF www.historiedelaumontréal.ca Mollusc, Arnicaola Cloutier & Harper

How can I help the copper redhorse?

Your contribution is very important. It is all a matter of doing your share!

Through such simple actions as:

- avoiding boating in shallow waters and near aquatic vegetated areas and shores to reduce the disturbance of copper redhorse spawners, eggs and larvae and to limit the negative impacts on this species' habitat;
- using biodegradable cleaning products that are phosphate free;
- learning to recognize redhorses and suckers; releasing them if you inadvertently catch them, and refraining from using redhorses, whether dead or alive, as bait;
- respecting the boundaries, periods of access and regulations of the Pierre-Étienne-Fortin wildlife refuge when boating, swimming or wading;
- preserving or re-establishing the indigenous vegetation in the buffer strip over a minimum width of 10 metres to improve the health of rivers and streams;

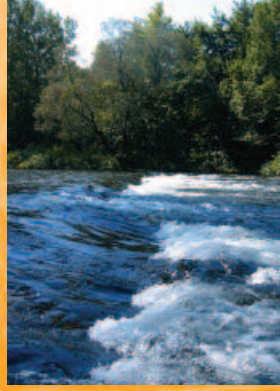
• choosing Rescouste and Escouste beers, brewed exclusively to help threatened or vulnerable species. A portion of the proceeds from the sale of these products is donated to the Fondation de la faune du Québec to help fund research, management or education projects intended to protect endangered species.

To learn more about the copper redhorse, get in touch with the Direction générale de l'Estrie-Montréal-Montréal du Ministère des Ressources naturelles et de la Faune at (450) 928-7608 (www.mrnf.gouv.qc.ca), the Comité de concertation et de valorisation du bassin de la rivière Richelieu (COVABAR), or visit the web site of Rescouste (www.rescouste.org).



Like all members of the Catostomidae family, redhorses can be recognized by their ventral mouth surrounded by thick lips. However, the copper redhorse stands out from other redhorses in several respects in that it:

- grows to large sizes (> 70 cm and 5.5 kg)
- lives longer (more than 30 years)
- is more prolific (a 5.3 kg female can produce 112,000 eggs)
- begins to reproduce at a later age (toward 10 years old) and later in the season than other species (late June-early July)
- feeds almost exclusively on molluscs, which it grinds with molar-like teeth located in its pharynx (throat)



Spawning habitat Photo: COVABAR

Did you know that these teeth are similar in size to the molars of an adult human? The other species of redhorse have smaller and more numerous teeth.

Copper redhorse reproduction or spawning takes place in fast-flowing water (less than 2 metres in depth) on a substrate made up of gravel and pebbles. At the present time, only two reproduction sites have been identified in the Richelieu River. The Chambly spawning ground is the biggest and the best preserved. The other spawning ground is located immediately downstream from the Saint-Ours dam.

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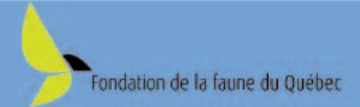
Illustration en page couverture : Ghislain Caron, Projet Rescouste



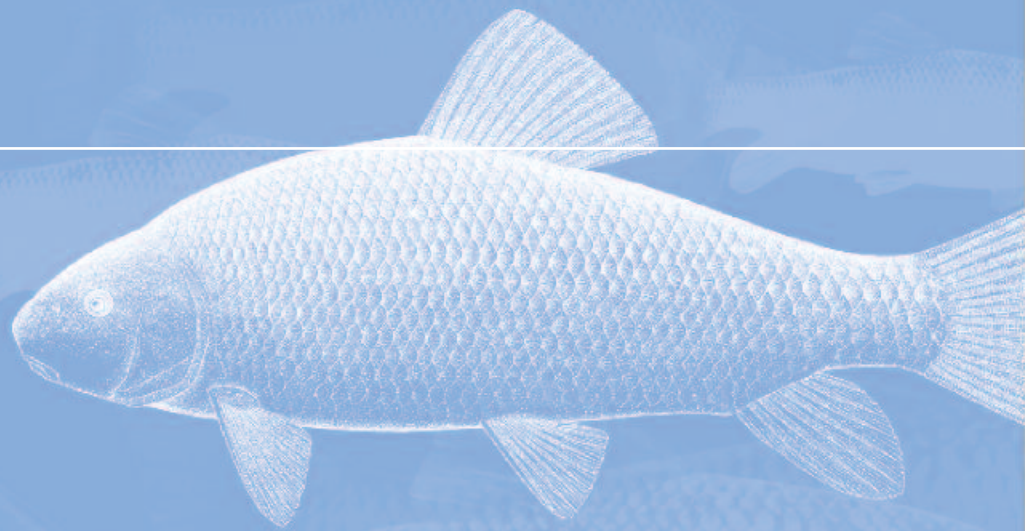
The Copper Redhorse



Let's do our share to save this endangered fish



Ensuring copper redhorse survival



Why is it endangered?

Why the species is of concern:

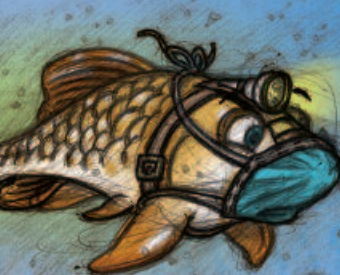
- the population is on the decline and is aging;
- the copper redhorse is having serious difficulty reproducing in a natural setting, to the point where recruitment is insufficient to renew the population.

Causes of the decline

The limiting factors and threats result mainly from human activities.

The deterioration and the loss of habitat are at the heart of the problem.

Some rivers are fragmented by dams. The possibilities for the copper redhorse to reach the best reproduction sites and feeding habitats are thus reduced.



Bad practices along rivers and streams contribute to their deterioration and reduce the quality of water. These practices are both varied and detrimental:

- the artificialization of shores, the destruction of vegetated buffer strips, fill work, dredging and clearing not only lead to a loss of habitats, but also reduce the ecological integrity;
- excessive amounts of fertilizers, fine sediments, pesticides and other toxic substances associated with agricultural, industrial and urban activities affect the species during every stage of its life cycle.

Did you know that the contamination of rivers could adversely impact the final maturation of copper redhorse gonads (sex glands) and also affect the molluscs on which this species exclusively feeds?

Some recreational activities, such as boating in shallow waters, disturb fry-rearing habitats by stirring up sediments and destroying aquatic vegetation. The disturbance of spawners, the trampling of eggs by pleasure boaters, and inadvertent redhorse catches during sport and commercial fishing activities without releasing the specimens or resulting in their injury at the time of release pose direct threats to individual copper redhorses.

The impacts of the introduction of several exotic and invasive species such as carp, tench and the round goby are not known at the present time but the possibility of potentially harmful effects cannot be ruled out.

A few characteristics of the copper redhorse's biology increase its fragile nature. For example, since this species spawns late in the season, spawners are subject to greater disturbances and are exposed to more contaminants due to the peak presence of pesticides during this period characterized by lower water flows. To this must be added the copper redhorse's specialized diet, which only increases its vulnerability.



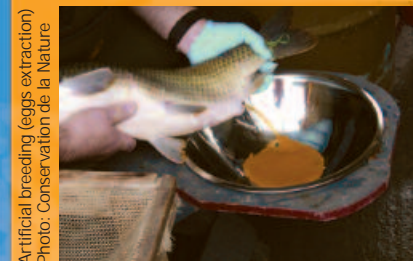
Photo : Jean-Luc Lebrun, Agence Publiphoto



Photo : Louis Bernatchez

Considerable efforts are being made to promote this species' recovery and protection:

The copper redhorse recovery team, made up of partners from various backgrounds, was set up in 1991. Its role consists of identifying and prioritizing the objectives, strategies and actions to ensure this species' survival.



Artificial breeding (eggs extraction)
Photo: Conservation de la Nature

To date, several actions stemming from the recovery plans have been carried out :

- Implementation of **special regulations**: there has been a ban on using redhorses as bait fish since the 1980s. The commercial fishery for the copper redhorse and the river redhorse has been prohibited since 1988. Sport fishing for and the keeping of all redhorses and suckers in certain stretches of rivers frequented by the species have been banned since 1998. Offenders face stiff penalties (S.O.S. Poaching: 1-800-463-2191).



- **Construction of the Vianney-Legendre fish ladder** at the Saint-Ours dam in 2001. This fish ladder is used by more than thirty species of fish, including the copper redhorse which is once again able to reach the Chambly spawning ground.

- **Creation of the Pierre-Étienne-Fortin wildlife refuge** in the Chambly rapids in 2002 to protect the spawning ground and to limit the disturbance of spawners. This location, which is the most important fast flowing water zone of Richelieu River, is frequented by 57 of the 75 fish species surveyed in the river.



Photo : Daniel Hatin, MRNF

- Since 2004, the **artificial reproduction** of the species, the rearing of young fish at the Baldwin fish-farming station and the stocking of larvae and juveniles in Richelieu River to rebuild the reproductive stock, as current spawners are rare and getting older.

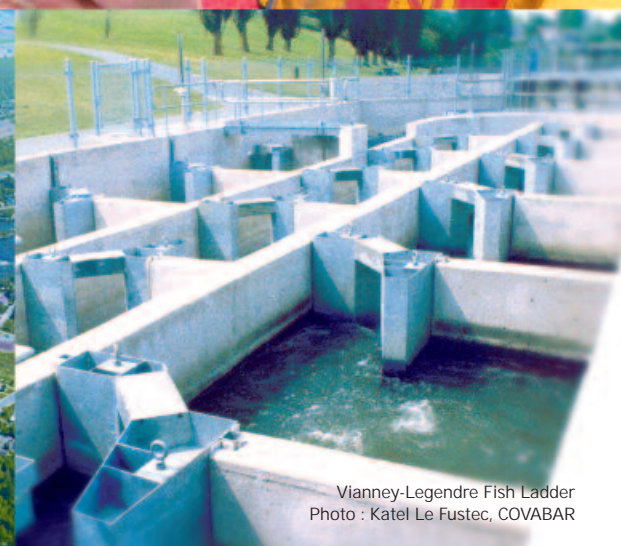
- Since 2006, the **acquisition of Île Jeannotte** in the Saint-Marc-sur-Richelieu sector and the conservation of the aquatic vegetated area around the island by the Nature Conservancy. This site is an essential habitat for the survival of young copper redhorses.

- Efforts have been undertaken by various organizations in conjunction with the public to improve water quality and habitats in the Richelieu River and its tributaries.

- Creation of the **Atlas of copper redhorse habitats** identifying essential habitats that require protection.



Pierre-Étienne-Fortin Wildlife Refuge
Photo : Conservation de la Nature.



Vianney-Legendre Fish Ladder
Photo : Katel Le Fustec, COVABAR