FAUNA

FRESHWATER FISHES OF SOUTH-WESTERN AUSTRALIA

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SOUTH-WESTERN Australia is home to a unique assemblage of freshwater fishes, with eight of the ten species being endemic to the region. Similarly, all of the freshwater crayfishes of the region are endemic. Although few in number, the species of the south-west are important in the ecology of rivers, with the diets of most of the region's fishes being dominated by terrestrial insects, but most also include nuisance species such as mosquito and midge larvae, pupae and adults in their diet. Freshwater crayfish are similarly important in that they are important in the structure and functioning of aquatic food webs as they can feed on a variety of food items, particularly detritus.

Unfortunately, due largely to loss of habitat, but also from predation by, and competition with, feral fishes (of which there are ten in WA) populations are rapidly declining. For example, many native fishes have been lost from large parts of salinised catchments such as the Swan-Avon, Murray, Blackwood, and they have also been decimated from many dams as a result of predation by redfin perch (*Perca fluviatilis*), a species that also preys heavily on marron. The 'dewatering' of the Swan Coastal Plain with drainage canals has also led to most of the original wetlands being lost.

The south-west region can be defined as including all waters between the Arrowsmith River near Dongara and roughly the Thomas River near Esperance. While the south-west region shares no fish species with the Pilbara or Kimberley, it does have two species in common with south-eastern Australia, including Tasmania, these being the trout minnow (*Galaxias truttaceus*) (Figure 1) and the spotted minnow or common jollytail (*Galaxias maculatus*) (Figure 2).

The trout minnow is the rarest freshwater fish in W.A. being restricted to the Two People's Bay area east of Albany where the State's first vertical slot fishway has recently been constructed to help the species negotiate a small weir.

The spotted minnow is common between Two People's Bay and the Thomas River and is the only (native) freshwater fish found in the rivers east of the Pallinup River. The spotted minnow is extremely tolerant of salinity, with salinities of around 45-46 parts per thousand (ppt) being their upper limit (N.B. seawater = 35 ppt). Their ability to tolerate high concentrations of salt, together with their small size (max. 120 mm total length) makes them an ideal fish for farm dams that may be salt-affected, and, like other native fishes, are good controllers of mosquitoes and midges.

Fig. 1 *Trout Minnow*

Fig. 2 *Spotted Minnow*

Fig. 3 *Mud Minnow*

Fig. 4 *Western Pygmy Perch*

A number of others, such as the black-stripe minnow, mud minnow (Figure 3) and Balston's pygmy perch are rare and have remnant populations scattered around the south-west. These species are likely to disappear from entire catchments, resulting in the potential loss of genetically distinct populations.

In conjunction with *Land for Wildlife*, the Department of Fisheries WA, the Water & Rivers Commission, the Water Corporation and the wider community, the Centre for Fish & Fisheries Research at Murdoch University has sought funding in order to promote the use of native fishes in farm dams and in new developments (artificial lakes), and to also restock areas from where species have been lost. The idea is to culture fish from specific catchments so that stocks are not translocated from outside catchments. For example, properties and lakes etc within the Swan-Avon catchment will only be stocked with native fish sourced from that catchment (e.g. western pygmy perch [Figure 4], nightfish and western minnows). There will also be a major focus on re-establishing populations of rarer species, and where possible, the eradication of feral fishes. Other aims are to determine habitat associations and environmental tolerances of the region's unique fishes.

Anyone interested in being involved with the project, particularly in the provision of suitable waterbodies, should contact Avril Baxter (avrilb@calm.wa.gov.au or tel. 9881 9218) from *Land for Wildlife*.

Dave Morgan is a Research Fellow at the Centre for Fish and Fisheries Research at Murdoch University and has worked extensively on the biology and distribution of freshwater fishes right throughout Western Australia. Stephen Beatty is completing his PhD at the Centre examining the biology of native freshwater crayfish and impacts of introduced fish. They can be contacted on 9360 6322 or by email on dmorgan@murdoch.edu.au, sbeatty@murdoch.edu.au.