

The conservation of *Polylepis*-adapted birds at Abra Málaga, Cuzco, Peru

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El pequeño bosque en Abra Málaga sostiene tres de las aves más amenazadas del Perú, *Cinclodes aricomae*, *Leptasthenura xenothorax* y *Anairetes alpinus*, aunque el bosque se ha deteriorado los últimos 20 años por tala indiscriminada. Los autores todos integrantes de una relativamente nueva ONG han empezado un pequeño proyecto con la comunidad del lugar, porque este bosque representa el lugar más accesible para ver dichas aves y por eso con potencial ecoturístico. Se presenta datos sumario de la situación para dichas especies en cual indica que *Cinclodes aricomae* solamente tiene un máximo de 750 ha de área para vivir y que esto significa una población mundial de 200–250 parejas. *L. xenothorax* tiene en endemismo por la región de Cuzco y Apurímac y se estima una población total de 500–1.500 individuos. *Anairetes alpinus* es muy raro fuera de la región y también en urgente necesidad de acción conservacionista. La conservación del bosque de Abra Málaga no es crítico para la sobrevivencia del especie, pero podría servir como modelo para otras áreas biológicamente más intactas. El trabajo de conservación en Abra Málaga seguirá con participación de la comunidad y actividades como reforestación, cercar el bosque, sustituir el uso de *Polylepis* como leña con kerosene, *Eucalyptus* comprado en el valle y/o briquetas de carbón fabricados por basura de papel. Turismo sostenible de la zona en forma de 'birdwatching', 'trekking', 'climbing' y etno-turismo es un importante recurso para poder mejorar la economía local para que la comunidad pueda comprar su propio combustible. Se ha presentado una idea de subvencionar kerosene como un recurso energético que de algunos modos podría reemplazar el uso de leña de *Polylepis*. Se pide que futuros y pasados visitantes donen 10 dólares a NBC para el fondo para la conservación y marcar la donación *Polylepis*. Esto sería un gran apoyo para el trabajo en la zona.



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Introduction

Conservation of fragmented forest patches with extremely threatened birds is difficult. At Abra Málaga, in Cuzco department, south-east Peru, a c.10 ha *Polylepis* woodland, at 4,000–4,300 m, and adjacent smaller patches harbour three highly endangered species: Royal Cinclodes *Cinclodes aricomae*, White-browed Tit-spinetail *Leptasthenura xenothorax* and Ash-breasted Tityrant *Anairetes alpinus*. The locality is very close to the pass on the Cuzco–Quillabamba road. The few families in the area collect firewood from the woodland for their open fires, which at least previously burned throughout the day to prepare meals for passing truck drivers. Thus, the forest is gradually disappearing. Abra Málaga is the best-studied *Polylepis* site above 4,000 m in Cuzco for these species. Though it has been severely degraded during the last 20 years, all of the threatened species still occur, making it important as the only accessible site for these elusive birds.

The status of relict *Polylepis* forest patches at altitudes around 4,000 m

In Cuzco and Apurímac departments we know of c.650 ha (including new data from Alfredo

Tupayachi pers. comm.), of suitable habitat for the threatened species mentioned above, namely *Polylepis* woodlands at 3,800–4,300 m. Taking account of similar areas identified from satellite images and topographic maps, and from overflying the area, there may be a few additional patches. The quality of these forests is difficult to discern and only field visits will clearly identify suitable areas. We estimate, from these data sources, an absolute maximum of c.750 ha of *Polylepis* above the requisite altitude. Considering the concentration of endemic birds in this area⁵, this is very alarming. Abra Málaga consists of only c.10 ha.

Firewood gathering is the most conspicuous, but not necessarily the most serious, threat to these woodlands. This is because local people manage some woodland as firewood resources. The real problem is incessant burning to create grazing for cattle, as this prevents forest regeneration. Hacendados, of Spanish origin, in the highlands of Vilcanota, Vilcabamba and Runtarcocha kept cattle until the agrarian revolution, when the land was returned to peasant cooperatives. Cattle ranching persists in these areas, but with little knowledge of how deforestation can alter the local climate and provoke landslides and erosion. Woodland is usually

burnt, which devastates *Polylepis*. It is widely agreed that *Polylepis* originally covered high parts of the Andes, but burning has been undertaken for thousands of years, initially for hunting purposes, and gradual replacement of forest by grassland proceeded throughout the Holocene (i.e. for over 10,000 years). Recent pollen drill cores above Ollantaytambo indicate that this area was even more barren than it is today 3,000 years ago, but recovered 500–1000 years ago through better land use by the Incas². The arrival of the Spanish in the 1500s clearly intensified forest turnover to grassland, as cattle, goats and sheep were introduced.

Red Data Birds (RDB) of the +4,000 m

Polylepis woodlands

Because of scarcity of habitat and regional endemism, the situation is extremely serious for the species mentioned below. Conservation projects are needed in virtually every possible forest patch where these birds are encountered.

Royal Cinclodes *Cinclodes aricomae*

Discovered at Abra Málaga in 1982³ and one of the species most urgently in need of conservation measures in Peru. The type-specimen is from Aricoma pass, Puno, but *Polylepis* is no longer found there and there are no recent reports of the species. There is a recent sighting from La Paz department⁶, but the population size there is unknown. It is best known from the Cuzco/Abancay Mountains, where a population of c.40 persists in the Runtacocha area². However, Fabrice Schmitt (pers. comm.) reports that this area has been severely impacted recently by development projects and it is reasonable to believe that the present population may be much smaller.

Repeated visits to Abra Málaga have demonstrated that the population here is only three pairs. During early 2001, the species has been observed

near-simultaneously in two areas, offering some hope for it at the site. GFM is currently seeking funds for a study at Abra Málaga to clarify the territory size and acquire other biological data for *C. aricomae*. It is probable that the species requires relatively large territories as it flakes up large areas of moss cover with its strong bill to acquire invertebrates. Mean territory size is probably c.3–4 ha, rather than 1 ha. Given this we suggest a total population of 200 pairs. Taken with under-explored areas, such as Puno and La Paz, the world population is probably at most 250 pairs. CAC considers that direct human disturbance could be a contributing factor in its rarity. Royal Cinclodes is a very nervous species, which becomes very alert upon human presence. We request that visitors to Abra Málaga do not to use playback to attract the few individuals that remain there. Birders who wish to ensure that they see the species are invited to contact any of the authors of this paper for assistance in reaching more remote sites, which require at least two days to visit. Such small expeditions would also help us to monitor other sites.

C. aricomae is probably the most sensitive of these species, as moss cover on rocks, trunks and branches rapidly disappears when the canopy is opened through logging or burning, because the sun dries out the moss.

Being a ground feeder it is temporarily forced to descend to lower elevations during periods of snow, meaning that it could disperse between highlands, securing gene-flow between populations, which bodes well for future reforestation projects.

White-browed Tit-spinetail *Leptasthenura xenothorax*

Endemic to *Polylepis* in the Cuzco/Abancay Mountains, usually above 4,000 m, but apparently more plastic in its general distribution within woodlands. Recorded in small patches of woodland as tiny as



Figures 1–2. Royal Cinclodes *Cinclodes aricomae* (Garry George)

0.25 ha in Cordillera Vilcabamba, in highly degraded *Polylepis* at Warmiwañuska pass, on the Inca Trail to Macchu Picchu, and in the Vilcabamba range (pers. obs.). These observations suggest the species can persist in tiny forest fragments, especially if a number of such patches are in close proximity. *L. xenothorax* searches bark crevices of the trunk and thicker branches of *Polylepis*.

L. xenothorax also occurs in groups, typically of five birds, and will join mixed flocks. It appears easier to detect than *A. alpinus* and the population at Abra Málaga is c.30–50. We estimate the known population to be c.500, with a possible total population of 1,500. As its habitat is rapidly being destroyed its conservation status should perhaps be upgraded from Endangered⁴ to Critical.

Ash-breasted Tit-tyrant *Anairetes alpinus*

Known from four areas: Cordillera Blanca, Ancash department, Cordillera Huayhuash, the Cuzco/Apurímac mountains and one site in La Paz department, Bolivia. Only c.12 sites are known in total and only in Cuzco/Apurímac is it relatively common.

It typically moves in groups of three birds, sometimes with other species, searching the outer branches for invertebrates. It appears to favour upper-altitude *Polylepis* with dense canopies, as there are very few records below 4,000 m. Its overall population is difficult to assess, but there are c.20–30 at Abra Málaga. *A. alpinus* has never been found outside *Polylepis*, even during snowstorms¹. Currently classified as Endangered, the species may actually be Critical, as its habitat is rapidly diminishing and it is very rare in the Cordillera Blanca and Bolivia. Furthermore, within Parque Nacional Huascarán, in Cordillera Blanca, where its habitat is supposedly protected, cattle grazing within *Polylepis* and occasional deliberate grass fires continue, restricting forests to steep, rocky areas. Clearly *A. alpinus* requires urgent conservation action.

Is Abra Málaga worth saving?

For the three species discussed above, Abra Málaga is probably of limited overall importance and if the conservation battle is lost there, it will not be critical. However, it could be argued that the situation of all three is sufficiently tenuous that any population loss is important, but at least experience gained at the site may assist in avoiding future mistakes and alerting conservationists to potential pitfalls. The advantage of commencing a conservation project at Abra Málaga is its relatively easy access for visiting birders, which will ensure regular monitoring, while in the future visitor fees or donations should secure its long-term finance. Another possibility currently being considered is to promote the area for ecotourism, which has the potential of gen-

erating a larger income for the local community and an incentive to conserve the forest and natural beauty of the area, as well as preserving traditional customs. Andean Condor *Vultur gryphus* is regularly seen in the area, which could be promoted as the closest site to Cuzco where one can see the species. The Veronica massif (5,750 m) adds to the overall impressiveness of the Andean scenery.

We are currently investigating the possibility of marketing Veronica as a trekking area for beginner alpinists in a good state of fitness, but with limited or little previous climbing experience, to be accompanied by expert local climber-guides.

Conservation

Three ideas were originally developed in order to protect the woodland and decrease the existing exploitation pressure.

- substitute *Polylepis* with kerosene and *Eucalyptus* brought from lower altitudes
- protect existing woodland from grazing animals by fencing the woodland
- reforestation

The project was to be financed by donations/fees from visiting birders. Due to some initial hostility from the local community, lack of funds, and institutional and organisational difficulties the project has been severely delayed.

The delay has brought some benefits. Originally, we planned to donate kerosene stoves and fuel, but were aware that gifts could create expectancy among the community. Nonetheless, we considered it necessary to initiate the project swiftly in order to halt continued logging, and replacing firewood for kerosene would have an immediate effect. But the hostile situation proved this to be a bad strategy. Gifts and donations were likely only to increase the gap between locals and conservationists. Thus, following initial fieldwork, when two additional *Polylepis* stands of 2–4 ha each were found at Keuñapata and Keuñakassa, it was decided to start the reforestation programme using seedlings donated by INKA. All participants received a small salary, while soft drinks and some food were also provided. Additionally, small presents were delivered to children at Christmas.

We have now gained the confidence and trust of the local population. Logging has not wholly ceased, meaning that we also need to replace the use of trees and fence the remaining forest. We now have a useful model as to how to implement changes, through communal working sessions, traditionally known as *ayni* by the Incas, ancestors of the people of Cuzco.

Eucalyptus has recently been brought on a regular basis to the community to immediately replace the wood used today. In the long run, creating a dependency for kerosene can importantly reduce

the demand for firewood. Rather than donating kerosene stoves, they will be sold following the next reforestation outing for c.30% of their value, which will be c.1 day's labour (US\$3). Likewise kerosene can be subsidised. Some kerosene lamps and heaters will also be purchased and sold at discounted prices. Future plans include a central deposit where kerosene can be bought at a subsidised price. Forthcoming *aynis* will include reforestation, fencing off the forest and creation of a plant school. Nevertheless, kerosene will never completely replace firewood and we must retain an open mind and listen to the local peoples' viewpoint. Cultural resistance to the new fuel may exist. Time will tell. We are also considering a different fuel, in the form of charcoal bricks made from paper waste. This would be a renewable long-term resource and perhaps an even better alternative.

Birdwatching at Abra Málaga

Recent visitors to Abra Málaga may have observed that logging continues and the forest is in a poor state. However, all the specialities can still be found and birdwatchers will therefore continue to visit the locality. We originally decided that entrance fees to the forest would finance the project. However, legal constraints in charging fees have prevented our establishing a fund for *Polylepis* bird conservation. We have recently created an NGO—Ecosistemas Andinos—that will focus on *Polylepis* conservation, and urge all future (and past) visitors to Abra Málaga to donate US\$10 to this group. The money raised will subsidise kerosene and will be invested in the area to improve conservation, infrastructure for visitors and socio-economic projects that benefit the community. Money can also be donated via an address in the USA. Please contact one of the authors for details of this.

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