

Virunga Gorillas – the Case Against Translocations

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Only about 300 mountain gorillas survive in the Virunga Volcanoes of Zaire and Rwanda. In the last *Oryx* Dr John MacKinnon suggested that a transfer of animals from the Kahuzi-Biega National Park to introduce new blood to the Virunga population should be considered. The author of this article, who spent two years in the Virungas with Dian Fossey studying the gorillas, points out first that we do not yet know whether the animals are, in fact, suffering from inbreeding, and suggests why they may not be so; and second that there are special difficulties about the transfer that make death of the released animals and disruption of the population the most likely results at present. Dr MacKinnon, who has read the article, agrees that there are many dangers in translocation and that it should not be done without careful consideration and expert supervision.

In the last issue of *Oryx*, July 1976, John MacKinnon suggested that serious thought be given to the idea of moving mountain gorillas *Gorilla g. beringei* from the Kahuzi-Biega National Park to the Virunga National Park so as to introduce new blood into the probably inbred Virunga population.¹ This article presents the case against such translocations. MacKinnon's three other suggestions for conserving the gorillas, involving the enlargement and better control of parks, cannot be quarrelled with; Verschuren, who knows the situation in Zaire as well as anyone, made similar recommendations in 1975.² However, I believe translocations would, at the moment, accomplish nothing but harm.

The eastern gorilla population, though widespread and maybe numerous, is split into many small, isolated areas.³ Two grave dangers are inherent in this scattered distribution: first, small areas, having a large circumference relative to their area, are far more open to encroachment, especially by man, than are larger areas;⁴ second, as MacKinnon pointed out, small, isolated populations are in danger of suffering from deleterious inbreeding.

The most immediate dangers facing the Virunga population are those of encroachment, and the translocations that MacKinnon implicitly recommended would probably exacerbate these dangers in both populations, while having little to no effect on the level of inbreeding in the Virunga animals. In the first place, there is no evidence for the deleterious inbreeding the translocations are designed to prevent (which does not mean that it is not present); second, there are a number of reasons why the Virunga gorillas might be less prone to suffer from inbreeding than other populations; third, the special difficulties about this transfer make it likely that, at present, its only effects would be disruption of the two populations and death of the transferred animals.

On the first point it needs to be made clear that inbreeding *per se* is not

necessarily harmful: some inbred populations are well adapted to their habitat and successful within it. Thus what we need to discuss is not just inbreeding, but detrimental inbreeding. A population is likely to *suffer* from inbreeding if it was initially outbred and then started to inbreed. MacKinnon repeats Schaller's supposition that gorillas only recently moved into the Virunga region.³ If so, and if they were once part of a larger population from which they are now separated, they fulfil this criterion for being prone to deleterious inbreeding. However, because of their social structure, and for the very reason that they originated as part of an expanding population, it is not unlikely that they have been selected to withstand the damaging effects of inbreeding.

Common signs of inbreeding are physical defects and decreased viability. No defects seen in the Virunga population are yet attributable to inbreeding, and there is no evidence to indicate decreased viability. About 40 per cent are immature animals,^{5,6,7} and we do not know what this signifies in terms of the population's reproductive potential, but in an area that has suffered recent drastic decreases in available range⁴ it might be an encouraging percentage, especially as so many of the immatures are very young. Another sign of inbreeding, the inability to adapt to changes in the environment, is one to which the Virunga gorillas could possibly be more resistant than other populations. The Virunga park is small but has a large range of altitude – from about 7000ft to 14,780ft – and hence a wide range of environments. The gorilla movements encompass much of this range; the animals must therefore be adapted to a number of widely different habitats and ought to be well able to survive fairly large environmental changes. Thus, although the small size of the Virunga population makes inbreeding likely, even 'very probable', as MacKinnon says, there are mitigating factors that lessen the immediacy of the danger. Translocation can afford to wait until we have the experience necessary for success.

What about the effects of the transfer? First, there is the inevitable trauma to the two populations involved in the capture, transport, and release of the animal. Second, the Kahuzi and Virunga populations are adapted to different environments – different plants, altitudes, climates and MacKinnon is aware of these differences, and also of the animals' close adaptation to their own habitat; but he may not be aware of the extent of the differences. For example, night-time temperatures in the Virungas, he describes as falling 'close to freezing'; actually they frequently go below freezing. The individuals from the two populations are recognisably distinct: those from the Virungas are hairier. Being recognisable, these differences are probably important to survival. The translocated animals might be able to grow thicker coats, but they could die of cold before they did so – pneumonia causes deaths even in the Virunga population. In addition, although many food-plant species are common to both areas, the major food-plants in the two areas are very different. Gorillas are conservative feeders and the translocated animals might not take quickly to a change in diet. The adult animals know their ranges intimately, and they move around them so as to make the most efficient use of the area,⁸ but a transferred animal, even if it could adapt to the new diet, might not be able to find enough of the new foods that it was prepared to eat. Rather than finding the Virunga climate 'bracing', a hungry gorilla could find it lethal.

Third, we know very little about gorilla diseases and parasites in the two areas. The Kahuzi-Biega animals might not be adapted to the Virunga pathogens and, worse, they might introduce pathogens to which the Virunga population is not adapted. Many human populations have been almost eradicated in this way.

Finally, I believe that the translocations could undermine the respect of the local peoples for the sanctity of the parks and the gorillas. If conservationists move into the parks to capture (and probably kill) gorillas, it will be increasingly difficult to explain to the local people why they should continue to remain outside.

John MacKinnon left it open as to whether males or females should be moved. Removing males would cause less disturbance to the Kahuzi-Biega population, but, because of the peculiar social organisation of gorillas, it is very unlikely that a transferred male would be able to breed. In contrast to many primate species, it is the female gorillas, not the males, that move between groups,⁹ changing groups more than once and clearly being choosy over which male they stay with. Initially, it is likely that they base their choice, at least partly, on the quality of the male's range and then on whether she can raise her offspring successfully when with him. A male that is totally strange to an area is unlikely to find a good range. Furthermore, resident males get used to their neighbours, but tend to fight with strangers, and infants are sometimes killed during such encounters. On two counts, therefore, a Kahuzi male is unlikely to breed in the Virunga; in addition, he might endanger the stability of the Virunga groups.

So transfer a female. In the Virungas, virtually all females, when they reach maturity, leave the group in which they were born and move to another male.⁹ Thus there is no reason why a young female should not be accepted into the Virunga population. However, if you consider the likelihood of the translocated animal dying and remember that the best way to decimate a population is to remove its prime females you must question whether the transfer is worthwhile.

The last fifteen years have seen a disturbing decrease in the Virunga gorilla population. Schaller³ estimated 400–500 animals in 1960; three years of census work directed by Dian Fossey showed that there are now only about 300.^{5,6,7} Habitat destruction and disturbance are the major causes of the decrease;^{5,6} these, and not inbreeding, are the most urgent dangers facing the population now. I agree with John MacKinnon that inbreeding is a danger, but I believe encroachment is a more immediate one. We need to spend our money and energies on protecting and investigating the existing populations, rather than blindly interfering with them. In the future we may have the expertise and the knowledge to know whether interbreeding is necessary and to carry the venture through successfully; at the moment we have neither. Even pilot experiments to see whether the transfers are feasible would be hazardous. There are few enough of these magnificent creatures as it is without our further endangering their already threatened lives.

Acknowledgments

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Reports and Journals

In 1920 there were six identifiable swamps in what is now Israel, and by the time the state came into being in 1948 all but one – the Huleh – had been drained. Thanks to pressure on the Government by Israeli naturalists, the Huleh Swamp still exists, part of it as a nature reserve. *The Rehabilitation of the Huleh Reserve* by Uzi Paz (Nature Reserves Authority, 16 Hanatziv Street, Tel Aviv, Israel) describes the work of reclaiming the swamp from partial ‘reclamation’, reports on the present status of plant and animal life there, and tells what remains to be done. The success in reintroduction or revival of locally extinct or moribund species is impressive.

The Stocks of Grey Seals and Common Seals in Great Britain by W. Nigel Bonner (NERC Publications Series C No. 16, January 1976; free) analyses, island by island, the whereabouts and prospects of the 54,000 grey seals and 50,000 common seals in Britain, which represent two-thirds of the world stock and one-third of the European stock respectively. There seems little doubt that reduced predation by man is the main cause of the recent spectacular increase of the grey seal in British waters. Nor is there any easy way of deciding the optimum number of seals in the light of the conflicting interests of fishermen, seal hunters, naturalists and the public.

The *XII Bulletin* of the International Council for Bird Preservation presents a selection of papers read at the ICBP’s 16th World Conference in Canberra in 1974 and the concurrent Symposium on International Trade in Live Birds, with particular emphasis on endangered Antipodean species. Also included is a summary of the 10th Conference of the European Continental Section, in Rumania in 1972. At 323 pages, the bulletin is comprehensive enough to serve as a reference on the status of the world’s rare birds, and the price, £4.50 or \$10, is reasonable almost for the colour cover alone – an exquisite painting of a kakapo by William T. Cooper.

Six papers on research in the Galapagos islands are published (in Spanish with English summaries) in the May 1975 issue of the *Revista de la Universidad Católica, Quito*. A study of various vegetational zones on the island of Santa Cruz, by Magdalena Haro Martinez, shows that introduced plants are not only abundant near settlements but becoming widely distributed in the national park, and that the new road crossing the island from north to south can act as a distribution centre. In a study of goat damage on San Salvador (James), where it is estimated there are about 100,000 goats, Luis H. Calvopina and Tjitte de Vries suggest that only biological control, such as a birth control compound, can solve this major problem.