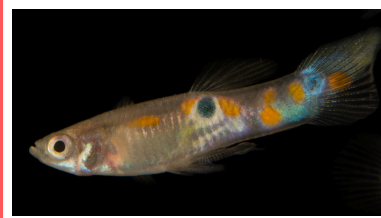


Invasive Stream Animals FISH

Differences in "livebearers"



Male



Male



Female



Female



Male



Female

Mosquitofish

Gambusia Affinis

silverish -grey body with white belly.
faint line across eye
peppered dots on tail
head is a little pointier and elongated

Mexican Molly

Poecilia sphenops

browner body than guppy + mosquito
yellow-orange fin near belly
can grow larger than guppy + mosquito
peppered dots on tail + dorsal fins

Rainbow Guppy

Poecilia reticulata

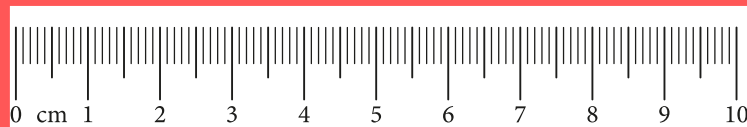
silverish-grey. Greyer body than Molly
males have rainbow oil slick coloration
males have black dots on body and tale
NO peppered dots on tail + dorsal fins

Green Swordtail

Xiphophorus helleri

Prominent bright red line along body
silver body that appears iridescent
green when light moves across it.
males have sword appendage on tail

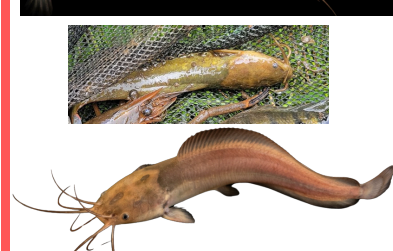
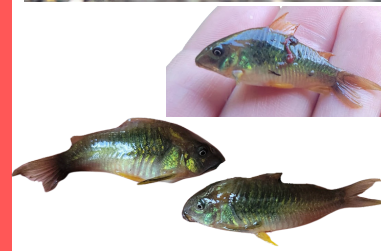
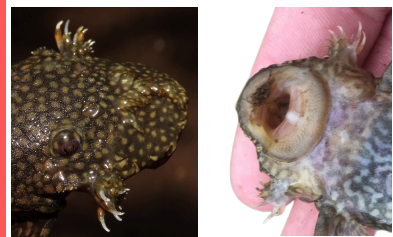
problems they cause :



Popular pets introduced to Hawai'i through the aquarium + fish farming industries in early 1900s. Guppies documented in natural waterways by 1922. Found in streams + on all major Hawaiian Islands except Lana'i. Livebearers are capable of reproducing 10-100 babies roughly every 4-8 weeks depending on the species. Known to carry parasites that infect 'o'opu. Guppies, Mollies, and Swordtails eat the eggs of native fish + damselfishes resulting in population decline (USFWS, 2018) (Nico et al., 2012)

Invasive Stream Animals FISH

Differences in catfish



Bristlenose Catfish

Ancistrus temminckii

long dark brown armored body, light brown spots. Pronged appendages near mouth, & sometimes fleshy "tentacles" on snout. Babies can be less than 1in. max size approx 5in. Snout is rounder + flatter than suckermouth

Suckermouth Catfish

Hypostomus watwatta

long hard armored brown body with black spots. Leading edge of pectoral + dorsal fin rough like sandpaper. babies can be less than 1in. max size >12in. Snout is pointier and more dimensional than bristlenose

Bronze Catfish

Corydoras aeneus

short + plump silverish -grey body w/ iridescent green shine
eye movement can look like "blinking"
max size approx 3 inches

Chinese Catfish

Clarias fuscus

long brown slick eel-like body
CAREFUL HANDLING REQUIRED...
sharp venom containing spines on dorsal + pectoral fins
typical size 5-12 inches

problems they cause :

All but the Chinese "walking" catfish were introduced to Hawai'i through the aquarium industry around 1980. Chinese catfish came as food source with waves of Chinese immigrants in early 1800s plantation era. Sucker and bristlenose compete for food + space with native species due to their high abundance (Neilson, 2021) and create burrows which cause increased erosion + sedimentation (CABI, 2021). Sucker + Bristlenose exist in high abundance across most stream of O'ahu and Maui.

Invasive Stream Animals FISH

Differences in Cichlids



Mozambique Tilapia
Oreochromis mossambicus

Silverish-olive green football shaped body. Males may have some red coloration on fin margins. Eyes a bit smaller, face more sloping, and mouth pointier and more upturned than the Black Chin. Can handle higher salinity. max size 16in--40cm



Black Chin Tilapia
Sarotherodon melanotheron

silverish-grey football shaped body. Black spots on chin or throat. Faint vertical darker color banding along body. Males may have gold spot near gills. Mouth more rounded and not upturned compared to Mozambique. max size 11in.--28cm



Convict Cichlid
Amatitlania nigrofasciata

Black and white striped football shaped body. Can also be all white or pinkish in color due to albinism. triangular shaped face with bottom jaw jutting out slightly more than top jaw. babies can be <1 in. max size 5in--12cm



Green Terror Cichlid
Aequidens rivulatus

grey-silver base with vibrant iridescent green and multi-color patterned scales. May have pronounced bump on head above eyes as this is a desirable trait in aquarium trade. max size 12in--30cm



Red Devil Cichlid
Amphilophus labiatus

Vibrant reddish-orange scales football shaped body. May have pronounced bump on head above eyes as this is a desirable trait in aquarium trade. max size 16in--40cm



Banded Jeweled Cichlid
"5 star General"

Hemichromis elongatus
bronze scales and five dark bands across the body. red color near gills. More elongated body than other cichlids. Juveniles may have less distinct coloration. max size approx 3 inches--7.9cm

Different species Introduced to Hawai'i through the aquarium and fish farming industries as early as 1950s (mozambique) through 1980s(Banded Jewel). Many were not observed in the wild until 1990s. Most species NOT widely distributed across all islands, highest abundance on O'ahu and Kaua'i. Mozambique is documented on all islands but Lana'i. Species have broad ranging distribution within a single stream with Mozambique able to withstand higher salinity occupying lowest elevation estuary environments, and banded jewel or convicts having highest elevation reach. Cichlids are aggressive predators that feed on small fish, insects, and shrimps indiscriminately. Black Chins can greatly reduce aquatic vegetation present in a habitat which can deter native birds from settling where these tilapia are present. (McGuire 2006) Cichlids can also cause decline of indigenous fish species due to reduction in food sources and alteration of habitat (USFWS, 2018) Certain species have been studied and shown to serve as a vector of disease.

problems they cause :