

Date: April 9<sup>th</sup>, 2021

**Re: Comments on the proposal by GloFish LLC to sell the genetically engineered Siamese Fighting Fish, *Betta splendens* in Canada.**

**Background**

Nature Canada is one of the oldest national nature conservation charities in Canada. For 80 years, Nature Canada has helped protect over 110 million acres of parks and wildlife areas in Canada and countless species. Today, Nature Canada represents a network of over 100,000 members and supporters and more than 800 nature organizations.

Nature Canada has a growing interest in the implications of genetic engineering technologies for nature. Specifically, we are concerned about the genetic modification of species with wild counterparts such as Atlantic salmon, and the potential for the genetic contamination of the wild populations. Working with Indigenous partners we are paying close attention to the implications of CRISPR and other technologies for Indigenous Peoples' rights.

GloFish LLC has genetically engineered fish that are found in freshwater systems in South America and Asia. As more of these fish are sold in more countries, including potentially in countries where these fish naturally occur, the possibility of these fish escaping or being released and breeding with their wild counterparts increases. Canada by approving these fish is encouraging other countries to do so, including countries which are in, or adjacent to, the home range of the zebra fish, Siamese fighting fish, or tetra. Also huge numbers of aquaria fish are transported around the globe on a daily basis and over the time the likelihood of these genetically engineered fish being shipped to a country where they are found in the wild only increases.

1. Why isn't Environment and Climate Change Canada and Fisheries and Oceans Canada assessing the pathways by which these engineered ornamental fish could be released, accidentally or otherwise, in their natural distribution range?

Canada's commitment to protecting biodiversity doesn't end at its borders. Fisheries and Oceans Canada should also be assessing the long-term risk to wild populations in their home range including the pathways by which these fish could reach their home range.

2. Why isn't Environment and Climate Change Canada and Fisheries and Oceans Canada assessing the pathways by which these engineered ornamental fish could be released, accidentally or otherwise, outside of their natural distribution range but in environments with climates more favourable to their survival, such as the Southern United States. If these fish establish themselves in the Southern US there is the impact of an invasive species on that ecosystem and also that their establishment there would increase the likelihood of these fish being intentionally or accidentally transported back to their home range.

The [Washington Post](#) published an article in 2012 which quoted several scientists who had concerns about the invasiveness of genetically engineered aquaria fish in the US, particularly *Gymnocorymbus ternetzi* or black tetra. These comments contradict the conclusions drawn by Hill et al. in their 2014 paper which was cited in the [Canadian Science Advisory Secretariat Science Advisory Report 2019/02](#).

3. In assessing the risk did Environment and Climate Change Canada and the Fisheries and Oceans Canada consider that these fish are being sold for purely ornamental purposes?
4. Why isn't Canada labelling GE ornamental fish?

In [an assessment\(2019\)](#) of *Danio rerio*, zebra fish, departmental officials replied that since these fish weren't consumed by humans there was no need for labelling. It is important for the relevant departments to realize that Canadians have a range of concerns around genetically engineered organisms. Nature Canada is concerned about the risk to nature and thus it is important for genetically engineered fish to be labelled to let wholesalers, retailers and customers know about the elevated risk these fish pose.

We look forward to your response. We appreciate the opportunity to comment but would repeat our request that this Voluntary Public Engagement Initiative be made mandatory via changes in legislation and regulation.

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