

RECOMMENDATION

NOTOPALA SUBLINEATA – (RIVER SNAIL)

The Fisheries Scientific Committee, established under Part 7A of the *Fisheries Management Act 1994* (the Act), has made a recommendation to support a nomination to list the freshwater snail, *Notopala sublineata* as an ENDANGERED SPECIES in Part 1 of Schedule 4 of the Act.

Listing of Endangered Species is provided for by Part 7A, Division 2 of the Act.

The Fisheries Scientific Committee has found that:

1. *Notopala sublineata* Conrad, 1850 and *N. hanleyi* Frauenfeld, 1864 of the family Viviparidae are considered to be subspecies of a single species. *N. sublineata*, the earliest available name, is the species-level name. This species is one of 18 in the genus *Notopala* found in Australia, mostly in northern Australia.
2. *Notopala sublineata* was once common and widely distributed in the Murray-Darling system. Australian Museum collections from around Australia show 184 historical records of the species. *N. sublineata hanleyi* (Frauenfeld, 1864) is restricted to the Murray and Murrumbidgee drainages, while *N. sublineata sublineata* is restricted to the Darling and its tributaries.
3. The family Viviparidae is characterised by females brooding their young to a crawl away stage, so *N. sublineata* has limited dispersal abilities. This species grazes on the bacterial biofilms that occur on hard substrates in free flowing bodies of water, such as rivers. It cannot survive on algae.
4. *Notopala sublineata* populations rapidly declined in the 1960-70s and by the 1980s were reduced to a handful of locations. These declines may be associated with river flow management (principally weir building). *N. sublineata* is apparently extinct throughout its natural range, with no verifiable records of living specimens having been found in the last decade. Several populations have been recorded as surviving in irrigation pipelines in the Murray and Darling systems, but no recent surveys have been conducted.
5. *Notopala sublineata* is listed by the IUCN as endangered but is not yet listed by any Australian State or by the Commonwealth.

The causes of decline in *Notopala sublineata* may include:

- Modifications to habitat associated with river flow management (principally weir building).

- Changes to benthic biofilms from bacterial to algal-based substrates as a result of hydrological modifications along the Murray River. *N. sublineata* is not able to effectively assimilate algal biofilms and essentially starves to death.
 - Deliberate removal (flushing with chemicals) of the species from artificial habitats (pipelines) on the Murray River. The species has no opportunity to reinvade its previous habitat because the substrata remain algal associations rather than bacterial associations found in free-flowing rivers.
7. In light of 4, 5 and 6 above, the Fisheries Scientific Committee is of the opinion that the numbers of *Notopala sublineata* have been reduced to such a critical level that it is in immediate danger of extinction in NSW. Therefore, the species qualifies for inclusion in Part 1 of Schedule 4 of the *Fisheries Management Act 1994* as an ENDANGERED SPECIES.

Dr Andrew Sanger
Chairperson
Fisheries Scientific Committee