

Sympathy for the grebes: Hooded Grebe conservation programme update (2011–2017)

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The remarkable Hooded Grebe *Podiceps gallardoi* is no stranger to the pages of *Neotropical Birding*, but it is several years since we last heard from the ardent conservationists seeking to prevent this now Critically Endangered bird from succumbing to extinction. High time for an update then – and all the more so since an award-winning video of the waterbird’s display went ‘viral’ in 2017, securing an estimated 20 million hits. That’s a lot of people who are now likely to care passionately about the survival of the *Macá tobiano*.

The recent history of the Hooded Grebe has become major news for many people interested in biodiversity conservation. This

is not simply due to its parlous status (classified as Critically Endangered) but also because this special waterbird has grown as a ‘symbol’ of

1 Hooded Grebe *Podiceps gallardoi* colony among floating mats of Water Milfoil *Myriophyllum quitense*, Meseta del Lago Strobel, Santa Cruz, Argentina, December 2017 (Ugo Mellone). High-quality Water Milfoil vegetation is fundamental for the Hooded Grebe colonies. Trophic cascades created by Rainbow Trout *Oncorhynchus mykiss* have a terrible impact on this plant.



Patagonia. Arguably it has also come to signify wildness, being a species that went entirely unnoticed until 1974 mostly because it breeds in the highland plateaus along the southern Andes in Santa Cruz province, where only tough ‘gauchos’ (cowboys) work, and winters on three huge Atlantic estuaries where they become tiny, white dots only detectable by experienced observers (and even then only since 1994!).

Much has changed in the seven years since we last reported on *Macá Tobiano* conservation in this magazine (Imberti & Casañas 2010, Roesler *et al.* 2011). Back then, fear about the fate of the Hooded Grebe was overrunning Argentina’s conservationist community. In those articles, members of the fledgling Proyecto Macá Tobiano (Hooded Grebe Project, a partnership between Aves Argentinas and Ambiente Sur) called the attention of an international audience to an unexplained, drastic drop in the grebe’s population.

In January 2009 (Imberti & Casañas 2010), the first expedition to the plateaus revealed an unexpected absence of grebes at most of the important breeding lakes identified by Johnson (1997). After two further seasons’ fieldwork (Roesler

et al. 2011), we had a better and broader picture – if still not an entirely accurate one. Worryingly, we discovered a new, shocking threat with a terrifyingly acute impact. In just a couple nights, a single non-native American Mink *Neovison vison* destroyed an entire grebe colony, killing 33 reproductive adults. This was a ‘double whammy’: zero breeding success in-year, and fewer adults to make future reproductive attempts. The grebe’s situation was even worse than previously imagined...

Hurtling towards extinction?

Things change. As birders and conservationists (indeed, as living creatures) we have to adapt constantly. But in times of urgency, change needs to accelerate. Each summer since 2011, we have surveyed Hooded Grebe breeding populations in Argentinean Patagonia. Each season we have driven long distances along awful tracks and rocky roads to reach remote lakes. So much so that 4x4 trucks have become our second home. We checked up to three times per summer all lakes at which Hooded Grebe had been recorded. We used





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2–4 Hooded Grebe *Podiceps gallardoi*, Meseta del Lago Buenos Aires, Santa Cruz, Argentina, January 2018 (Gonzalo Ignazi). This plateau near Parque Nacional Patagonia holds more than half the global breeding population of a species whose parlous conservation status and fancy displays have transformed it into an avian celebrity.



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5 Mating Hooded Grebes *Podiceps gallardoi*, Meseta del Lago Buenos Aires, Santa Cruz, Argentina, January 2018 (Gonzalo Ignazi). About 95% of adults make at least one breeding attempt per season. In a year, with diligent protection of colonies, as many as 50% of pairs may breed successfully.

satellite imagery to detect new lakes. We searched the entire extent of the bird's potential distribution.

In Roesler *et al.* (2012a) we published a more accurate estimate of the grebe's breeding population. There were no more than 800 adults across six plateaus, with few colonies. The population had dropped by 80% in only 25 years. The situation was possibly even worse than the most heinous scenario developed during 2009! Most of the hypothesised threats were real, and unexpected pressures (such as American Mink: Roesler *et al.* 2012b) were additionally affecting the last remaining populations.

A 'new era' for the Hooded Grebe Project

Now that we understood the species's true status, knew the location of the most important breeding lakes and could gauge the real impact of each threat, we decided that management action was unavoidable. A protected area had to be created to preserve the best-maintained population; American Mink and Rainbow Trout *Oncorhynchus mykiss* stocks had to be removed from Hooded Grebe breeding lakes; and Kelp Gulls *Larus*

dominicanus had to be kept away from grebe nests and small chicks.

The Hooded Grebe Project started an important fundraising campaign. Many institutions, national and international, heard the 'urgent call of the grebe'. A new project was initiated. One project, with one goal: 'to increase the Hooded Grebe population.'

Conservation actions: ideas and results

In the long term, the impacts of global climate change are the main threat for the Hooded Grebe. There is predicted to be insufficient winter snow to fill lakes and summer wind speeds will increase so that they will, literally, blow the water from the lakes. There is not much we can do about this core problem, although we piloted techniques to mitigate some of the impacts. Our first idea was to use wave-stoppers to protect floating nests. We soon stopped this because the trials were potentially more dangerous than the wind itself, since the strong winds displaced them towards the colony. Oil-control devices (used to manage petroleum spills) were another interesting idea – but that we had to discount because it was impossible to move the devices each season to follow the grebes as they moved breeding lakes (and the lakes were too small and shallow anyway).

These experiences prompted us to re-orientate. We concluded that we were better off investing in actions that could succeed through dedicated human effort and that could have a direct and measurable effect on grebe numbers. To maximise breeding-success rates, our idea was to clear (and keep clear) the remaining important lakes of invasive species.

Mink control

The priority was to control the most harmful predator, American Mink. Through an extensive search, we delimited the area invaded by Mink. We found that mink were resident in most of western Santa Cruz province, but were frequent visitors rather than permanent occupiers of lakes in the high plateaus. So we took action.

Since 2014 we have run a mink-control programme that has involved thousands of man-hours, hundreds of traps, five river basins and the removal of more than 120 mink. Our success has been clear: over the course of our programme, and within its area of operation, not a single Hooded Grebe has been killed by mink (Fasola & Roesler 2016).



6 Control of American Mink *Neovison vison* is a cornerstone of the programme to recover Hooded Grebe *Podiceps gallardoi* populations (Ugo Mellone).

The problem is, however, that grebes are not site faithful. Changes in snow accumulation govern lake conditions. Grebes thus move lakes between (and even during) breeding seasons. Moreover, we have learnt that mink that reach the reproductive lakes are young males dispersing, looking for territories (Fasola & Roesler 2016). Accordingly, the mink-control area needs to be dynamic, not static.

Starting in 2017–2018, we have expanded our operational area with the aim of protecting the whole Laguna Buenos Aires plateau, an area of approximately 5,000 km² and 550 km of rivers. The task remains a mighty one, for we have discovered that mink arriving at plateau lakes change radically their hunting habits, feeding mostly on birds, and – worse still – selecting Hooded Grebe amongst thousands of other waterfowl (Fasola & Roesler 2018). Mink control must increase both in effort and extent to avoid this predator expanding further in austral Patagonia.

The Kelp Gull conundrum

Unlike American Mink, Kelp Gull is native to Patagonia. Its populations have increased as they follow human settlements, birds establishing colonies at unforeseen locations (Roesler *et al.* 2012a) and preying on grebe colonies. To address these problems, we created a new strategy based on ‘colony guardians’ (Roesler *et al.* 2016) whose role is to protect the colonies. From the moment the first nests are built, field technicians camp in

the middle of nowhere for months, staying on site until the moment the final juvenile migrates. The guardians protect eggs and small chicks from gulls and flush native waterbirds (particularly coots *Fulica*) that compete with the grebes for nest-platforms. They have also become the final point of control, should a young male American Mink arrive at a site beyond the programme boundary. Colony guardians have become a major success, improving grebe breeding rates by more than 30% (Roesler *et al.* 2016). This approach has been replicated elsewhere in Argentina by projects aiming to conserve threatened birds (Pucheta *et al.* 2017)

Fishing for conservation

Rainbow Trout change the macro-invertebrate community of a lake, creating unfavourable conditions for grebe reproduction (Lanceolotti *et al.* 2016). Trout-control sounds easy, right? Target once-important lakes for Hooded Grebes, then catch all the trout in gill-nets. Unfortunately, this is not as simple as it sounds.

Patagonian winds routinely reach 100 km/h. Throw in remote lakes, difficult access and the need to transport the fish and you end up with one of the hardest projects we have embarked upon. We also chose to start with the most difficult (i.e. largest) lake, because this was where we could make the biggest difference. Before trout were illegally introduced to the 500-ha Laguna El Islote in 2001–2002, it was frequented by 1,000-plus



7 Conservationist collecting abandoned Hooded Grebe *Podiceps gallardoi* eggs to incubate ex-situ, Meseta del Lago Buenos Aires, Santa Cruz, Argentina, January 2017 (María Inés Pereda/Aves Argentinas).

grebes and hosted one of the biggest colonies ever detected (more than 120 pairs).

We started restoration at El Islote in summer 2016–2017. Partnering with local fishermen, we removed more than 3,000 kg of fish and installed physical barriers in the streams that prevent trout from reproducing. This was and remains challenging work, but early signs are positive: fishermen are already noticing a decrease in catch efficiency.

Ex-situ parenting

Among the more innovative elements of our programme has been to play surrogate grebe parents. We already knew that 95% of Hooded Grebes laying two eggs abandon one, and raise just a single chick. We then noticed that many eggs were lost due to strong winds. Given the grebe's poor reproductive success, we couldn't let those eggs go to waste, so we started a hand-rearing project. We aimed to incubate abandoned grebe eggs from lakes where colony guardians were present and to release fledged birds back into the wild.

This was bold stuff. Nobody had ever tried such ex-situ conservation for a *Podiceps* grebe. Indeed, among South American grebes *per se*, it seems only ever to have been tried for Pied-billed Grebe *Podilymbus podiceps* (MacVean 1988). We tried with the eggs of Hooded Grebe and Silvery Grebe *Podiceps occipitalis*. Although the results have not been the best, we did manage to rear and

release a Silvery Grebe (named 'Botija'). We will continue trying with Hooded Grebe eggs.

Saving sites

Not long into our fieldwork, we realised that the Meseta (plateau) del Lago Buenos Aires had a substantial grebe population (with numbers that were comparable with those of the 1980s), including several significant colonies. For some reason, the population there appeared neither to have declined in the past 25 years, nor to fluctuate massively between years. If we were asked – hypothetically, of course – to nominate somewhere to create a National Park to protect Hooded Grebes, our answer could only be 'Meseta del Lago Buenos Aires.' Then the hypothetical became real. In 2012 the collective endeavours of individuals from Aves Argentinas (BirdLife International Partner), the country's National Parks Administration, Fundación Flora y Fauna Argentina and the community of Los Antiguos launched a project to create Parque Nacional Patagonia. In December 2014, this too became a reality.

New hope for the Hooded Grebe

Management and conservation actions are neither cost- nor effort-free. Every summer since 2010, we have driven 40,000 km. But we have accomplished the first primordial step towards our giant goal: we have stabilised Hooded Grebe populations. Even better, 2016–2017 summer censuses and 2016 winter counts showed a slight *increase* in



8 Hooded Grebe *Podiceps gallardoi* colony, Meseta del Lago Strobel, Santa Cruz, Argentina, December 2017 (Ugo Mellone). That this species is tame is fortunate; it enables conservationists to work right next to colonies, which is essential to protect eggs from Kelp Gulls *Larus dominicanus*.

9 Adult Hooded Grebes *Podiceps gallardoi* feeding chick, Meseta del Lago Buenos Aires, Santa Cruz, Argentina, January 2018 (Gonzalo Ignazi). If breeding successfully, 95% of pairs raise a single chick – among the lowest productivity of any grebe.

the population. Trends are important, but they need to be maintained. Our initial target was to stop population reduction by controlling threats, but now we need to aim for a real population boost. The most recent censuses indicate that the population may have exceeded 800 breeding individuals. This offers a big incentive to keep on working.

The (hydroelectric) cloud on the horizon

After thousands of man-hours spent in the field, after superb efforts to minimise the impact of the main threats, and after many institutions (including the Argentine government) have supported the project to preserve remaining Hooded Grebe populations, a brand new threat has emerged that will potentially jeopardise the very survival of this charismatic species. Permission has been granted for two hydroelectric dams to be constructed on the Río Santa Cruz in the near future. This new infrastructure will completely change river flow and will exert massive, as-yet unknown, impacts on the estuarial environment.

Since 2011 we have been simultaneously monitoring the three main estuaries in Santa Cruz where grebes spend the winter: Río Gallegos, Coyle and Santa Cruz–Chico. Our results demonstrate that use of the estuaries varies across the season, which each playing a key role at a different moment. At the start of winter, similar numbers of grebes are counted at each estuary. By the winter's end, just

prior to the spring return to the breeding plateau, birds concentrate in the northernmost estuary (Santa Cruz-Chico). In August 2016 we counted almost 95% of the global population in that single estuary. Talk about putting eggs in a single basket!

Dam construction will have an unknown but potentially devastating effect on the Hooded Grebe should it modify, in particular, the environment at Santa Cruz-Chico. Studies are needed to clarify the grebe's use of the estuaries and its migration routes, and the trophic strategies at the estuaries. The future of the Hooded Grebe depends on our capacity to learn as fast as possible about the species, as well as how we can help it overcome the effects of the transformation of its fragile realm. Only then will we be able to take effective action in order to prevent the ultimate catastrophe: extinction of the Hooded Grebe.

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10 Displaying Hooded Grebe *Podiceps gallardoi* and Silvery Grebe *P. occipitalis*, Meseta del Lago Buenos Aires, Santa Cruz, Argentina, January 2018 (Gonzalo Ignazi). Although such interspecific displays are not uncommon, only one hybrid has ever been collected, suggesting successful hybridisation to be extremely rare.

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Tango in the Wind

Will passion and ingenuity save Patagonia's rarest bird
www.living-wild.net/thehoodedgrebe/



Ed: to accompany the main article by Kini Roesler and colleagues, I invited Paula and Michael Webster to relate the tale of how they came to make a viral video about the display of the Hooded Grebe.

TANGO IN THE WIND

Imagine an undulating windswept land serviced by few roads and lived in by few people. A land of volcanoes and glaciers, from which rise a number of steep-sided plateaus, almost impossible to access without a sturdy 4x4. Once on top of a plateau, roads cease all together. The landscape flat and strewn with volcanic rocks, sharp and jagged. The wind unbelievably strong and ceaseless. Dotted across the plateau are numerous small, shallow lagoons – a very few of which hold small numbers of Hooded Grebe. It was this bird that we spent four months filming during 2017.

The lagoon where we spent most time was impossible for a vehicle to approach, so we camped as close as we could, seeking the shelter of a cliff surrounding another lagoon. Each morning it took us two hours to struggle from our camp to the lagoon where the Hooded Grebes were breeding. Thick grassy tussocks covered the ground, separated by rocks and boulders. We walked, heads held low as protection from the wind that howled around our ears, buffeting us one way then the other. Our rucksacks – containing tripods, cameras, sound equipment and food for the day – weighed us down, but also stopped us from blowing away.

At the lagoon we erected a mountain tent in which to hide, observe the birds and set up our equipment out of the wind. Fortunately the birds were not too shy and were often within 75 m of our cameras. As with all grebes, filming the courtship display was our main goal.

The full breeding display had never before been filmed in its entirety. It is spectacular and comical, reminding us of the exotic, sexy movements of a pair of Tango dancers in a Buenos Aires bar. The film we produced, called *Tango in the Wind*, is not just about a beautiful bird. It's about the devotion and spirit of a small group of people working to save an astonishing creature from sliding to extinction. So sit down in an armchair, pour yourself a glass of Argentinean Malbec, fire up your laptop and key in the URL <http://living-wild.net/thehoodedgrebe> and join the 20 million people who have already watched our award-winning 30-minute film.

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