

## RECOMMENDATION

### *ARCHAEOPHYA ADAMSI* – (ADAMS EMERALD DRAGONFLY)

The Fisheries Scientific Committee, established under Part 7A of the *Fisheries Management Act 1994* (the Act), has made a recommendation to list *Archaeophya adamsi*, Adams emerald dragonfly, as a VULNERABLE SPECIES in Schedule 5 of the Act. The listing of Vulnerable Species is provided for by Part 7A, Division 2 of the Act.

The Fisheries Scientific Committee has found that:

1. The dragonfly *Archaeophya adamsi* Fraser, 1959 (family Gomphomacromiidae) is the only NSW species of this genus and family, and the majority of its lifecycle is aquatic. The aquatic larva of *A. adamsi* cannot be confused with any other dragonfly species owing to a large bilobed frontal plate on its head. The only other species in the genus occurs in Queensland.
2. *Archaeophya adamsi* has been collected from only 4 localities in NSW: Somersby Falls and Floods Creek in Brisbane Waters National Park near Gosford; Tunks Creek near Berowra and Hornsby; Bedford Creek in the Lower Blue Mountains; and Hungry Way Creek in Wollemi National Park (where it is known only from exuviae or shed larval skins). The species has not been found elsewhere in the Hawkesbury watershed or in the Sydney region, despite active collecting over the last 30 years.
3. Specimens of *A. adamsi* are extremely rare, being only found in small streams, with occasional finds of single aquatic larvae or exuviae. Prior to 1998, only 5 adult specimens were known, indicating that this species has extremely low local population sizes.
4. The larvae of *A. adamsi* grow to body lengths of approximately 23mm and may have an aquatic life span of more than 7 years which is the vast majority of its total life span. Low population sizes and a long larval period indicate an extremely low rate of natural recruitment and therefore slow recovery from population declines.
5. Two localities of *A. adamsi* may be negatively impacted by human activities. Although the Gosford sites are in Brisbane Waters National Park, agricultural development in the headwaters of Floods Creek poses a threat to water quality in the lower catchment. The Berowra site is near residential development, and a population decline is indicated by the failure to find additional specimens from Berowra Creek. Therefore, *A. adamsi* may suffer further decline or local extinction in the coastal region.

6. In light of points 2, 3, 4, and 5, the Fisheries Scientific Committee has determined that *Archaeophya adamsi* is eligible for listing as a VULNERABLE SPECIES in Schedule 5 of the Act, and accordingly that the Schedule be amended by inclusion of this species.

Dr Andrew Sanger  
Chairperson  
Fisheries Scientific Committee