

REDSIDE SHINER (*Richardsonius balteatus*)

Ecology and Life History

Redside shiners range throughout most of British Columbia, into to Washington and Oregon, and occur primarily west of the Rocky Mountains (Scott and Crossman, 1973). Redside shiners are a schooling fish, often numbering in the thousands. Smaller immature individuals typically reside near the surface and shore, while larger, more mature individuals reside in deep water. Redside shiners congregate around areas of rooted vegetation, and can be found on sandy, cobble, gravel, boulder or bedrock shorelines (Scott and Crossman, 1973; Roberge et al, 2002).

Redside shiners are active foragers, consuming mainly insects, and other small prey items such as molluscs, algae, and terrestrial insects (Scott and Crossman, 1973). Adults likely consume larger prey, possibly even young of the year fish (Scott and Crossman, 1973). Eggs are also a prey item for redside shiners (Scott and Crossman, 1973).

Redside shiners spawn in the early springtime, usually between late April and July (Scott and Crossman, 1973) when water temperatures reach 10°C (Coker et al, 2001). Males are the first to arrive on breeding grounds, and no nest is built (Scott and Crossman, 1973; Coker et al, 2001). Females move into spawning areas and spawning takes place in large groups (30-40 individuals). Pale yellow, adhesive eggs are deposited onto gravel or vegetation (Scott and Crossman, 1973). Males may court multiple females, and females typically release between 10 to 20 eggs per spawning bout, with up to 3600 over the season (Scott and Crossman, 1973). Eggs hatch between 3 to 7 days at 21 to 23 °C (Scott and Crossman, 1973; Coker et al., 2001).

Okanagan Lake System

Redside shiners were sampled mostly using beach seines, although a few individuals were sampled using gill nets. Redside shiners consisted of 60.0, 52.0, and 30.7% of the community sampled in the spring, summer, and fall, respectively. Adult redside shiners were generally abundant along most shoreline areas. Juvenile and YOY redside shiners were common within most sites, but a slightly higher prevalence was encountered in the Kelowna Yacht Club and in Sutherland Bay. Daytime and nighttime snorkelling indicated that these fish appear to congregate around structure, whether it was artificial (e.g., docks) or natural (bands of milfoil), as expected.

Spawning areas were identified during the survey, and it is probable that these fish will utilize any shoreline as long as cobbles, gravel, or vegetation are present for egg deposition. Redside shiners most likely began spawning before the onset of sampling because YOY individuals were found during the spring session. However, the spawning season was still occurring during the spring sampling and ripe females were sampled. Thus, spawning in Okanagan Lake likely occurs from May through June, possibly into early August as previously documented. Due to the wide range of habitats where YOY and adult fish were sampled, spawning and rearing habitat does not appear to be limiting factor for this species. In general, it is believed that these fish are opportunistic, and occupy a wide range in habitats.

Redside shiners are believed to be an important forage fish in this system and were common prey items of rainbow trout and northern pikeminnows. Also, common mergansers (*Mergus merganser*) and Great Blue Herons (*Ardea herodias*) are known prey on these fish (Scott and Crossman, 1973), indicating that they are an

important component of the Okanagan Lake fish community for a variety of reasons. However, due to their abundance and general success, with few limiting factors, they are not considered to be species of significance along the Kelowna waterfront at this time.

A parasite, believed to be a *Ligula* sp. (likely *L. intestinalis*), was found in some individuals. There appeared to be low prevalence (<1%) of a parasitic infection. When infected, there is an obvious distension of the fish's abdomen. This parasite species has a complex life cycle, with three hosts, including fish eating birds (most likely Common Mergansers, Blue Herons, or grebes), crustaceans (a copepod such as Cyclops), and cyprinids. This parasite may also infect northern pikeminnows (*Ptychocheilus oregonensis*) or peamouth chub in the system.

References

Coker, G.A., C.B. Portt, and C.K. Minns. 2001. Morphological and Ecological Characteristics of Canadian Freshwater Fish. Fisheries and Oceans Canada. Great Lakes Laboratory for Fisheries and Aquatic Sciences. Canadian Manuscript Report of Fisheries and Aquatic Sciences #2554. January 2001.

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