Threatened Species of the Northern Territory

GOVE CROW
Euploea alcathoe enastri

**Description**

The Gove crow is a large, black-brown butterfly with variable white spots near the margins of the wings. The wingspan is about 70 mm. The male is velvet-black above and dark black-brown beneath. The female is paler chocolate-brown.

**Distribution**

The Gove Crow is a Northern Territory (NT) endemic, restricted to North-Eastern Arnhem Land. It was first discovered at Rocky Bay near Yirrkala in 1988 by G. Martin, and was subsequently recorded at three other locations, including Mosquito Creek Port Bradshaw, near Mount Bonner, and the upper Goromuru River (Fenner 1991, 1992). Surveys carried out during 2006–2008 by Braby (2010) confirm that the subspecies has a limited geographical range (extent of occurrence approximately 6,700 km²) within which it is recorded from 21 sites clustered within eleven locations or subpopulations. Most sites comprise discrete habitat patches that are small in area (<10 ha) within which adults are localised and occur in relatively low abundance.

**Conservation reserves where reported:**
Nanydjaka Indigenous Protected Area.

**Ecology**

Larval stages of *E. a. enastri* are found associated with several species of vines in the Family Apocynaceae, and the preferred larval food plant appears to be *Parsonsia alboflavescens* (Braby 2009). This species occurs in patches of mixed paperbark tall open forest with rainforest elements in the understorey and rainforest edge (i.e. the ecotone between evergreen monsoon vine-forest and eucalypt/paperbark woodland). These wet monsoon forest patches are always associated with permanent creeks or perennial groundwater seepages or springs that form swamplands, usually along drainage.

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lines or flood plains in coastal or near coastal lowland areas.

Males are usually observed within small glades inside the forest or near its boundary with the surrounding savanna woodland. Females are more commonly observed in tall paperbark swampland at the edge of the rainforest (Fenner 1991; L. Wilson pers. comm.).

The subspecies’ critical breeding habitats are subject to natural disturbance by both fire and flood, and occasionally cyclonic events. As a consequence, an optimal balance in disturbance regime is probably required to sustain breeding populations.

**Conservation assessment**

Surveys carried out during 2006–2008 by Braby (2010) indicate that the subspecies has a limited geographical range (extent of occurrence approximately 6,700 km²) within which it is recorded from eleven locations or subpopulations embracing a total of 21 sites. Most sites comprise discrete habitat patches that are small in area (<10 ha) within which adults are localised and occur in relatively low abundance.

Although the butterfly has a limited spatial distribution and is ecologically specialised, there is no evidence of decline, either observed or inferred. Thus, the conservation status of this species approaches Vulnerable (under criteria B1+B2) based on:

- Extent of occurrence <20,000 km²; and
- Area of occupancy <2000 km².

However the species is known from more than ten locations, is not severely fragmented and does not experience extreme fluctuations in numbers or distribution. As a consequence, the species is listed in the NT as Near Threatened.

**Threatening processes**

Braby (2010) identified four threats to the habitat of this subspecies. Two major threats operating at a site level are: (1) habitat modification through altered fire regimes; and (2) habitat disturbance by feral animals (buffalo, pig). At the landscape scale, potential threats identified are: (3) habitat loss through invasive species (grassy weeds, yellow crazy ants); and (4) global climate change.

Changes in the frequency, intensity and patchiness of fire in the landscape on the Gove Peninsula may ultimately lead to the demise of the monsoon rainforest patches, the critical habitat of the Gove Crow. Such changes may be exacerbated by the fuel loads supported by exotic invasive grasses such as Mission Grass, which has become established in the town of Nhulunbuy. This grass increases the fuel load normally found in native savannas by 3-5 fold and, as a perennial, pushes the burning season later into the drier, windier time of the year (Panton 1993). Mission Grass carries destructive hot fires into the edges of monsoon rainforest patches, leading to their shrinkage and eventual disappearance. If the rapid spread around Darwin (Kean and Price 2003) is repeated around Nhulunbuy, the resultant increase in intensity of fires on the Gove Peninsula may cause the disappearance of many wet rainforest patches, including those on which the Gove Crow depends.

There is widespread concern that traditional knowledge and land management practices amongst the Yolngu Aboriginal community in North-Eastern Arnhem Land are not being passed on from elders to the next generation. This knowledge and management includes an understanding of traditional burning practices – the frequency and seasonal timing of patch burns. It is important that traditional land
management practices are maintained on Gove Peninsula: incorrect (excessive) burning will ultimately reduce the extent of the monsoon rainforest patches.

In addition, overland access to Nhulunbuy has been recently upgraded, as has the local network of roads across the Peninsula. The more intensive land use and greater ease of access within this region has led to an increase in the frequency and extent of fires. An increase in fire associated with the road in Central Arnhem Land has already been implicated in the disappearance of patches of monsoon rainforest similar to that used by the Gove Crow (W. Panton pers. comm.).

Feral animals, particularly Water Buffalo, *Bubalus bubalis*, and to a lesser extent Feral Pig, *Sus scrofa*, occur on the Gove Peninsula. These animals are known to damage or degrade monsoon rainforest patches through their effects on understorey plants, and are thus a potential threat to the integrity of the habitat of the Gove Crow, especially the swamplands adjacent to the monsoon rainforest. The population size and density of buffalo and pigs currently appears to be relatively low, but if increased this could have a negative impact in the long-term.

**Conservation objectives and management**

There is a national recovery plan for this butterfly (Braby 2006). Many of the actions in this plan have been undertaken collaboratively between scientists of the Department of Land Resource Management and Indigenous Rangers from Dhimurru Land Management Aboriginal Corporation.

Research priorities are to:

i. investigate the basic biology and ecology of the species to determine population attributes such as longevity, movement patterns and dry-season behaviour; breeding and aggregation sites can then be identified and protected; and

ii. maintain a long-term monitoring program at key sites to detect possible changes in breeding range or abundance, and to measure the impacts of threatening processes.

Management priorities are to:

i. control and eradicate Mission Grass, and maintain vigilance against other grassy weeds that have the potential to become serious threats on the Gove Peninsula;

ii. maintain appropriate fire management practices;

iii. develop and maintain a survey, monitoring and eradication program for the Yellow Crazy Ant; and

iv. develop a feral animal survey and control strategy for buffalo and pigs.

The entire distribution of the subspecies is on Indigenous-owned lands. Any long-term conservation management plan of the butterfly and its habitat will largely depend on the cooperation of traditional landowners and involvement of local indigenous ranger groups. Consequently, any management plan must incorporate development and involvement of those local indigenous rangers, education and community awareness, as well as the research and management priorities listed above (Braby 2010).
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References


