IUCN OTTER SPECIALIST GROUP BULLETIN
VOLUME 17 ISSUE 2 PAGES 31 – 33

Citation: **Groenendijk, J., Hajek, F., Isola, S. & Schenk, C. (2000)** Giant Otter Project in Peru: Field Trip and Activity Report 1999 *IUCN Otter Spec. Group Bull.* **17** (1): 34 - 45

GIANT OTTER PROJECT IN PERU: FIELD TRIP AND ACTIVITY REPORT 1999

Jessika Groenendijk[1], Frank Hajek[1], Sandra Isola[2] and Christof Schenck[3]

[1]*A. Fernandez Concha 675, EIRosedal, Lima 18, Peru; e-mail: fzsgop@hotmail.com*
[2]*Sandra Isola; e-mail: I9920736@lamolina.edu.pe*
[3]*Frankfurt Zoological Society*

Abstract: In 1999, the Giant Otter Conservation Project of the Frankfurt Zoological Society - Help for Threatened Wildlife (FZS) was given new impetus with the full-time presence of staff in Peru, both within the field as well as in Lima. The four main objectives of the Project were pushed forward: (1) capacitation, promotion and networking initiatives were furthered; (2) government institutions were advised with respect to habitat and Giant Otter management; (3) scientific research was carried out in order to complement existing results; and (4) contributions were made towards the development of a national distribution map for the species. Following, a more detailed account of each of these key activities is given.

INTRODUCTION

The Giant Otter (*Pteronura brasiliensis*) is the largest of the world's 13 otter species and is endemic to the rainforests and wetlands of South America. In 1999, it was classified as 'endangered' by the IUCN Otter Specialist Group as well as by Peruvian Supreme Decree 013-99-AG, and has been listed since 1973 under Appendix I (species threatened with extinction) of CITES. Although recognition of the Giant Otter as a bioindicator, flagship and umbrella species for the Amazon rainforest has increased in recent years, much remains to be done in the fields of research and conservation.

In 1999, the Giant Otter Conservation Project of the Frankfurt Zoological Society - Help for Threatened Wildlife (FZS) was given new impetus with the full-time presence of staff in Peru, both within the field as well as in Lima. The four main objectives of the Project were pushed forward: (1) capacitation, promotion and networking initiatives were furthered; (2) government institutions were advised with respect to habitat and Giant Otter management; (3) scientific research was carried out in order to complement existing results; and (4) contributions were made towards the development of a national distribution map for the species. Following, a more detailed account of each of these key activities is given.

Field Work in South-eastern Peru

In 1999, two Giant Otter censuses were conducted and a gamewarden course held in the Manu Biosphere Reserve; new, long-term research has been initiated in the Palma Real and Patuyacu small river systems in order to evaluate the importance of such habitats for Giant Otters, as compared to oxbow lakes; a first investigation of the status of the Giant Otter in the Malinousqui river was carried out; the management plan for Lake Sandoval, commenced end-1998, was updated using data collected during two additional visits; and Lake Valencia was again surveyed.

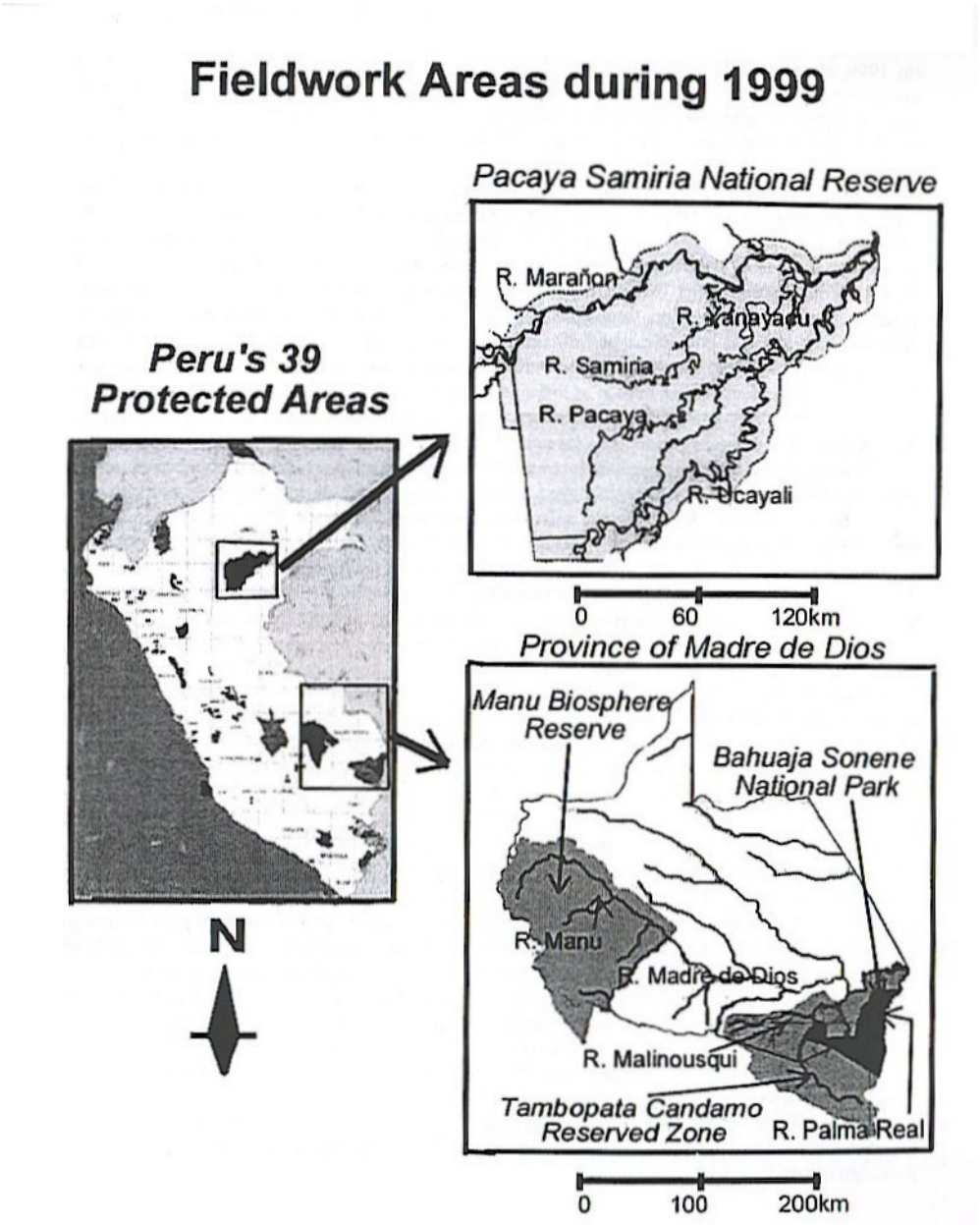

Figure 1: Field work areas in 1999

Manu Biosphere Reserve population censuses

The Project has carried out a Giant Otter census annually in Manu Biosphere Reserve (MBR) since 1990, with the exceptions of 1997 and 1998. In order to compensate for the resulting information gap, it was decided to conduct 2 censuses in 1999, in April/May and October/November, before and after the dry season respectively, to fully update the Giant Otter throat pattern database for Manu's population. A total of 7 oxbow lakes, or 'cochas', had never before been censused.

In the first census, we observed a total of 47 different Giant Otter individuals, two of which were solitaries, the remainder members of 11 different groups. The largest group numbered 6 animals; average group size was 4.1. Total direct Giant Otter observation time was approximately 10 hours. The second census was carried at the end of the dry season, when juveniles born during July, August and September are no longer confined to the den but may be observed interacting with the remaining members of the family. We counted 55 different Giant Otter individuals (9 different groups plus 3 solitaries) of which at least 14 were juveniles born during 1999. The largest group numbered 10 animals. Average group size was 5.8. Total direct Giant Otter observation time was roughly 36 hours.

Of the total of at least 62 different Giant Otter individuals[1] encountered during 1999 in Manu, the Project has managed to obtain 53 throat patterns. At least 13 Giant Otters are known from the first 6 census years. Of the 13, Hanni, Salvadora and Isla represent three of the most intriguing and scientifically exciting life histories, reaffirming the stable nature of Giant Otter group structure as well as the important roles that females play in three of Manu's most touristed oxbow lakes. Hanni, the Project's oldest known otter, born in Cocha Otorongo in 1989, still inhabits the Juarez/Garza area. Isla, born in Otorongo in 1990, is now 9 years old. And Salvadora, after establishing herself as the reproductive female in 1991, appears to occupy the same position in Cocha Salvador 8 years later. Comparatively little is known of Manu's male Giant Otters. Of current interest is Doppel, born in Otorongo in 1994, now believed to be the reproductive male in Cocha Cashu.

A greater emphasis has been placed on the potential impacts of tourism. The design of the management plan for Sandoval, a single oxbow lake in the Tambopata Candamo Reserved Zone (TCRZ), has led to an official request from the Head of MBR to develop an overall Giant Otter tourism management plan for oxbow lakes as well as rivers in this important protected area. A gamewarden capacitation course, held in Manu in November and at which Tambopata-Candamo Reserved Zone and Bahuaja Sonene National Park (BSNP) staff were also present, highlighted the necessity for such management plans and the considerable enthusiasm, ability, and support of gamewardens in this respect.

Small river research: Raima Real and Patuyacu

In the past, the Project has focused on oxbow lake and large river systems (SCHENCK and STAIB, 1992, 1994, 1995, 1996; SCHENCK et al., 1997). To complement this research, a new, long-term study was initiated in 1999, examining Giant Otter group dynamics and habitat use in smaller rivers in order to establish the significance of the latter for survival, and hence conservation, of the species in regions where cochas are few and far between.

The Palma Real and Patuyacu rivers were first visited by the Project in September 1998 (SCHENCK et al., 1999). The presence of Giant Otters was then confirmed by observations of tracks, campsites and dens, as well as a group of at least 5 adult individuals. The new research phase of 1999 was initiated between June and August, the primary objectives of which were to expand upon the preliminary observations obtained during September 1998, and to make a first assessment of the possible impacts on local Giant Otter distribution of a.) human presence, b.) changes in water level, c.) changes in water turbidity, and d.) fish density and seasonal variation.

The upper reaches of the Palma Real are located entirely within the recently created BSNP, the middle section forms a border between the BSNP and the TCRZ, and the lower stretch, up to its confluence with the Madre de Dios, does not enjoy any form of protected status. Quebrada Patuyacu, the majority of which has national park protected status, runs more or less parallel to the Palma Real before joining it roughly 30 kilometres before the point at which the latter flows into the Madre de Dios river. Both the Palma Real and the Patuyacu are meandering rivers with relatively few associated cochas; those which are present are very small (most are less than 100m in length and 30m in width).

No Giant Otters were observed on the Patuyacu. A total of 12 old campsites were recorded, as well as one old den and one fresh den[2]. Of the 12 campsites, 8 were closely distributed along a 4km-stretch of the upper Patuyacu. One campsite was located in the middle reaches of the Patuyacu itself, and 3 campsites were found along its lower length.

Two separate Giant Otter sightings were made on the Palma Real river, spaced just over a week apart. The first was of a single individual, named 'Cuatro', who was later identified as having been a member of the group observed in September 1998. The '98 and '99 sighting locations are approximately 10km distant. It is unlikely that Cuatro is now solitary since we clearly heard contact calls indicating the presence of at least one other otter. Upriver of the July 99 sighting, a total of 8 campsites were recorded of which 6 appeared to be fresh. Two dens were also found, one old and one fresh. Eight days later, two Giant Otters were observed running up the bank of the Palma Real, roughly 8km upstream of the confluence with the Patuyacu. This sighting did not permit us to record throat markings and the pair was not seen again. Five dens were observed in the vicinity of this second sighting, of which 2 were considered fresh. In addition, 4 campsites were seen, one of which was fresh. In view of the temporal spacing of the two '99 Palma Real sightings, one could also hypothesise that both were of members of the same group.

Although such a small data set renders conclusive analysis impossible, it is tempting to postulate that the two clusters of campsites at the upper and lower ends of the Patuyacu, and the long, comparatively empty stretch of river in between, may indicate either the presence of two different groups of Giant Otters with strongly defined home ranges or the (seasonal) movements of one group only. The fact that all Giant Otter signs on the lower Patuyacu were identified as being old, with the exception of one fresh den, which, when we visited it again 3 weeks later was clearly no longer in use, may indicate that the two Giant Otters observed on the lower Palma Real had previously occupied the lower Patuyacu and that these two areas together form (part of) the home range of this particular pair.

In summary, we believe it possible, at least during the dry season, that up to 3 Giant Otter groups inhabit the Palma Real / Patuyacu river system; one in the upper reaches of the Palma Real (we suggest, albeit tentatively, that Cuatro's group has (part of) a home range here, at least during the dry season), one in the lower stretches of the Palma Real and the Patuyacu, and possibly one in the upper Patuyacu.

It is interesting to note that of the total of 9 cochas that were identified on both rivers, a Giant Otter den or campsite was located near 7. This suggests that, though the cochas are small, they still play an important role in den/campsite selection, and hence the definition of home ranges, perhaps especially so in the rainy season when cochas may provide a more stable habitat. The next step will be to visit the Patuyacu and Palma Real during the wet season when human disturbance will be greater (particularly due to the presence of brazil nut collectors) and when water levels and turbidity are more variable.

Malinousqui Survey

Continued development of a national distribution map, the first of its kind for the Giant Otter in South America, will not only facilitate the introduction of Giant Otter conservation and management principles into the 5-year Master plans for protected areas in Peru, but also highlight other rainforest regions where the species should be protected. Towards this end, a cross-section of water body systems in southern, central and northern Peru will be investigated as to the status of the Giant Otter; in November 1999, the Malinousqui river was surveyed for the first time by the Project.

The Malinousqui is the largest tributary of the Tambopata river, draining an area of rainforest of approximately 300,000 hectares. The watershed lies entirely within the north-western flank of the TCRZ. Access to the river is either by boat from Puerto Maldonado or on foot, via paths that begin on the main road from Puerto Maldonado to Cusco.

The Malinousqui was investigated up to and including the Azul river, past its confluence with the Chocolatillo. In addition, 14 of the larger cochas were explored, those which were considered most likely to be habitable by Giant Otters. Of these only 7 had water, the remainder were dry. None of the cochas are very large (no more than 800m in length and 100m in width) and none are named on the map.

On the rivers Malinousqui and Azul themselves, no evidence indicating Giant Otter presence was observed. With respect to lakes, in one (Cocha 'Azulita'), not far from the confluence with Azul, two old den sites were found. An old Giant Otter den was found on Cocha 'Miseria', with 3 entrances, set well back from the shore and located high up on the bank (at least 7.5m above water level). During the entire trip only two individuals were observed, on a lake which is informally known as Loboyoc, located roughly 17km from the confluence of the Malinousqui with the Tambopata river. They were very nervous and it was not possible to record their throat patterns satisfactorily. In three other cochas, no evidence of Giant Otter presence was seen.

Small-scale gold mining is the main economic activity in the area. It is estimated that between 300 and 400 people are involved in mining in the Malinousqui basin and that the activity contributes between 1 and 2.5 million US$ per annum to the local economy (MacLellan 1996). Tourism is non-existent, although several miners said they would like to encourage it, especially if conditions for gold mining deteriorate. The latter could result from strict enforcement of a mining prohibition in the area, falling production yields or a lower gold price.

In total, 18 operations were seen on the lower Malinousqui, compared to 36 in 1995 (MacLellan 1996), and 16 in 1998 (Ramirez 1998). It therefore seems that mining intensity in the lower Malinousqui has

shown a tendency to decrease in recent years. Fish tissue samples were collected during the Malinousqui field period as part of a wider study into the potential risks posed by mercury accumulation to Giant Otters. No otter faeces were collected as no fresh scats were found.

Miners visit fishing sites at several cochas; in Cocha Miseria this was located next to an old otter den. They also fish and hunt at Cocha Loboyoc where we found macaw feathers on the shore, next to shotgun cartridges. It was difficult to ascertain to what extent the miners hunt and if they are likely to shoot Giant Otters or keep them as pets. It seems that most people go hunting in order to supplement their diet and do so when conditions (rain, water level, broken equipment) are not suitable for mining. Motorised boat traffic and the noise from mining operations on the Malinousqui river is continuous, rendering this as a virtual 'no go' area for otters.

Most miners are recent immigrants from the Andes and so have virtually no knowledge of local fauna and conservation, let alone the status of the Giant Otter. They expressed interest in an environmental education programme, addressing the impacts of, and alternatives to, mining, in which the Giant Otter, as a bio-indicator and umbrella species, could play a significant role.

In conclusion, the density of cochas containing water on the river is low (at least during the dry season) and so it is improbable that the natural Giant Otter density in the area, independent of human influence, will ever have been high. However, current Giant Otter numbers are such that it seems likely that habitat quality deterioration and direct harassment resulting from current gold mining activities in the river are affecting the local population.

Lake Sandoval: Management Plan and Survey

Lake Sandoval, half an hour by boat from the town of Puerto Maldonado, is one of the largest oxbow lakes in south-east Peru with a surface area of approximately 125 hectares. In June and August 1999, the lake was visited twice by the Project. Within the first period, we observed a group of 9 Giant Otters on the lake, including one already well advanced juvenile. The juvenile was estimated to be several months old and we conjecture that it was born during the rainy season. During the second visit, we counted only 8 individuals one of which was the juvenile. Quebrada Sandoval and the aguajal area north of the lake were also investigated and, as in 1998, fresh and old campsites were found. One old campsite was found along Quebrada Sandoval, confirming use of this area by Giant Otters for the first time.

The tourism potential of Lake Sandoval has long been recognised and exploited. In 1998, due to the negative impacts of increasing human pressure, and following a request from the National Institute for Natural Resources (INRENA), the Project wrote a draft management plan for the lake (Schenck, Groenendijk, Hajek 1999). This was revised to include more detailed maps and observations made during the 1999 survey visits. In order to stimulate a participative approach while gaining insights from the experience of others, the reviewed copy was sent to seven NGOs and institutions active in Puerto Maldonado, as well as INRENA in Lima, for their comments. In September, all suggestions received were incorporated into the document and the latter sent to eight tourism companies that operate in the Sandoval area for their contributions.

Although we are still awaiting comments from most tourism companies, the management plan has now been accepted by INRENA. The Head of TCRZ has asked the Project to help with positive and participative implementation of the plan recommendations during the coming year. The latter should be pushed forward before human activities and ecosystem degradation in this important Giant Otter habitat have grown to an extent at which they become more difficult to combat.

Lake Valencia Survey

Lake Valencia is roughly 50km downriver from Puerto Maldonado, on the north bank of the Madre de Dios river. With an approximate length of 13 kilometres, it is the largest oxbow lake in the province. During the 1998 field trip in the lower Madre de Dios, a Giant Otter group of two adults and 3 juveniles (born during the 1998 dry season) was seen on the lake. As Giant Otters had not inhabited Lake Valencia for at least 10 years prior, this was perceived as a very positive development for the survival of the species in the area. Establishing the continued presence of the otter family, as well as

obtaining further data with respect to fisheries and other human activities, were the two main reasons for visiting Lake Valencia in 1999, in July and in August.

During the survey no Giant Otters were seen and no fresh campsites or dens were found. A local fisherman showed us the location of two old dens, used by the otters in 1998. He and his family told us that the Giant Otter family had not been seen for several months.

Fishing is the main commercial activity carried out on the lake and is the staple income earner for five families of the Valencia community. Sales in Puerto Maldonado of fresh fish originating from Lake Valencia amounted to a total of 8,957kg in 1997 (Cañas 1998). The main concern the fishermen expressed was regarding the negative impact that netting by the native Palma Real community is having on fish stocks. Apparently, the Palma Real villagers place their nets on the mouth of the caño, during the annual migrations of certain fish species, thereby affecting the natural repopulation dynamics of the lake. The same fishermen also expressed their concern with respect to the amount of fish a Giant Otter family consumes to survive.

Tourism activity on the lake is increasing but, to date, remains low-budget and small-scale. Both the Valencia community and certain tourism agencies are, however, looking at the possibilities of building a lodge in the more uninhabited southern area of the oxbow lake. Human habitation of the lakeshore is increasing as people are moving in with the hope of gaining land titles to plots which they can then sell to tourism companies. The problem is made more immediate due to the fact that Lake Valencia has no Protected Area status. Settlement of the lakeshores will undoubtedly reduce the quality of the lake as Giant Otter habitat.

Throat markings

A minimum total of 79 different Giant Otter individuals were observed in MBR, the Palma Real/Patuyacu river system, the Malinousqui river, and the Capiripa and Sandoval oxbow lakes. Of these, it was possible to personally record a total of 68 distinctive 'manchas' or throat markings. A further 8 throat markings were obtained from 1998 film and photographic footage. The throat pattern catalogue is one of the keystones of the Project; the population dynamics data that may then be derived is essential towards the development of sound management principles and guidelines for the conservation of the species.

Mercury study

Small-scale gold mining is an important activity on the lower Madre de Dios, along the stretch below the settlement of Boca Manu, on the border of MBR, down to Puerto Maldonado. Mercury is used to separate gold particles from river sediments by a process of gravitational concentration and amalgamation. The amalgam is then heated to evaporate the mercury, and gold remains. Around 55% of the mercury that is lost during these processes is released into the atmosphere in the form of elemental mercury, while approximately 45% enters the rivers as metallic mercury (in GUTLEB et al., 1997).

It has been previously demonstrated by the Project that fish with levels higher than 0.1 mg of total mercury/kg fresh weight (the proposed tolerable level for *Lutra lutra*, the Eurasian otter) were present not only in the river Manu and its tributaries but also in many oxbow lakes; this despite the fact that gold mining does not occur within the Reserve itself (GUTLEB et al., 1997). It was decided to further investigate on a long-term basis, the presence and levels of inorganic, methyl and total mercury in fish muscle tissue offish species which feature prominently in the Giant Otter's diet.

The four fish species targeted were the Bujurki (*Satanoperca* sp.), the Boca Chico (*Prochilodus caudifasciatus*), *Steindachnerina* sp. (for which there does not appear to be a local name), and the Huasaco (*Hoplias malabaricus*), representing 44%, 28%, 7% and 6% respectively of the Giant Otter's diet (KHANMORADI, 1994). Moreover, since oxbow lakes play an important role in Giant Otter habitat choice, we decided to focus on four cochas, those which we considered would best reflect the spectrum, if any, of levels of mercury contamination in the area. Samples of fish muscle tissue were collected in Cochas Cashu, Salvador, Limonal and Capiripa, that is, at locations indicating recent evidence of Giant Otter presence, with decreasing distance from the gold mining zone. Cocha Cashu is situated well within the National Park, Cocha Salvador is in the Reserved Zone, Cocha Limonal lies at

the mouth of the Manu river near the border of the Reserved Zone, and Cocha Capiripa, is located on the Madre de Dios river, entirely outside the Manu Biosphere reserve but close to the gold mining area. Each of these cochas will be sampled in every future census, thereby establishing research continuity. Within the two 1999 Manu censuses and as part of the ongoing mercury study, samples of fresh otter scat were collected in four cochas, whenever the possibility arose of doing so without disturbing the otter groups. All samples are currently being analysed for mercury content.

Pacaya Samiria National Reserve Giant Otter Project

During recent years, there have been sighting reports of Giant Otter groups in the Pacaya Samiria National Reserve (PSNR) in central Peru. In order to confirm this data, the project "Determination of the Distribution and Abundance of the Giant Otter (*Pteronura brasiliensis*) in the Pacaya Samiria National Reserve" was initiated in June 1999, financed by FZS and carried out by a Peruvian researcher, Sandra Isola. The key objective was to contribute towards the conservation of this species, by gaining knowledge of the actual population characteristics, habitat conditions and availability, and current threats.

The first fieldwork period, from June to December 1999, has been completed and preliminary results may be advanced. In the Yanayacu river basin, 46 sightings were made and at least 18 different individuals were identified. Sightings were largely of solitary individuals, but 2 groups of 7 animals each were also encountered, the largest in the basin. This watershed is the most important in terms of Giant Otter abundance.

In the Pacaya river basin, sightings were principally concentrated on Tipishca Cahuana ('tipishca' signifies a slow-moving branch of the river) and Cocha Yarina (middle Pacaya). On Cocha Yarina, we encountered one group of 8 individuals, the only family which included a cub. One adult and the cub were clearly identified by their throat markings. The remaining 3 sightings of groups were on Cahuana. In the first, we encountered 9 specimens, 3 of which were identified. The second group numbered 4 specimens, 2 identified, and the last group comprised 7 individuals, 6 identified. The concentration of sightings on the middle Pacaya, a total of 28 with 13 specimens identified, makes this area important for future investigations.

The pressure exerted by people who enter the Reserve illegally, the limited control and tourism infrastructure, the lack of a comprehensive environmental education programme as well as of gamewarden capacitation together result in an inappropriate management of Giant Otter habitat. A sensitization programme was initiated with children, fishermen and gamewardens of the Reserve, addressing the importance of species conservation. It was and will be very useful to continue with the diffusion of 'Quedan Muy Pocos' Giant Otter posters.

Publications and Promotion

The September 1998 International Symposium for the Conservation of the Giant Otter, organised by FZS and INRENA, provided an excellent opportunity to share and learn from the work experiences of those involved with Giant Otter investigation and conservation. The publication (in Spanish) of the symposium summary report, although delayed due to organizational problems within INRENA, represents a significant step towards a formulation of the national conservation strategy for this flagship species (copies may be ordered via e-mail at 4 US$ apiece, excluding postage and packing).

Christof Schenck's doctorate thesis, first published in German, has been translated into Spanish, and is entitled "Lobo de Rio (*Pteronura brasiliensis*) - Presencia, uso del hábitat y protección en el Perú" (copies may be ordered via e-mail at 10 US$ apiece excluding postage and packing). Continued demand led to the repeated production of 1000 "Quedan Muy Pocos" Project awareness posters.

Education

During 1999 the foundations were laid to carry out the "Pepe, el Lobo de Rio" colouring book activity in the course of 2000. Approximately 4000 children living in and around three protected areas, Manu, Tambopata-Candamo and Pacaya-Samiria, and in 4 regionally important cities, Lima, Cuzco, Puerto Maldonado and Iquitos, should take part. Proper follow-up of the material distribution, book colouring

and drawing competition process, as exemplified during the execution of this activity in 1998 in Pacaya Samiria, will be strongly encouraged.

Note 1: This is a minimum estimate based on known different throat markings from both censuses, plus a number of juveniles born in 1999 for which no throat markings were obtained.

Note 2: The terms 'old' and 'fresh' are relative and reflect a balance of estimates (based on personal experience) of factors such as smell, insect activity, soil dampness, clarity of tracks, weather conditions, etc. 'Fresh' refers to a den or campsite estimated to have been used by Giant Otters within the previous week. 'Old' refers to dens/campsites which have not been visited by Giant Otters for at least a week. Once a campsite or den is estimated to be more than one week old, it becomes increasingly difficult to 'calculate' even an approximate age.

ACKNOWLEDGEMENTS *- We would like to thank the Frankfurt Zoological Society-Help for Threatened Wildlife (FZS) for their financial support. We are grateful to INRENA, especially the Heads of the Manu Biosphere Reserve and Tambopata-Candamo Reserved Zone for their co-operation. Sincere thanks are also due to the Peruvian NGO Pro Naturaleza, FANPE, and our Peruvian field assistants. The project in Pacaya Samiria received additional collaboration from the World Wildlife Fund and the Conservation Data Centre at La Molina University.*

REFERENCES

Cañas C. (1998). Lago Valencia: un área de pesca comercial de gran importancia en Tambopata, Madre de Dios. Conservation International. 17 pp.

Gutleb, A.C., Schenck, C. & Staib, E. (1997). Giant Otter (*Pteronura brasiliensis*) at Risk? Total Mercury and Methylmercury Levels in Fish and Otter Scats, Peru. *Ambio* **26:** 511-514.

Khanmoradi H. (1994). Untersuchungen zur Nahrungsökologie der Riesenotter (*Pteronura brasiliensis*) in Peru. Diplomarbeit. Ludwig-Maximilian-Universität München. 121 pp.

MacLellan C. (1996). Small-scale Gold Mining and Protected Area Management: An Assessment and Policy Plan for the Tambopata-Candamo Reserved Zone, Peru.

Ramirez J. (1998). Informe sobre Inspeccion Río Malinowski.

Schenck, C. (1996). Vorkommen, Habitatnutzung und Schutz des Riesenotters (*Pteronura brasiliensis*) in Peru. Diss. Univ. München; 180 pp.

Schenck, C., Groenendijk, J. & Hajek, F. (1998). Giant Otter Project in Peru Field Trip and Activity Report - 1998. *I*UCN Otter Spec. Group Bull. 16**:** 33-42.

Schenck, C. & Staib, E. (1995). The Giant Otter Project in Peru 1995. IUCN Otter Spec. Group Bull. 12: 25-30.

Schenck, C. & Staib, E. (1995). News from the Giant Otter Project in Peru. IUCN Otter Spec. Group Bull. 11: 5-8.

Schenck, C. & Staib, E. (1992). Giant Otters in Peru. IUCN Otter Spec. Group Bull. 7: 24-26.

Schenck, C., Staib, E. & Storch, I. (1997). 1996 News from the Giant Otter Project in Peru. IUCN Otter Spec. Group Bull. 14: 13-19.

Staib, E. & Schenck, C. (1994). Giant Otters and Ecotourism in Peru. IUCN Otter Spec. Group Bull. 9**:** 7-8.

RESÚMEN: Reporte de actividades y campañas del proyecto Nutria Gigante en Perú

En 1999, el proyecto Conservación de la Nutria Gigante de la Sociedad Zoológica de Frankfurt tomó nuevo impetu con la presencia a tiempo completo de personal en Perú. Dos censos fueron realizados en la Reserva Manu, se comenzaron nuevos estudios en los ríos Palma Real y Patuyacu, se realizó un primer estudio sobre el estatus de las nutrias en el río Malinousqui, se actualizó el plan de manejo para el Lago Sandoval, y se relevó nuevamente el Lago Valencia.
El proyecto ha llevado adelante anualmente censos de nutrias gigantes en la Reserva Manu desde 1990, con las excepciones de 1997 y 1998. Para compensar el vacío de información correspondiente, se realizaron 2 censos en 1999, uno antes y otro después de la estación húmeda. En el primer censo se observó un total de 47 individuos, 2 solitaries y el resto formando parte de 11 grupos diferentes, el mayor de estos conformado per 6 individuos. El tamaño promedio de los grupos fue 4.1 individuos. En el segundo censo se contaron un total de 55 individuos, 3 solitaries, y el resto conformando 9 grupos distintos. El grupo más grande estaba formado per 10 individuos y el tamaño promedio de los grupos fue de 5.8 individuos. Per lo menos 13 de los individuos registrados durante estos censos se conocían de los primeros 6 censos. Durante los censos se tomaron muestras de fecas para estudiar el contenido de mercurio de las mismas, como parte de los estudios que se están realizando sobre el efecto del mercurio (proveniente de la actividad minera) en las nutrias.

En el pasado el proyecto se ha enfocado en grandes ríos y lagunones (cochas). Para complementar estos estudios, comenzó uno nuevo en 1999 para examinar la dinámica de los grupos de nutrias y el uso de hábitat en ríos menores. El objeto del mismo es conocer significancia de estos ríos pequeños para la supervivencia de la especie en zonas en las que las cochas son pocas y están distantes. Los ríos Palma Real y Patayucu fueron visitados por primera vez en 1998. La presencia de nutrias fue confirmada mediante observación de animales, madrigueras y otros rastros de los mismos. Creemos que es posible que al menos durante la estación seca hasta 3 grupos de nutrias habiten el sistema conformado por estos ríos.

In 1999 se relevo el río Malinosqui por primera vez. La cantidad de cochas con agua en el río es baja (al menos durante al estación seca), por lo que es poco probable que la densidad natural de la especie en el área, independientemente de la actividad humana, haya sido alta alguna vez. Sin embargo, la cantidad actual de nutrias es tal que parece probable que el deterioro de la calidad del hábitat y el impacto directo de las actividades mineras en el río, están afectando la población local.
En 1998, debido al impacto negative debido al incremento de la presión humana en Lago Sandoval, y siguiendo una petición del Institute Nacional de Recursos Naturales, el proyecto preparó una propuesta de manejo para el lago. Este manuscrito fue revisado para incluir mapas más detallados y las observaciones realizadas durante las visitas realizadas en 1999. La nueva versión fue enviada al INRENA, ONGs y otras instituciones para que hicieran sus comentarios. Luego de incorporar las sugerencias realizadas, el documento fue enviado a 8 empresas que hacen turismo en la zona para recibir sus comentarios. Aunque aún faltan los comentarios de la mayoria de las empresas, el INRENA ha aprobado el plan de manejo.

En 1998 se observaron nutrias en el Lago Valencia tras 10 años sin registros en la zona. Durante 1999 no se observaron ni nutrias ni rastros, sólo 2 madrigueras viejas, usadas por las nutrias en 1998.

Un minimo de 79 nutrias gigantes diferentes fueron observadas en la Reserva Manu, los ríos Palma Real y Patuyacu, el río Malinousqui, y los lagos Capiripa y Sandoval. De estos, fue posible registrar 68 manchas gulares distintivas. Estas son la base del proyecto, la información sobre la dinámica poblacional que puede derivarse de las mismas es esencial para el desarrollo de principios de manejo y lineamientos de conservación de la especie.

Finalmente, en junio de 1999 se comenzó el proyecto "Determinación de la distribución y abundancia de la nutria gigante (*Pteronura brasiliensis*) en la Reserva Nacional Pacaya Samiria", financiado por la FZS, y a cargo de una investigadora peruana.