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## Felid reintroduction using captive founders: poor science and worst practices

Captive breeding and reintroduction are often publicized as a solution for the loss of species in the wild. This is especially true for highly charismatic and endangered taxa such as large felids where, at least in affluent developed countries, the general public's experience of big cats is chiefly via popular media and zoos. Directly or otherwise, these sources often perpetuate the notion that the destiny of captive cats is to eventually return to the wild. This is compounded by the extraordinary publicity surrounding ad hoc reintroduction efforts such as those of lions undertaken by George and Joy Adamson in the 1960s and 1970s.

Public perceptions aside, the prospects for reintroducing large cats into the wild from captivity are profoundly limited by a constellation of biological, technical, financial and sociological factors. Those factors have been comprehensively reviewed elsewhere (Beck et al. 1994, Breitenmoser et al. 2001) and are beyond the scope of this article but suffice to say, very few reintroduction efforts involving captive-born cats can be considered a success (but see Hartmann-Furter 2009 and von Arx et al. 2009 for discussions on the potential of captive individuals for small felid reintroductions). In contrast, restoration efforts

using wild-caught individuals are considerably more successful (Hunter et al. 2007, Jule et al. 2008) and the lead recommendation of the IUCN/SSC Reintroduction Specialist Group regarding the source of founders is that wild individuals are preferred (IUCN 1998).

To our knowledge, there are currently only two well planned efforts underway to reintroduce medium-large felids using captive founders: the Iberian Lynx Conservation Program (Vargas et al. 2008) and a program to establish a second *in situ* population of the Amur leopard (Christie 2009). Both cases are characterized by (*inter alia*):

1. the target taxa being critically endangered,
2. wild individuals being unavailable or too endangered to act as a source for translocation,
3. having extremely detailed strategies, often years in the planning, which address in detail the formidable challenges of using captive founders.

In stark contrast to these model projects, there remains a disturbing trend for *ad hoc* reintroduction efforts using captive-bred cats that lack any of these basic criteria. Two recent projects attempting reintroduction of captive

jaguars, in Paraguay and Mexico, highlight the inherent problems. Both projects were recently featured as successes in *Jaguar News*, the newsletter of the Brazilian-based Jaguar Conservation Fund (<http://www.jaguar.org.br/english/informativo.php>), but by any reasonable measure, both projects have been predictable failures. To discuss these issues, we begin with a brief summary of each project from the information provided in *Jaguar News*, as well as unpublished information provided by personnel in the respective countries:

1. Paraguay (*Jaguar News* 30, July 2009).

2 adult jaguars, approximately 3 years old, were released in March 2009 on a 50,000 ha privately owned ranch in the transitional Chaco of Paraguay. Both cats had spent their entire lives in captivity prior to release. The cats were released using soft-release methods that included acclimation enclosures from which the released cats could come and go, provision of live prey prior to release and supplementary feeding after release. Both cats were fitted with satellite collars prior to release. Following reintroduction, the male localized around the compound in which he was raised and he was removed from the wild approximately a month after release. The female moved more widely and was recorded making kills of wild prey until approximately 4.5 months after release when she was killed by people on a neighbouring property.

2. Mexico (*Jaguar News* 31, August 2009).

The Mexican project sourced 2 adult jaguars from local zoos which were 'previously wild': no other details of the animals' history were provided. Both cats required advanced dental surgery to repair badly broken canines that had been damaged during their captivity. The cats were set free in Calakmul Biosphere Reserve in May 2009 in a release described as 'very hard'. One animal was found dead within two weeks of release for reasons unknown except that the *Jaguar News* report stated that cause of death was not due to physical injuries. The second cat survived for approximately a month before being killed by local people living on the boundaries of Calakmul.

We find it difficult to comprehend why these projects went ahead at all. Given all that is known and published on the challenges of reintroducing captive felids, the poor outcomes were entirely expected. This is especially so given that both release sites con-



Wild adult male jaguar, Pantanal, Brazil (Photo L. Hunter, Panthera).

tained established wild jaguar populations. The Paraguay report stated that the release occurred where 'female jaguars have not been documented for more than 15 years' but males were present and the site was part of a much larger landscape across which the presence of jaguars is well known: it is specious to suggest that females were absent, even if they had not been seen on the particular ranch for some time. The Mexico site is equally unsuitable for reintroduction, being a location where long-term research has established high densities of the species (Ceballos et al. 2005). Although the spatial behavior of jaguars is fairly poorly known and they might tolerate greater territorial overlap than other large felids (Harmsen et al. 2009, Cavalcanti & Geese 2009), the species nonetheless displays many of the hallmarks of 'classically' feline territorial behavior including infanticide by non-sires and fatal fights (Hoogsteijn & Mondolfi 1992, Soares et al. 2006, Azevedo & Murray 2007). The idea that a captive cat would be able to establish a territory in an established population is incongruous.

It is also disturbing that the principals of both projects rushed to declare success so hastily. At the time the respective reports appeared, the cats had been released for less than 3 months by which time one individual of each project had died or was removed. We suggest even this 50% failure rate would be sufficient reason to withhold judgment regarding success but had the principals waited another 1-2 months, their success rate would have been 0%. This speaks to the motivation behind such projects. In both reports and subsequent communication with personnel associated with them, the main justifications for the projects fall into two categories:

1. Information gathering: since there has never been a successful reintroduction of jaguars, any information collected from these attempts will be useful for future attempts,
2. Awareness raising; both projects (in particular, the Mexican effort) received substantial local publicity, raising the profile of jaguars and their conservation needs.

While both are potentially valid, neither warrants ignoring the suite of additional requirements for successful reintroduction. Indeed, the fact that both projects were such resounding failures undermines these potential benefits, particularly in the former: it cannot be claimed that these projects have contri-

buted to the science of jaguar reintroduction, except as examples of how not to proceed. Simultaneously, these benefits (and others) are far more likely to be realized as a result of a well-planned reintroduction.

Unfortunately, there is little that we can say which is positive about these types of projects. We hope that by drawing further attention to them, practitioners proposing felid reintroduction will undertake the type of careful, science-based planning typical of earlier successful efforts and proposed projects such as the Iberian Lynx Program. We strongly believe that, in the great majority of cases, captive founders are unsuitable or undesirable for reintroduction of large felids. They should certainly never be considered in the ad hoc, opportunistic manner in which both the Paraguay and Mexico projects were undertaken.

Finally, with respect to reintroducing the jaguar, we conclude there would be merit in a rigorously planned effort to restore the species in areas of its former range. The key lies in identifying suitably large areas now devoid of the threats that extirpated the species in the first place. Such opportunities are few but assuming they arise, we encourage adoption of the principles and approaches outlined here.

## References

- Beck B.B., Rapaport L.G., Stanley Price M.R. & Wilson A.C. 1994. Reintroduction of captive-born animals. *In* Creative Conservation: Interactive Management of Wild and Captive Animals. Olney P.J.S., Mace G.M. & Feistner A.T.C. (Eds). Chapman and Hall, London, pp. 264–386.
- Breitenmoser U., Breitenmoser-Würsten C., Carbyn L.N. & Funk S.M. 2001. Assessment of carnivore reintroductions. *In* Carnivore Conservation. Gittleman J.L., Funk S.M., Macdonald D.W. & Wayne R.K. (Eds). Cambridge University Press, Cambridge, UK, pp. 241–281.
- Cavalcanti S.M. & Gese E.M. 2009. Spatial ecology and social interactions of jaguars (*Panthera onca*) in the southern Pantanal, Brazil. *Journal of Mammalogy* 90, 935–945.
- Ceballos G., Chavez C., Zarza H. & Manterota C. 2005. Ecología y conservación del jaguar en la región de Calakmul, CONABIO Biodiversitas 62, 1–7.
- Christie S. 2009. Breeding Far Eastern leopards for reintroduction: the zoo programme perspective. *In* Iberian Lynx Ex situ Conservation: An Interdisciplinary Approach. Vargas A., Breitenmoser C. & Breitenmoser U. (Eds). Fundación Biodiversidad, Madrid, Spain.
- Harmsen B.J., Foster R.J., Silver S.C., Ostro L.E.T. & Doncaster C.P. 2009. Spatial and temporal interactions of two sympatric cats in a neotropical forest: the jaguar (*Panthera onca*) and the puma (*Puma concolor*). *Journal of Mammalogy* 90, 612–620.
- Hartmann-Furter M. 2009. Breeding European wildcats (*Felis silvestris silvestris*, Schreber 1777) in species-specific enclosures for reintroduction in Germany. *In* Iberian Lynx Ex situ Conservation: An Interdisciplinary Approach. Vargas A., Breitenmoser C. & Breitenmoser U. (Eds). Fundación Biodiversidad, Madrid, Spain.
- Hoogsteijn R. & Mondolfi E. 1992. The jaguar. Ediciones Armitano, Caracas.
- Hunter L.T.B., Pretorius K., Carlisle L., Rickelton M., Walker C., Slotow R. & Skinner J.D. 2007. Restoring lions *Panthera leo* to Northern KwaZulu-Natal, South Africa: short-term biological and technical success but equivocal long-term conservation. *Oryx* 41, 196–204.
- IUCN. 1998. Guidelines for Re-introductions: IUCN/SSC Re-introduction Specialist Group. IUCN, Gland, Switzerland.
- Jule K.R., Leaver L.A. & Lea S.E.G. 2008. The effects of captive experience on reintroduction survival in carnivores: a review and analysis. *Biological Conservation* 141, 355–363.
- Soares T.N., Telles M.P.C., Resende L.V., Silveira L., Jácomo A.T.A., Morato R.G., Diniz-Filho J.A.F., Eizirik E., Brondani R.P.V. & Brondani C. 2006. Paternity testing and behavioral ecology: a case study of jaguars (*Panthera onca*) in Emas National Park, central Brazil. *Genetics and Molecular Biology* 29, 735–740.
- Vargas A., Sanchez I., Martinez F., Rivas A., Godoy J., Roldán E., Simón M., Serra R., Perez M.A.J., Enseñat C., Delibes M., Aymerich M., Sliwa A. & Breitenmoser U. 2008. The Iberian lynx *Lynx pardinus* conservation breeding program. *International Zoo Yearbook Volume* 42, 190–198.
- von Arx M., Breitenmoser C. & Breitenmoser U. 2009. Lessons from the reintroduction of the Eurasian lynx in Central and West Europe. *In* Iberian Lynx Ex situ Conservation: An Interdisciplinary Approach. Vargas A., Breitenmoser C. & Breitenmoser U. (Eds). Fundación Biodiversidad, Madrid, Spain.

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