

# GloFish

**Background:** GloFish<sup>®</sup> are transgenic freshwater fish (GloFish LLC, n.d.). There are multiple species of GloFish<sup>®</sup> including tetras, danios, and barbs (GloFish LLC, n.d.). Each of these fish come in different fluorescent colors—Starfire Red<sup>®</sup>, Sunburst Orange<sup>®</sup>, Electric Green<sup>®</sup>, Cosmic Blue<sup>®</sup>, Galactic Purple<sup>®</sup>, and Moonrise Pink<sup>®</sup> (GloFish LLC, n.d.). They are popular fish in the aquarium trade around the United States, especially among younger children who are fascinated by their colors (GloFish LLC, n.d.). GloFish<sup>®</sup> are patented and their name is trademarked by GloFish LLC (GloFish LLC, n.d.).

**Genetic engineering process:** In a process called “microinjection,” a fluorescence gene isolated from a jellyfish or sea anemone is added to the fish when it is only a few cells large (GloFish LLC, n.d.). Embryonic development occurs and a transgenic, fluorescent fish is born that will be able to pass on its fluorescence genes through traditional breeding after reaching maturity (GloFish LLC, n.d.).

**Usefulness:** GloFish<sup>®</sup> have been used in numerous scientific studies. They were originally intended to be pollution indicators, but further research involving the fish has since been done (GloFish LLC, n.d.). In one such instance, fluorescent, GE zebrafish were used in cancer research (Chapman, 2014). The fluorescence gene which encodes for fluorescent proteins was used to identify differences in cancer tumor subpopulations (Chapman, 2014).

**Negative aspects:** Like all animals, GloFish<sup>®</sup> have the potential to become invasive species (GloFish LLC, n.d.). If they are released into the wild, they could destroy ecosystems and outcompete native species. GloFish LLC claims that they are no more harmful than their non-GE counterparts, but they still do pose a threat regardless (GloFish LLC, n.d.).

**Suggested improvements:** By only selling one sex of fish, GloFish LLC could minimize the risk of escaped fish establishing invasive populations in the wild. GloFish<sup>®</sup> are not capable of cloning themselves and can not reproduce without both a male and female.

**Current event:** In 2002, California’s Department of Fish and Game banned transgenic species including GloFish<sup>®</sup> in the state (Bonham, 2015 & Thompson, 2003). This decision was reversed in 2015 as it was recognized that GloFish<sup>®</sup> are not a major threat to wildlife (Bonham, 2015 & Sydelko, 2015).



(Left) Zebra danio Glofish exhibit shoaling behavior. Photo by GloFish LLC.  
(Right) A tetra Glofish shot from the side. Photo by GloFish LLC.

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(period 7)

# Sources:

## Information:

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## Images:

1. GloFish LLC (n.d.). Long-Fin Sunburst Orange ® Tetra [Digital Image]. Retrieved February 19, 2018, from [glofish.com/wp-content/gallery/media/sunburst-orange-glofish-lf-tetra-6235.jpg](http://glofish.com/wp-content/gallery/media/sunburst-orange-glofish-lf-tetra-6235.jpg). [glofish.com/images](http://glofish.com/images)
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