Southern Corroboree Frog

***Pseudophryne corroboree* (Moore, 1953)**

Other common name Corroboree Frog

Conservation status

The Southern Corroboree Frog is listed as an **Endangered Species** on Schedule 1 of the New South Wales *Threatened Species Conservation Act, 1995* (TSC Act) and has also been nominated for listing as an **Endangered Species** under Schedule 1 of the Commonwealth *Endangered Species Protection Act, 1992.*

Description (summarised from Osborne 1991)

Body Length
25 – 30mm (Adult)

The Southern Corroboree Frog can be readily distinguished from other frogs by its bold yellow and black colouration. The yellow stripes of the Southern Corroboree Frog are broad and unbroken whereas the Northern Corroboree Frog, *Pseudophryne pengilleyi*, has fewer, narrower broken yellow or lime-green stripes. Both the male and female of the Southern Corroboree Frog have the same colouration with the female being the larger of the two.

The call of the Southern Corroboree Frog is similar to that of other *Pseudophryne* spp. and has been described by Cogger (1992) as being a short, harsh squelch and by Osborne (1991) as a nasal grating *Ah-rurkk…urkk…urkk.*

The eggs of the Southern Corroboree Frog are large with tough transparent capsules and measure approximately 3.4mm in diameter, and up to 8.0mm when the capsule is hydrated. When hatched the tadpoles are generally well advanced and measure approximately 15mm in length.

Distribution

The Southern Corroboree Frog has an extremely limited geographic distribution of about 400 km^2, confined to the Snowy Mountains within Kosciuszko NP from Smiggin Holes in the south, northwards to the Maragle Range west of Cabramurra (Osborne 1999). The species occupies a relatively narrow altitudinal strip between approximately 1300 and 1760m (Osborne 1989).

Despite its small geographic range, the species was once relatively abundant, occurring in large numbers at breeding sites (Osborne 1993). However, over the past ten years, the Southern Corroboree Frog has suffered a

Southern Corroboree Frog

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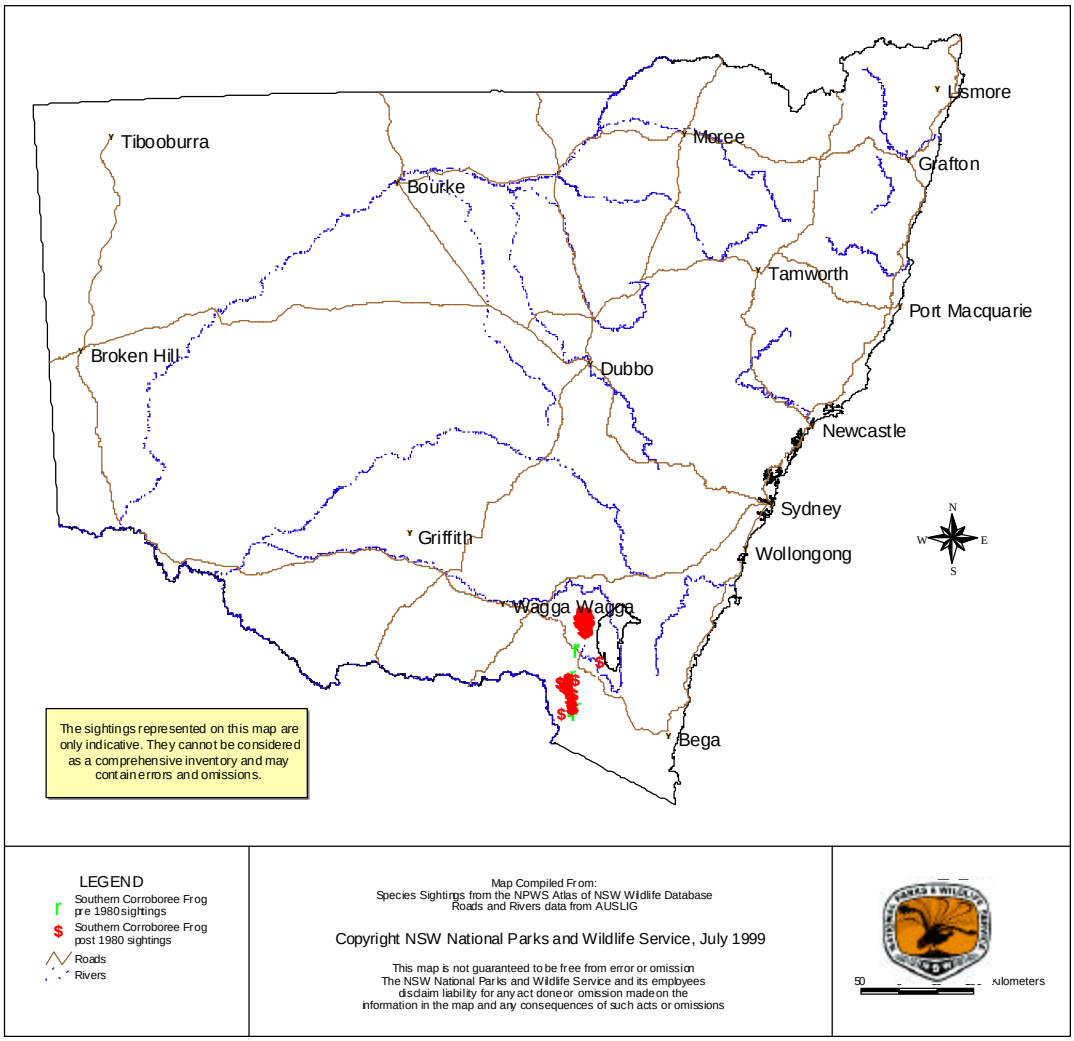

NPWS records of the Southern Corroboree Frog in NSW

substantial decline in abundance along with a contraction of its geographic range. Monitoring of sites throughout the species range has revealed populations having progressively disappeared from approximately 68% of previously known inhabited sites (Osborne 1989; Osborne 1999). The draft National Recovery Plan states that at all but five of the remaining breeding populations, the numbers of calling males has declined to less than ten.

Recorded occurrences in conservation reserves

Kosciuszko NP (NPWS 1999).

Habitat

This species occurs at high altitudes (1300-1760m) in subalpine and montane areas that are subject to a winter covering of snow. It utilises two distinct habitat types: a breeding site occupied for a few weeks in mid summer by adults and for a longer period by tadpoles and juveniles; and an adjacent non-breeding habitat used by subadults and adults (Osborne 1999). The breeding sites are typically temporary pools or seepages within bogs, short, wet heath or wet tussock grassland.

Breeding sites occur on granitic and volcanic substrates. Porous rock types, such as shale and limestone are generally avoided. Breeding pools are characteristically shallow and have relatively large surface areas, low water flow rates and have a long duration (Osborne 1990).

Non-breeding habitat is subalpine forest, woodland and heath adjacent to the breeding area (Osborne 1999). Litter, logs and dense ground cover in the understorey of snow gum woodland provides over-wintering habitat (Pengilley 1966).

Ecology

The diet of the Southern Corroboree Frog is thought to consist of ants and other small invertebrates (Pengilley 1971).

Unlike most frog species, the species lays its eggs in a terrestrial nest in moss or other soft vegetation which becomes flooded following winter rains (Pengilley 1966; Tyler 1997). The breeding season is from January to March with embryos hatching during periods of high rainfall or snow melt from May to August (Osborne 1999; Pengilley 1966). Juveniles remain near breeding ponds in moist environments for several months while adults disperse up to 300m into the surrounding woodland and dry heath after the breeding season (Pengilley 1966; Osborne 1989).

The Southern Corroboree Frog has a very small clutch size, each female breeds only once each season, and the tadpoles are slow growing (Osborne 1999). The specialised nature of the life history of the frog may increase its susceptibility to altered climatic conditions such as drought (Osborne 1993).

Threats (summarised from Osborne 1991; Alexiou 1983; Blaustein *et al*. 1994; Osborne & Davis 1997; Tyler 1997)

- Illegal collecting could potentially have direct impacts on individuals and indirectly by physically disturbing the vegetation and exposing clutches of eggs
- Pigs damage habitat by disturbing vegetation and soil
- Global warming and increased ultraviolet radiation has been implicated in frog declines at high altitudes
- Declining winter snow and precipitation causing the eggs and tadpoles to be exposed to sub-zero temperatures
- Erosion and subsequent siltation from walking tracks, roads and resort development has historically polluted and destroyed breeding sites
- Livestock trampling and grazing has damaged habitat by destroying vegetation
- Prescribed burning of understorey litter and grass cover during autumn has directly and indirectly impacted of the species by reducing shelter and leaving populations vulnerable to dehydration and freezing

Management

- Undertake a distributional survey to determine whether the species is declining throughout its range and causal factors of its decline and carry out long-term monitoring of present and past population sites
- Analyse key habitat variables consistent with successful populations and investigate long term variation in climatic factors influencing distribution and abundance
- Determine the most sensitive life history stage ie. where the species suffers the highest mortality levels, including an analysis of age structure of adults within populations before and after decline
- Undertake pathological studies to determine if disease has a significant effect on the species
- Determine sensitivity of the species to UV-B radiation
- Implement captive rearing and translocation to potential habitat or to enhance existing populations
- Manipulate breeding pools to enhance habitat and protect existing and potential breeding and non-breeding habitat
- Control introduced pigs
- Encourage community involvement and raise community awareness

Recovery plans

NSW NPWS Southern Direcorate is preparing a recovery plan for this species.

Southern Corroboree Frog with eggs

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