



Kārearea - Bird of the Year

words and images: dr donna falconer



The kārearea (New Zealand falcon) is the current Forest & Bird 'Bird of the Year' for 2013. Rarer than the kiwi, kārearea are our only endemic raptor, and despite gracing the \$20 note, remains a little-known bird. Kārearea are listed as 'near threatened' by the Department of Conservation (DOC) and as such are fully protected.

ONE WORD THAT SUMS up the kārearea is 'attitude'. The New Zealand falcon is renowned for being completely fearless, as demonstrated by a female whose legendary nest defense antics involved persistently attacking an Iroquois helicopter during a SAR exercise near Aoraki/Mt Cook a few years ago. The helicopter had to withdraw from the area being defended. Now that is serious attitude!

Kārearea (*Falco novaeseelandiae*) can be subdivided into three distinguishable subtypes: the 'bush' falcon occurs in the lower half of the North Island, Marlborough and the West Coast; the 'southern' falcon in Fiordland, Stewart Island and the sub-Antarctic Islands, whilst the 'eastern' falcon occupies the bulk of the South Island (east of the main divide) and is the most common of the three subtypes.

The kārearea occupies a home territory all year round, unlike many 'migratory' falcon species worldwide that have summer and winter territories many thousands of kilometers apart. Kārearea numbers in the wild are unclear, and because there are many more endangered species, they remain an under-researched bird.

Kārearea are generally solitary birds, only pairing up in late winter for the breeding season. Breeding pairs are thought to mate for life and will typically choose a new nesting site each season in an area specifically designated for nesting, and distinct from their much larger territories. Kārearea nests are referred to as 'scrapes' which are literally a scrape in the ground, generally under a rock bivy and usually lined with grasses. As with all ground-nesting birds, eggs and chicks are at constant risk from predators such as feral cats and mustelids (weasels, stoats and ferrets).

During the courtship period in late winter to early spring, it is most crucial not to disturb breeding pairs, as this is when they establish their much-needed pair bonds and select scrape sites. During this phase they frequently put on spectacular flying displays as part of the courtship ritual.

Due to its rich biodiversity, the matagouri scrubland of the South Island high country is prime kārearea habitat. Kārearea are highly adaptable however, with most of the major pine plantations throughout New Zealand now known to contain kārearea. In Canterbury, habitat loss through intensive pastoralism has resulted in kārearea being relegated to the more rugged gorge-run country of the foothills, and other similarly rough blocks that still hold decent stands of shrub habitat.



Top: The much smaller male is dwarfed by his female mate as they launch into an attack.

Above: Donna gathering location data at the end of the nesting season.

Opposite page: Top left: Female (lower) and hovering male (above) in nest defence mode during a scrape visit.

Below: The 'Whale Stream Bomb Squad' in action.

Although habitat loss is often touted as the main threat to kārearea, falcons internationally are well known for their adaptability and propensity to nest in artificial structures in urban areas. A Google search for falcon cams will reveal the multitudes of live-streamed nest cams from high-rise buildings in many cities worldwide. During the nesting season these have cult followings.



Left: Typical high-country Kārearea 'scrape' under a rock lined with plucked grass.

Right: A very special four chick clutch - all of whom thrived and fledged.

Peregrine Wines Co-owner Greg Hay's interest in the New Zealand falcon is immediately apparent, the winery being named after these special endemic raptors. The Central Otago winery is committed to enhancing the environment with both their organically certified estates and winery, and their 'hands-on' involvement in the conservation of New Zealand's native birds.



"The New Zealand falcon, is sadly one of our rarest birds, having only an estimated six per cent of the number of Kiwis still alive, itself an endangered bird. The kārearea now sits at the pinnacle of the avian 'pecking' order, and yet it is still somewhat of an enigma in that not a lot of New Zealanders have seen one, let alone watched them display their incredible aerial firepower," Greg explains. "That is part of the shame and concern ... unseen is unnoticed and untended. Yet they are 'our' falcon, found nowhere else on the earth, and for that reason alone we need to ensure their survival and rightful place in our skies. Their current plight was not of their doing!"

Arguably, a more significant threat than habitat loss is the issue of toxins. Whilst kārearea numbers are robust in some areas, they are constantly under threat in areas where '1080' and Pindone programmes are undertaken. Kārearea do eat carrion and therefore are killed by secondary poisoning.

Given that pest control, particularly for rabbits and possums, is deemed essential over significant tracts of prime kārearea habitat, this presents an ongoing challenge for our kārearea populations, as well as DOC, the Animal Health Board and station owners, in managing the need for pest control without wiping out our kārearea. Furthermore, baits for rodent control and even Feratox for possum control are potentially problematic as further sources of toxic prey. Effectively mitigating the adverse impacts of such programmes on kārearea is impossible without having a basic understanding of the habits of our kārearea in these environments.

However, highly modified agricultural environments are not always bad for the kārearea, as indicated by the presence of an adult male bird 'Little Ben' at the recently converted 'Little Ben' dairy farm near Omarama. Little Ben has been lured in by the influx of pest birds attracted to the grain being fed to the cows. He is frequently observed perching on the tallest grain silo and even in the actual dairy shed. Although his mate 'Mrs Ben' has just started putting in an appearance at the farm, it is likely they will choose a traditional scrape site on the nearby range flank.

Vineyards are of course a better known example of a modified land-use that provides a potentially significant ecosystem capable of holding kārearea, and most importantly keeping them safe from threats.

Historically man has always been the greatest threat to falcons with the widespread use of the pesticide DDT almost causing the extinction of many falcon species worldwide during the 1960s-1970s. It took many years before it was discovered that DDT was causing calcium depletion in egg shells, resulting



Female nestling - almost ready to fledge.

in catastrophic nesting failures due to egg breakage.

In England during World War II a destruction order was put on peregrine falcons as they were classified as a threat to national security. The problem ... they were intercepting and dispatching the carrier pigeons being used to deliver vital information from occupied Europe back to England. Unfortunately this old intolerance of falcons has probably been an underlying factor in the shootings of falcons that still occurs.

Another significant man-made threat to the kārearea is that of electrocution, as they naturally are drawn to perching on any structures that offer a good lookout.

Falconry (hunting with a trained bird of prey) is widely practiced in many countries and was listed as an 'Intangible Cultural Heritage of Humanity' by UNESCO in 2010. In New Zealand, falconry has only recently been legalised (2011) but only for the Australasian harrier (hawk) and even then, only with a falconry permit issued by DOC.

The use of motion-sensor trail cameras in nesting scrapes provides an up-close and personal glimpse into what goes on during the egg brooding and chick raising process. A non-invasive observation tool, such camera footage is invaluable for figuring out what may have happened when things go amiss. Two years ago a chick disappeared from a nest, it turned out the mother flew off with the three-day-old chick and presumably ate it. Without such evidence it would have been impossible to establish what happened. ■

Eastern Falcon Conservation Trust

As a result of my five-year informal observations of kārearea in the Mackenzie Basin, it is my intention to establish a conservation trust for the eastern falcon. Given the ongoing turmoil in DOC, the need for private conservation trusts that address issues facing particular ecosystems or species is even more crucial than ever for the future of conservation in this country. Although two other fantastic falcon trusts do exist, neither of these deal exclusively with the eastern falcon. Because of my background as a PhD-level research scientist, this new trust would focus on research that increases our understanding of these incredible birds in our dry-land high country environment, so we can do more to protect them and the habitats they require.

It is intended that this trust will raise funds for a number of research projects to be carried out at the Zoology Department, University of Otago. If anyone (or company) would like to sponsor a bird to be outfitted with a solar-powered radio tracking device to monitor their movements, please get in contact. You'd get the naming rights and be kept updated on hopefully three year's worth of kārearea movements! Although ambitious, radio tracking is one of the only ways to comprehensively establish mortality rates, territory sizes and just what their habits and movements are.

Falcon's 101

- Estimated to fly at speeds of up to 230 km/hr.
- Eyesight estimated to be 6-8 times more powerful than man's.
- Males are 1/3 smaller than females.
- Fledglings/juveniles have larger wings than adults (to compensate for weaker flight muscles and poorer flying ability).
- Falcons were worshipped as the 'God of the Skies' in ancient times.

Anyone who wishes to help support the trust in any way or would like to know more may contact Donna through her website www.nzfalcon.net.nz.