

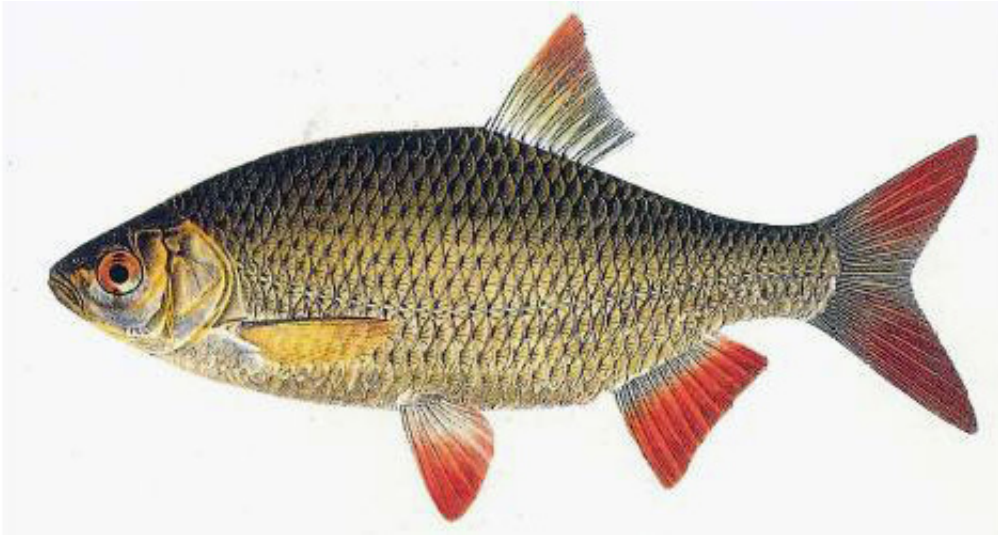
Rudd

Scardinius erythrophthalmus (Linnaeus, 1758)

syn. *Scardinius erithrophthalmus*, *S. varius*, *Cyprinus erythrophthalmus*, *Leuciscus erythrophthalmus*, *Rutilus erythrophthalmus*

ALBERTA REGULATION:
FISHERIES ACT

Last Updated: February 2018



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Overview:

The rudd is a ray-finned fish of the carp family. They are native to many river basins of Eurasia; the Aral, White and Black sea basins, and the Ural and Eya drainages.³ Rudd are a freshwater species but can tolerate brackish waters.³

The introduction of rudd to North America is thought to have occurred on two separate occasions, the late 1800's and again around 1970.⁴ Rudd became popular as a bait fish on the second introduction and was commercially cultured by the 1980's. This resulted in wide introduction via bait bucket dumping and escapes from aquaculture facilities.⁴ In some countries it has been introduced both as a food source and for sportfishing.¹ By 1997, rudd were present in Lakes Ontario and Erie, and the St. Lawrence River in Ontario.⁵

Unlike most native fishes, rudd are omnivorous and can shift its diet from aquatic organisms to plants. It will feed on phytoplankton, insects, snails, aquatic crustaceans, and occasionally fish eggs, but primarily it feeds on aquatic vegetation.¹ Selective feeding on aquatic vegetation by rudd can modify plant communities. Aquatic plants are water 'cleaners' and waters overgrazed by rudd become turbid.⁴

Climate matching for *S.erythrophthalmus* establishment is high for the central U.S., from the Rockies East to the maritimes.⁴ Rudd can be found at elevations of 1829 m above sealevel.¹

Rudd may be confused with the native golden shiner (*Notemigonus crysoleucas*); however, the golden shiner has yellow-green fins and their larvae do not possess an adhesive

organ¹, compared to red fins on the rudd and adhesive larvae.⁵ In a laboratory setting rudd readily hybridized with golden shiner.⁴

As of January 1, 2016, the possession, sale, or transport of this species in Alberta is illegal under the Fisheries Act.

Habitat:

Rudd can inhabit almost any freshwater lake, reservoir, ponds, large rivers, streams, and also low-nutrient subalpine lakes.¹ In streams and rivers it prefers slow pools and backwaters. It prefers waters with large beds of aquatic plants for food and cover. It can tolerate brackish waters.¹ Water temperature range 2 to 22°C and pH 7 to 7.5.³



Rudd (continued)

Identification:

Rudd have a deep, laterally compressed body, which is golden-olive on the back, then paling to silver-olive on the sides and silver-white on the belly. All of the fins are bright orange-red and the eyes pink to gold.¹ The sides of breeding males are brassy coloured progressing to bright orange along the mid-back.¹ The dorsal edge of the head profile is straight or slightly convex and the snout points forward with the tip slightly above the mid-eye level.³ The lower jaw hinge sits just in front of the eye. Mouth is distinct with a protruding lower lip and strongly serrated pharyngeal teeth (throat teeth). When viewed from the side, the eye is close to the top of the head profile and the back is not humped behind the nape.³

The dorsal fin has 3 spines and 8-9 soft rays, the anal fin 3 spines and 8-12 soft rays, and the caudal fin 81-19 rays. There are 39-42 scales along the lateral line.³ Scales are robustly marked and have a crosshatch-like pattern. Average total length is 20 cm³ but can be 10 to 30 cm.⁵ The maximum reported length is 51 cm, maximum weight 2.1 kg and maximum age 19 years.³

Ecology:

Age at maturity for *S. erythrophthalmus* varies with latitude but males reach maturity at ages 1 to 4 years and females at age 2 to 5. Spawning occurs over spring and summer when water temperatures rise above 16°C.¹ Males gather at spawning grounds and drive females into dense vegetation, often splashing, and fertilization is

external.³ Females will produce one or two batches of eggs at 108,000 to 211,000 eggs per kg of body mass. Eggs are very sticky, 1-1.4 mm in diameter, translucent pale yellow to opaque grey-green¹, and attached to vegetation.³ Incubation varies with water temperature - 4-5 days at 17.5 to 21.5°C to 19-20 days at 10.5 to 11.5°C.¹ Hatched larvae attach to vegetation using adhesive organs and remain there several days while the yolk sac is absorbed. Larvae measure 4.5 to 5.9 mm in total length.¹

Larval rudd feed on algae and some phytoplankton and later larval stages on aquatic invertebrates. Young rudd consume aquatic crustaceans, snails and insects. Adults feed mainly on aquatic vegetation, but also insects, snails, crustaceans and occasionally fish eggs.¹

Economic Impacts:

Rudd compete directly with native fish for resources and habitat.¹ Competition with sportfish and predation of sportfish eggs could have impacts on recreation and tourism.

Environmental Impacts:

Rudd compete directly with native fish for invertebrate food sources.¹ Grazing of aquatic vegetation endangers rare and at risk plants¹ as well as degrades spawning and nursery habitat for native fishes.⁵ Predation of native fish eggs by rudd would negatively impact populations. Hybridization with native golden shiner would negatively impact the genetics of that species.¹

Sociological Impacts:

The transformation of native aquatic communities results in the intrinsic loss of natural capital and enjoyment of natural areas.

Prevention:

Learn how to identify rudd and how to prevent spread. Do not use rudd for bait. Never empty your aquarium into natural water bodies. Inspect boats, trailers and recreational equipment upon leaving a waterbody and remove all mud or vegetation - eggs are very adhesive and could be transported on vegetation.

Control:

Currently, there are no widely established control options for rudd other than preventing introduction. One study identified fine-mesh monofilament gill netting as a viable but short term control option.² If caught, common rudd should be killed and not released. Report any sightings.



Rudd (continued)



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U.S. Geological Survey, U.S. Geological Survey, Bugwood.org

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