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# IUCN
# OTTER SPECIALIST GROUP BULLETIN

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# IUCN OTTER SPECIALIST GROUP BULLETIN

The IUCN Otter Specialist Group Bulletin appears biannually. Articles, reports, symposium announcements and information on recent publications are welcome. All submissions should be typed double-spaced. The submission of an electronic manuscript on diskette or by e-mail is strongly recommended. Reports should not exceed 2000 words in length, i.e. not to exceed four printed pages, including diagrams and tables. Articles may be longer. Diagrams, maps and tables should be included as a photocopy ready for reprint! A short abstract for translation into Spanish and French has to be included!
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**NOTE FROM THE EDITOR**

Unfortunately, only 25% of the persons on my old address list responded this year to renew their subscription, although the subscription remains free for those who cannot afford, or do not want, to contribute. Possibly, many people on my address list are no longer working with otters and are no longer interested in receiving the Bulletin. This issue is not sent to the 'silent' 75% anymore, but only to those who responded by sending the leaflet, published an article over previous years, or served as reviewers. As there is a steady flow of requests for copies from new people, the wide distribution of the IUCN OSG Bulletin to those who are actively interested and working with otters will continue.

The review process is a guarantee of high scientific quality in publishing. The (mostly) anonymous review process helps authors to maximise the potential of their research and helps readers to understand its purpose. It is time consuming, unpaid and absolutely vital. I would like to thank all reviewers for their expert assistance over the last two years and apologise if I have inadvertently overlooked any referee in the list below: Michaela Bodner, Hanne Christensen, Liane Geidezis, Lee Harding, Silke Hauer, Marjana Honigsfeld, Jutta Jahrl, Michael Knollseisen, Andreas Kranz, Hans Kruuk, Lionel Lafontaine, Geoff Liles, Aksel Bo Madsen, Chris Mason, Jordi Ruiz-Olmo, Sheila Sykes-Gatz, Paul Yoxon.

Many thanks to James Fairley, Ulrich Fehlberg, Juan Pablo Gallo Reynoso, Silke Hauer and Don Jefferies, who have all provided information on recent publications.

Kevin Roche (Czech Republic) again functions as a reader for those contributions which have not been reviewed by at least one native speaker; whilst Alvaro Soutullo (Uruguay) and Lional Lafontaine (France) translated the abstracts into Spanish and French. I also have to thank the 'Otter Bulletin Team' for their continuing help, namely Hans van den Berg and Annemarie Gerritsen (Wageningen), and Els Hoogsteede-Veens and Erwin Hellegering of GRAFISCH SERVICE CENTRUM VAN GILS (Wageningen).

Finally, I can now inform you that the work on the proceedings of the conference held in Trebon in 1998 is finished and that the book is already printed! Please contact me for details if you want to receive a copy.

# IUCN/SSC OSG GROUP

## FROM THE CHAIRMAN'S DESK

When I recently asked the OSG Coordinators for some aspects, which should be mentioned in this issue of our Bulletin I was really happy to learn from their answers just how many activities are going on initiated by OSG members.

Jan Nel, our Continental Coordinator for Africa, informed me that Michael Somers has completed his project on "Habitat utilisation by Cape clawless otters *Aonyx capensis*", has received his PhD, and has been appointed as Senior Lecturer at the University of Transkei. He will be starting up some new projects on otters (both *Aonyx capensis* and *Lutra maculicollis*) in the Eastern Cape Province of South Africa as soon as he takes up his position. Congratulations also from my side to Michael Somers.

Assisted by Jan Nel, Hélène Jacques and Anabela Trindade, I also finished the preparation of a leaflet entitled "Information wanted on African otters", which will be available soon in English, French and Portuguese, and additionally as a pdf file via internet in German, Afrikaans and, hopefully, in some other languages. In parallel, Anna Krekemeyer, our GIS officer at Aktion Fischotterschutz, has prepared a databank for information on the distribution of African otters, which we hope to receive by the questionnaire included in the leaflet. Though a little step, it is a step forward in increasing our knowledge on the distribution of otters in Africa.

Many activities were reported by Padma de Silva, our Continental Coordinator for Asia. Two workshops took place recently, which I had the pleasure of joining. Organised by the Otter Research Group of Japan, the Kien Giang Department of Agriculture and Rural Development, and CARE International, a workshop on "Conservation and Public Awareness of Otters in U Minh Thuong Nature Reserve, Vietnam" was held at Rach Gia on February 25-26. In collaboration with the Otter Research Group of Japan, the Wildlife Trust of India and the IUCN/SSC Otter Specialist Group, a second workshop took place at New Delhi on March 3-4 on "Otters as Ambassadors of Wetlands". I hope that the proceedings of these two meetings will be available soon.

Research projects in Asia were enabled by funds provided to the Asian Otter Secretariat from Columbus Zoo, USA. The projects are related to aspects such as "Survey of otters in the uplands of Sri Lanka" (researcher: Padma de Silva), "Survey on the hairy-nosed otter in Phru Toa Daeng peat swamp forest in Thailand" (researcher: Budsabong Kanchanasaka), "Survey on the hairy-nosed otter in U Minh Thuong forest in Vietnam" (researcher: N.X. Dang), "The use of otters in fishing in Sunderbans, Bangladesh" (researcher: M. Feeroz), "Survey of otters in Lake Periyar, India" (researcher: S.A. Hussain), and "Survey of the hairy-nosed otter in WayKambas National Park, Indonesia" (researcher: Reza Lubis).

Some of these projects received additional funds from the Otter Research Group of Japan and also from the International Otter Survival Fund, UK. In particular, these funds are given for the work on *Lutra sumatrana*. Presence of this species has only been confirmed so far for Thailand and Vietnam. Further, several countries are involved in preparing awareness materials on otters for the general public, e.g. Malaysia, Vietnam, Thailand, and Sri Lanka. So, from my point of view, our Asian colleagues are doing quite a good job.

This is also true if I look at what Jessica Groenendijk, our Species Coordinator for the giant otter, reports on activities related to *Pteronura brasiliensis* in Latin America. Together with Frank Hajek, she was able to start an environmental education program at Lake Sandoval in Peru. This oxbow lake, within the Tambopatata National Reserve, hosts a group of giant otters, but is also a preferred education and nature tourism destination for both inhabitants of the nearby town of Puerto Maldonado as well as national and foreign tourists. More than 5,000 people visiting this area per year cause so much disturbance, especially to the giant otters, that the otters stopped reproducing. Now structured

environmental education activities are to be implemented to chanalise tourism and to train people how to behave in such an ecosystem.

Another activity of Jessica and Frank's Frankfurt Zoological Society Giant Otter Project could become an important contribution to the conservation of the giant otter over its whole range. They are organising a two-week Regional Giant Otter Survey Methodology and Habitat Management Field Training Course, to take place towards the end of 2002, visiting two protected areas in south-eastern Peru. The objectives of the course are to train a maximum of five persons from all over South America who are planning to start (or have recently begun) projects involving giant otter surveys and monitoring, and habitat management. The idea is to begin to ensure that the same survey and monitoring methodology is used in different countries, and that results can be usefully compared according to different habitats. In addition, the course will address the management of tourism so that it can become a force for conservation rather than a threat to the species. For more information, contact Jessica Groenendijk or Frank Hajek at fzsgop@terra.com.pe

Some weeks ago, I not only had the pleasure of observing sea otters on the coast of California but also of meeting Andrew Johnson, the project manager of the unique Monterey Aquarium, Matthew Rutishauser, the science director of Friends of the Sea Otter, and David Jessup, the senior wildlife veterinarian and supervisor of the Marine Wildlife Veterinary Care and Research Center of the California Department of Fish and Game. I was pleased to see the extensive precautions, which are taken so as to be prepared for the rescue of otters in the case of an oil spill, as well as the numerous research projects on sea otters and the very professional rehabilitation program of the Monterey Aquarium for orphaned sea otter cubs. I hope that this visit could lead to a closer cooperation between the OSG and the sea otter people.

Whether these efforts will have been successful may be seen at the next International Otter Colloquium which Tom Serfass, our Continental Coordinator for North America is now starting to prepare. As a first rough idea, June 2004 to be the date when this event will take place at the Frostburg State University in Maryland/USA.

European otter people should also mark a date in their diary. The 4th European Congress of Mammalogy will be held from July 27 until August 1, 2003 in Brno, Czech Republic. Michaela Bodner, our Continental Coordinator for Europe, together with Marcela Kucerova, our National Representative for the Czech Republic, are planning a specific otter workshop and a meeting of the European section of the OSG as part of this congress. Further good news related to the Czech Republic can be announced referring to the proceedings of the VII. International Otter Colloquium, which was held in Trebon/Czech Republic in 1998. Thanks to the enormous efforts of Arno Gutleb and Jim Conroy, the various attempts to publish these proceedings finally succeeded. We all should thank the editors of this special issue of our Bulletin because it contains so much important information on otters that it would have been a shame to loose it. The efforts of Amo and Jim also deserve special appreciation as, in parallel, they edited, together with Paul Yoxon, the proceedings of the First Otter Toxicology Conference, which was held in September 2000 on the Isle of Skye.

An interesting discussion is going on in Europe about the necessity of otter release projects. Jordi Ruiz-Olmo, our National Representative for Spain, published a remarkable conservation plan for the otter in Catalonia and reports also on the re-introduction project. This involved the release 42 otters, originating from Extramadura, and took place from 1995 until 2000 on the river basins of the Rivers Muga and Fluviaà. As a result of the very extensive evaluation of this project he came to the conclusion that "despite the contribution that has been made to the recovery of this semi-aquatic carnivore in NE Catalonia, it is modest in comparison to the spontaneous recovery that has occurred in the Western half of Catalonia. Habitat conservation and efforts to improve the quality of the water (non-intrusive conservation) are considered to be more effective than re-introduction (intrusive conservation through the handling of individuals of extraneous origin), more economical and they provide overall benefits for the whole ecosystem". Despite this experience in Spain, and in spite of the remarkable recovery of the otter to the west, which is obvious for instance from my recently published report on the results of the current otter survey in Lower Saxony (the neighbouring German federal state to the Netherlands), and in spite of the findings of genetic differences in the European otter population (e.g. by Ettore Randi and by John Dallas), the Dutch government announced recently that approximately 40 otters from Belarus and Latvia will be released in the Netherlands, starting with 12 specimens in May/June 2002.

Many Dutch and German conservationists protest against this project, not the least because the Dutch government ignored the decision of the Otter Specialist Group, that all otter release projects in Europe need to be evaluated by the Reintroduction Advisory Committee (RAC) of the OSG. There are some initiatives to take this matter to the court, possibly via the European Commission or the European Court of Justice, especially because some people feel that this project offends against some regulations of the Fauna-Flora-Habitat-Directive. Such a judicial inquiry could produce interesting results for the further work of the RAC and could possibly define the general framework for release projects in more detail.

Finally, I have to announce that, with the help of my assistant Mark Ehlers, we have started to establish our own OSG website. My organisation, Aktion Fischotterschutz, will host this website on our server. We have already prepared the first pages and are currently trying to reserve our own OSG address. As soon as this website will be available, all members of the OSG will be informed immediately. Distribution of such information will be much easier now due to a special e-mail listserver for OSG members, kindly established by Janice Reed-Smith and Bob Fetterman.

This abbreviated summary will confirm what I said in the beginning: there are many activities going on initiated by OSG members. I am aware that there are others, as for instance our ongoing efforts to prepare the new global Otter Action Plan. I hope that in my report in the next issue of our Bulletin, I can not only describe the progress of this voluminous task, but also as many new projects as I was able to introduce this time.

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**A R T I C L E**

# OTTERS AND FYKE NETS -SOME ASPECTS WHICH NEED FURTHER ATTENTION

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**Abstract:** Eurasian otters (*Lutra lutra*) become attracted by fishes caught in fyke nets, lobster creels or other fishing gear, and they sometimes are drowned by trying to get access to these fish. Numerous publications describe this problem and the attempts to avoid this kind of loss. By comparing these data with unpublished data provided from different European countries, and in trying to prepare recommendations for fishermen, it became obvious that there are some results which are inconsistent or founded on too small a database to offer a background for adequate conservation recommendations. Therefore, some aspects are highlighted here to encourage otter conservationists and researchers to collect more data and to contribute to a more reliable database for conservation measures. In particular, an improvement in the knowledge of fishing techniques and of fishing gear used by fishermen seems to be necessary for a better understanding of the factors which influence the number of otters drowned.

## INTRODUCTION

Whilst preparing the third and completely revised edition of the brochure for fishermen on otters and fyke nets (REUTHER, 2001), first published by Aktion Fischotterschutz (German Association for Otter Conservation) in 1991 (RÖCHERT and REUTHER, 1991), some questions arose about this subject. This was due to the fact that several colleagues offered new and unpublished data. Whilst processing this data and in trying to prepare recommendations for fishermen, it became clear that there were some results which are inconsistent or founded on insufficient data to offer a background for adequate conservation recommendations. In the following article, therefore, some aspects will be highlighted to encourage otter conservationists and researchers in other countries to collect more data and to contribute to a more reliable database for conservation measures.

## ASPECTS WHICH NEED FURTHER ATTENTION

Eurasian otters (*Lutra lutra*) are attracted by fishes caught in fyke nets, lobster creels or other fishing gear, and they are sometimes drowned by trying to get access to these fish. Numerous publications describe this problem and the attempts to avoid this kind of loss (JEFFERIES, 1989, 1993; JEFFERIES et al, 1984; JEFFERIES et al, 1989; MADSEN, 1986, 1991; REUTHER, 2001; RÖCHERT and REUTHER, 1991). However, some aspects of this conservation problem need further attention.

### The reliability of the database

In many countries or regions, data on otters found dead are collected systematically and this information is an important source for gaining knowledge on threats and for various estimations of population status. However, this data only represents part of the problem, as it only gives us information on mortalities in otters that are found, rather than information on all the otters that die in the wild, i.e. many otters will die and never be found by humans. This has the potential to bias the data set in favour of road kills and fishery deaths, possibly leading to misconceptions about the major threats to otters.

Another problem is caused by the fact that, in many cases, the cause of death cannot be definitely identified. Nevertheless, in many published studies, the proportion of unidentified causes of death is

astonishingly low. When comparing this data with the high proportion of otters, which died in captivity resulting from unidentified or unclear causes in post mortem examinations I have seen, this is really surprising. Alternatively, some losses caused by trauma, such as road casualties, drowning, or shooting, are clearly identifiable, though in some cases it is not clear as to what extent illnesses or other impairments of the animals were also involved.

A special problem is related to the speculation that fishermen do not report all otters found dead in fishing gear. It is difficult, if not impossible to get evidence or specific numbers for this assumption. However, in discussions with fishermen, the argument has arisen several times that 'the reporting of dead otters might result in more restrictions for fishermen and therefore such accidents should be concealed'.

**Comparison of percentages of otters killed in fyke nets or fishing gear**

There are numerous publications giving the number or the percentage of otters killed in fyke nets or other fishing gear as a proportion of all otters found dead in a specific area and period. An overview is given in Table 1.

**Table 1**. Proportion of otters killed in fishing gear as reported from different European countries and regions

| Country/Region | Period | No. all otters found dead | Proportion killed in fishing gear | Source |
|---|---|---|---|---|
| Ireland | 1982-1992 | 628 | 14% | O'SULLIVAN and FITZGERALD, 1995 |
| Sweden | 1970-1979 | 53 | 13% | SANDEGREN et al., 1980 |
| | 1980-2000 | 166 | 8% | RODS, unpubl. data |
| Finland | 1967-1991 | 101 | 41% | SKARÉN, 1992 |
| | 1990-1997 | 114 | 26% | RUDBÄCK and STJERNBERG, 1999 |
| Norway | 1978-1989 | 410 | 35% | HEGGBERGET, 1991 |
| | 1977-2000 | 2.602 | 27% | HEGGBERGET, unpubl. data |
| Denmark | 1967-1981 | 76 | 72% | SCHIMMER, 1981 |
| | 1980-1985 | 53 | 55% | MADSEN, 1986 |
| Poland | 1982-1986 | 92 | 22% | WLODEK et al., 1989 |
| Germany / Schleswig -Holstein | 1955-1980 | 50 | 26% | HEIDEMANN, 1981 |
| Germany / Neidersachsen | 1951-1978 | 69 | 20% | REUTHER, 1980 |
| Germany / GDR | 1945-1974 | 486 | 36% | STUBBE, 1980 |
| Germany / GDR | 1975-1984 | 322 | 26% | STUBBE, 1989 |
| Germany / GDR | 1985-1989 | 198 | 18% | STUBBE etal., 1993 |

Such comparisons should be made with great care as they do not automatically reflect a real relationship. As is shown in Figure 1, the percentage of otters drowned in fyke nets in Germany over the period 1985-2000 seems to show a clear linear trend of decrease from 21.6% in 1985 to 2.0% in 2000. Looking only at the numbers of otters drowned in fyke nets, this decrease is much lower and the linear trend seems to be more or less stable (Figure 2). This is due to the fact that the total number of otters, which were found dead, increased markedly over this period (from 37 in 1985 to 198 in 2000), the majority of the 1,769 otters represented in this statistic being killed on roads (n = 1,344). Accordingly, the number of traffic casualties show a clear linear trend of increase, whilst the other causes of death referring to the total number remain more or less stable.

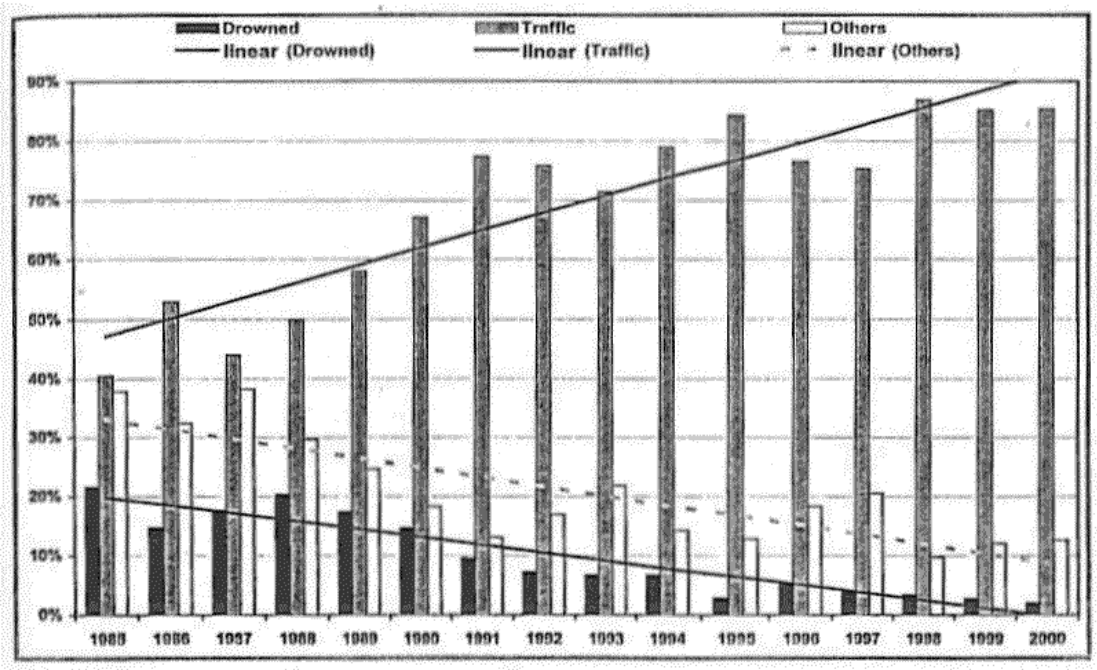


**Figure 1**:**.** Percentages and Linear Trends of Causes of Death of Otters found Dead in Germany over the Period 1885 - 2000 (n=1,769).

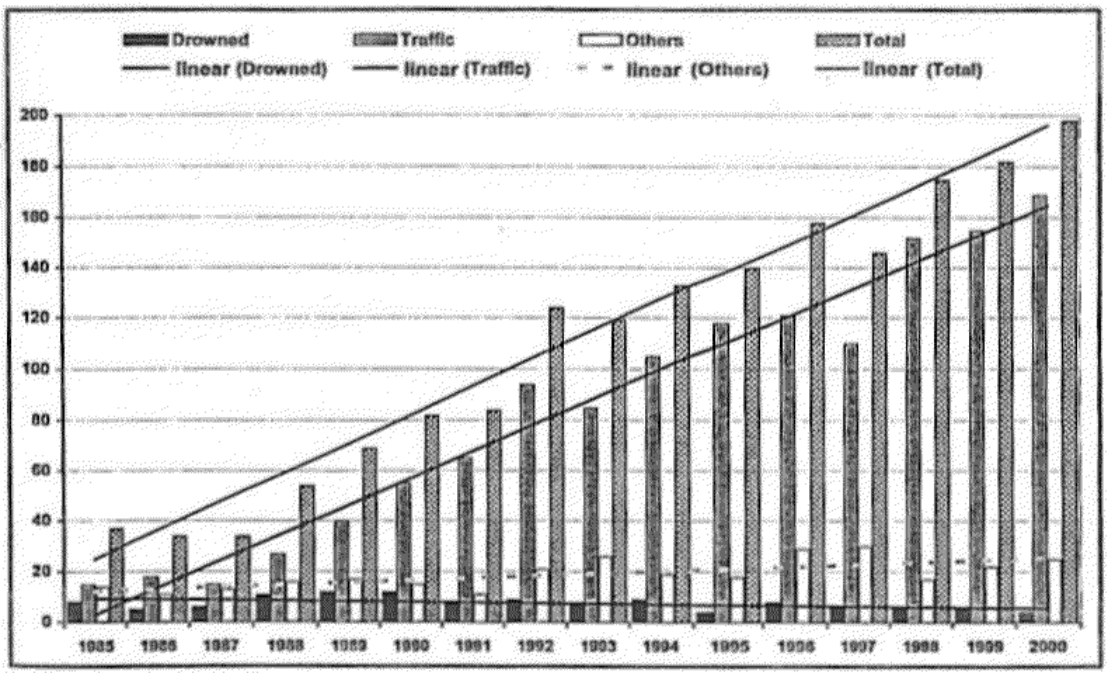


**Figure 2**. Numbers and Linear Trends of Causes of Death of Otters found Dead in Germany over the Period 1885 - 2000 (n=1,769).

Attention must also be paid to regional differences, as can be shown by the example of Norway (Figure 3). The proportion of otters killed in fishing gear for the whole country over the period 1995-1999 seems to be only half that found ten years earlier in the period 1985-1989. After splitting the data into three regions with different intensity of fyke net use, clear regional differences become obvious. In West and Central Norway, the decrease in the proportion of otters killed in fishing gear over 1985-1989 was less than one third of that found over 1995-1999. However, in North Norway the proportion of otters drowned in fishing gear decreased by nearly two thirds between these two periods.

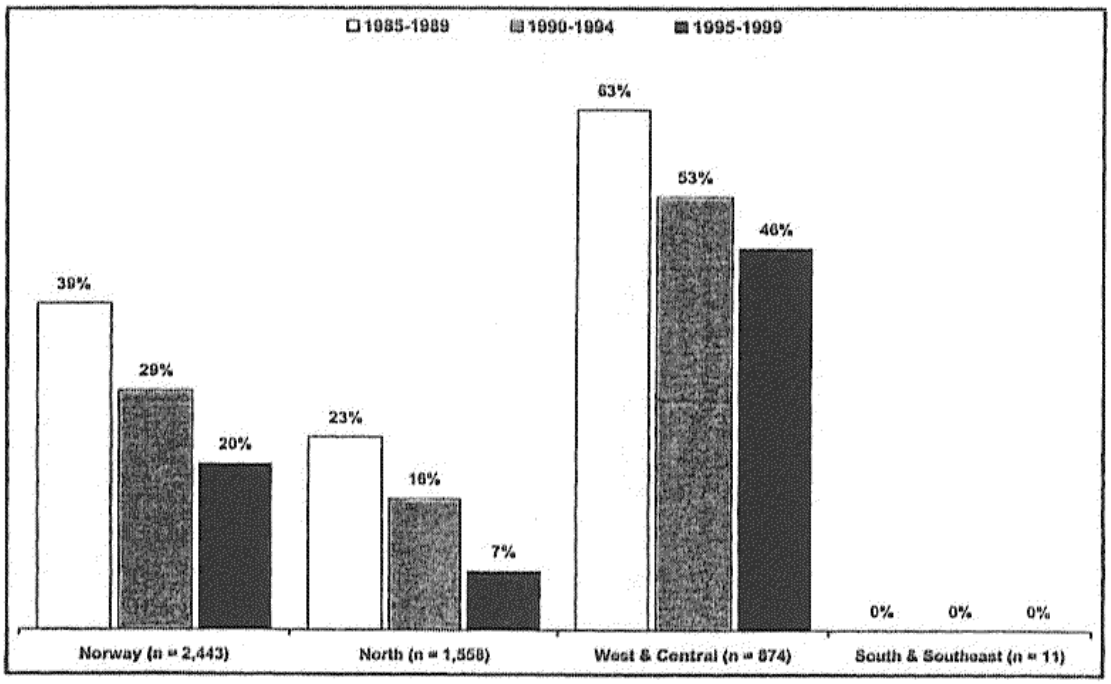


**Figure 3**:Regional differences in the percentage decrease of otters killed in fishing gear in Norway (n=2,443) (Heggberget, unpubl. data).

**Seasonally**

To date, there are only two publications available giving data on the seasonal distribution of the drowning of otters in fyke nets. They show some interesting differences (Figure 4). It appears that, in the former East Germany, such accidents occur all year round with the highest risk over the period September to November (STUBBE et al., 1993). The latter is also true in general for Denmark (MADSEN, 1991). Though this increasing risk seems to start one month earlier in this country and here the highest percentage is related to the month of May.

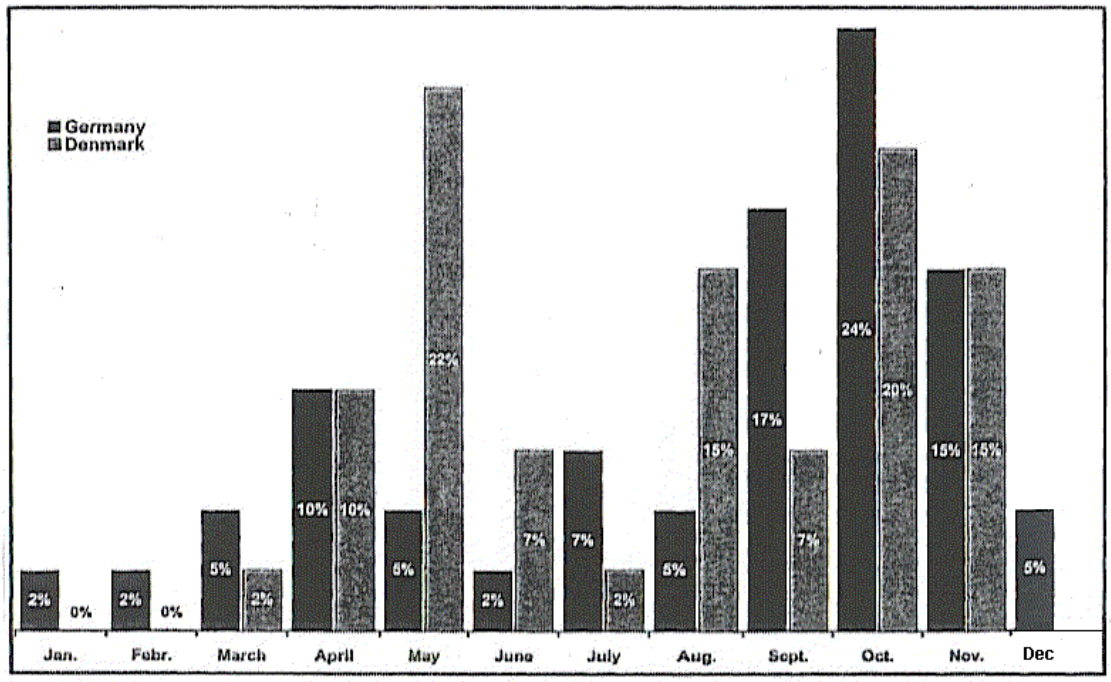


**Figure 4**:Seasonal differences in the percentage of otters killed in fishing gear, as given by STUBBE et al (1993) for East Germany (n=47) and MADSEN (1991) for Denmark (n=41).

**Age and sex of drowned otters**

A comparison of five publications (FAIRLEY, 1972; MADSEN, 1991; STUBBE, et al., 1993; TWELVES, 1983; UTHLEB et al., 1992) presenting data on the age of otters drowned in fishing gear, as well as the unpublished data of Thrine Heggberget for Norway and of Anna Roos for Sweden, produced some interesting differences (Figure 5). Whilst the majority of the otters drowned in Germany, Denmark and Norway were two years and younger, in Sweden, Ireland and on the Scottish coast, the majority of drowned otters were two years and older.

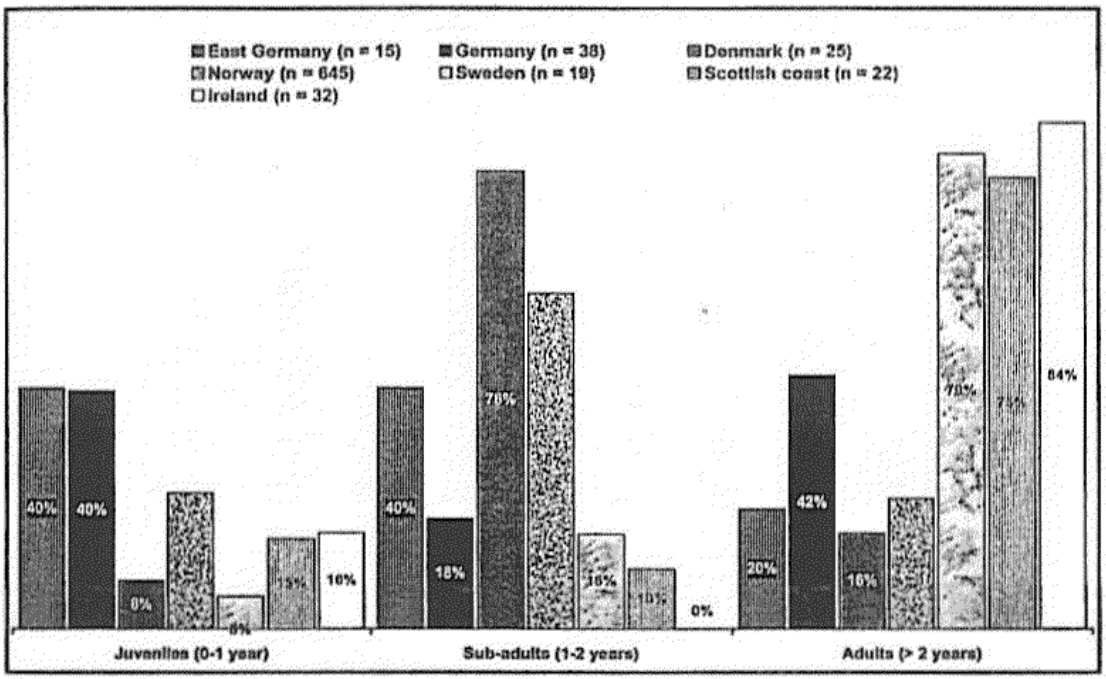


**Figure 5**:Differences in the percentage of age classes of otters drowned in fishing gear in different European regions (for origins of data see text).

In the five publications mentioned above the sex of the otters was also reported. The data show the surprising fact that the sex-ratio of drowned males to females over all age classes varies from 1:0.25 in Germany, to 1:0.77 in Denmark, to 1:1 in Ireland and to 1:5.66 on the Scottish coast. Clear regional differences are also obvious for age classes. In Germany, more than 80% of the juveniles were male, whilst in Ireland, females are mainly affected. In Denmark and on the Scottish coast, however, the male-female-ratio was 1:1 for this age class. In Denmark, similar results were obtained for sub-adults as juveniles. In Germany, males dominated the sub-adult class, whilst all sub-adults found in lobster creels were females on the Scottish coast. Of adult otters drowned, the majority were male in Germany and Denmark, female on the Scottish coast, whilst the proportion of both sexes was nearly the same in Ireland.

**Dimension of guards**

JEFFERIES et al. (1984) recommended some maximum measurements for the openings of guards and fishing equipment designed to exclude otters. On the basis of the body dimensions of five females and four males (Table 2) they calculated the following openings to be sufficient:

- Flexible nets 75mm bar length (circumference 300mm)
- Rigid rings 95mm diameter
- Rigid square grids 85mm bar length (diagonal 105 mm).

**Table 2**: Body dimensions of otters from Great Britain as referred to in JENKINS et al (1984)

| | **Females** | | | **Males** | | |
|---|---|---|---|---|---|---|
| **n Individuals** | | 5 | | | 4 | |
| **n Measurements** | | 4 neck, 5 chest | | | 4 neck, 3 chest | |
| **Age** | | unknown | | | unknown | |
| **Weight** | | 5,100 - 7,300g | | | 8,100 - 8,700g | |
| | range (mm) | mean (mm) | S.D. | range (mm) | mean (mm) | S.D. |
| **Neck** | | | | | | |
| Circumference | 230 - 275 | 258.8 | 20.16 | 290 - 305 | 297.5 | 6.45 |
| Calc. Diameter | 73.2 - 7.5 | 82.4 | 6.42 | 92.3 - 97.1 | 94.7 | 2.05 |
| **Chest** | | | | | | |
| Circumference | 305 - 350 | 329.0 | 20.12 | 355 - 390 | 373.3 | 17.56 |
| Calc. Diameter | 9.1 - 111.4 | 104.7 | 6.41 | 113.0 - 124.1 | 118.8 | 5.59 |
| Calc. Elliptical Length | 110.7 - 127.1 | 119.5 | 7.31 | 128.9 - 141.6 | 135.6 | 6.38 |
| Calc. Elliptical Breadth | 81.6 - 93.6 | 88.0 | 5.38 | 95.0 - 104.3 | 99.9 | 4.70 |

The otter's body widens from the head to the neck and then to the shoulders and to the chest. The latter represents the largest dimension relevant for this topic. The otter's body is very flexible, allowing it to penetrate small openings in relation to their weight. In particular, the hindquarter and the forequarter cross sections can be reduced in size by manipulating the limbs.

Whilst handling immobilised otters in the enclosures of the German Association for Otter Conservation, it was possible to take measurements of the body dimensions of 11 females and 13 males. Some individuals could also be measured at different ages and times of the year. All measurements were taken as circumferences at the neck and at the chest at their maxima just before the chest and just after the forelegs. From the circumferences the diameters were calculated assuming a circle. Because the chest is roughly elliptical in cross section, the greatest ('elliptical length') and the smallest ('elliptical breadth') diameters were calculated for the chest, assuming an egg-shaped elliptical cross section and using the formula of ROMANOFF and ROMANOFF (1949) for such ellipses, as previously done by JEFFERIES et al. (1984). For both, the neck and the chest, the measurements were taken as 'loose' circumferences, by running the measuring tape around the body without pressing it, and as 'narrow' circumferences, by pressing the tape as much as possible around the body.

The dimensions recommended by JEFFERIES et al. (1984) should be sufficient for rigid rings and rigid square grids for the majority of otters (Table 3). A mean of 101.7mm for the 'narrow' diameter and 116.1mm as a mean 'narrow' elliptical length of the chest of females exceeded the maximum openings recommended for these two types of guards. However, for three of the 11 females and for one of the 13 males, the 'narrow' diameter of the chest was calculated as less than 95mm. The male was one year old and the females were 1-3 years old. In contrast, only one female with a calculated 'elliptical length' of 105.3mm came close to the recommended diameter opening for rigid square grids. All other otters exceeded this dimension. A higher risk for the animals seems to arise from the recommended circumference of 300mm for flexible nets. One third of the females and one male showed a 'narrow' circumference at the chest that was 300mm or less.

**Table 3**: Body dimensions of otters taken in the enclosures of Aktion Fischotterschutz

| | **Females** | | | **Males** | | |
|---|---|---|---|---|---|---|
| **n Individuals** | | 11 | | | 13 | |
| **n Measurements** | | 17 | | | 17 | |
| **Age** | | 1 - 11 years | | | 4 months - 9 years | |
| **Weight** | | 3,240 - 6,900g | | | 3,500 - 9,440g | |
| | Range (mm) | Mean (mm) | S.D. | Range (mm) | Mean (mm) | S.D. |
| **Neck (narrow)** | | | | | | |
| Circumference | 200 - 280 | 250.4 | 20.42 | 220 - 310 | 261.7 | 30.69 |
| Calc. Diameter | 63.7 - 89.1 | 79.7 | 6.50 | 53.1 - 74.9 | 83.3 | 9.77 |
| **Neck (loose)** | | | | | | |
| Circumference | 235 - 315 | 279.3 | 19.00 | 250 - 360 | 296.4 | 32.25 |
| Calc. Diameter | 74.8 - 100.3 | 88.9 | 6.05 | 79.6 - 114.6 | 94.4 | 10.27 |
| **Chest (narrow)** | | | | | | |
| Circumference | 260 - 360 | 319.6 | 32.43 | 290 - 430 | 346.9 | 45.57 |
| Calc. Diameter | 82.8 - 117.8 | 101.7 | 10.32 | 92.3 - 136.9 | 110.4 | 14.50 |
| Calc. Elliptical Length | 94.4 - 134.3 | 116.1 | 11.78 | 105.3 - 156.1 | 125.9 | 16.54 |
| Calc. Elliptical Breadth | 77.6- 99.0 | 85.5 | 8.68 | 77.6 - 115.0 | 92.8 | 12.19 |
| **Chest (loose)** | | | | | | |
| Circumference | 290 - 400 | 360.5 | 36.62 | 350 - 470 | 388.2 | 40.39 |
| Calc. Diameter | 92.3 - 127.3 | 114.8 | 11.66 | 111.4 - 149.6 | 123.6 | 12.86 |
| Calc. Elliptical Length | 105.3 - 145.2 | 130.9 | 13.30 | 127.1 - 170.7 | 140.9 | 14.67 |
| Calc. Elliptical Breadth | 77.6 - 108.0 | 96.4 | 9.80 | 93.6 - 125.7 | 103.8 | 10.80 |

These measurements might also provide ideas for the construction of different shaped guards. Tests with captive otters on land with a rigid circle grid guard (250mm diameter; 3mm stainless steel), divided into three vertical sections with a maximum width of 80mm, showed that otters could overcome this guard by pressing the two bars apart and by moving through the opening by turning the body in a vertical position (Reuther, unpubl. data). First tests under water indicate that this might also be possible for females and small males. This is not surprising as, regarding the calculated 'elliptical breadth' shown in Table 3, at least three females and one male showed measurements less than 80mm for this parameter.

**Placement of fyke nets**

Only two publications could be found where the position of the fishing gear (depth under water and/or distance from land) was correlated to the number, the sex or the age of drowned otters. The data of MADSEN (1991) for Denmark (Figure 7) indicates that the risk increases as the water the fyke net is located in becomes shallower and the closer it gets to land. However, there is no information provided as to how these data correspond with the range of water depth and distance from land for all fyke nets used in these areas. This is also true for the data on otters drowned in lobster creels on the Scottish coast published by TWELVES (1983). She found the majority of dead otters at a depth of 2-5 metres (Figure 8). Because of the low numbers for both samples, no correlation could be found between age and/or sex as to the placement of the fishing gear.

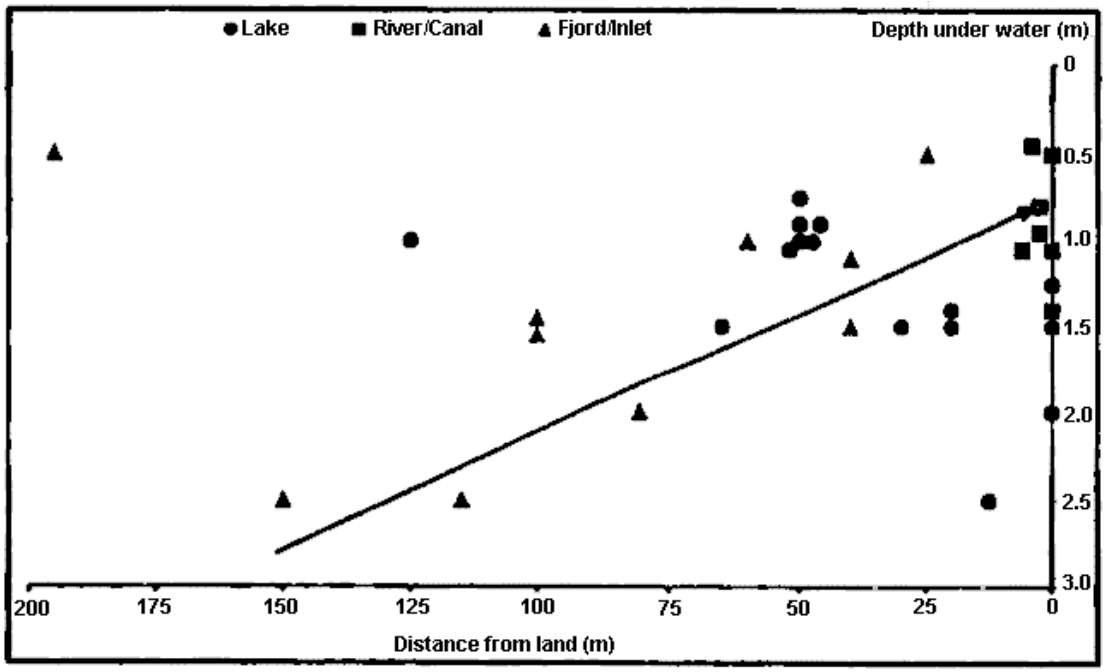


**Figure 7**:Depths and distances from land of fyke nets in which otters were found drowned in Denmark (adapted from MADSEN,1991); the arrow shows increasing risk for otters in relation to the position of the fyke nets.

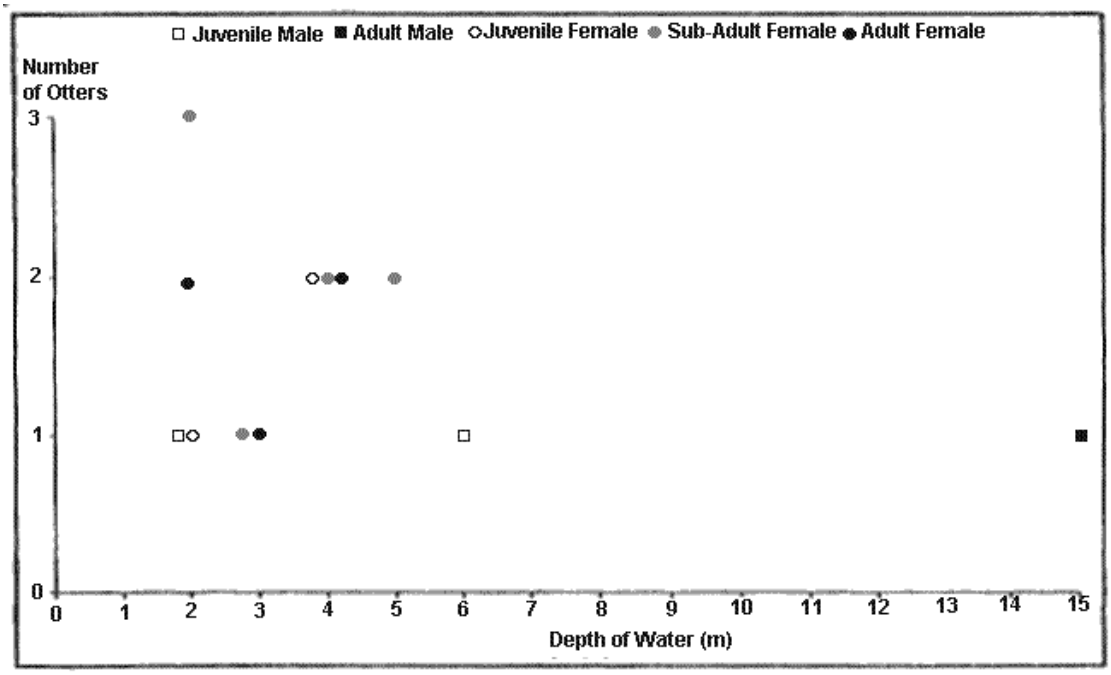


**Figure 8**:Depths of Lobster Creels and sex and age of otters found drowned on the Scottish coast (adapted from TWELVES, 1983).

The indication that the deeper the traps are set the less likely mortality will occur is also supported by the observations of JEFFERIES et al. (1984). They reported that no otters were drowned in freshwaters of Scotland where the fyke nets were set at a depth of 4.5-54m, whereas large numbers of otters were killed in fyke nets set in very shallow freshwater lochs in the Hebrides. WINJGAARDEN and PEPPEL (1970) also report most damage to fyke nets caused by otters in the Netherlands was observed when these were set close to the bank and in water less than 1m deep.

**CONCLUSIONS AND RECOMMENDATIONS**

Traffic casualties represent the dominant majority of known losses of otters in most Western European countries at the moment. However, accidental drowning of otters in fishing gear is still a factor that needs attention, as well as to what extent this could easily be reduced through technical measures.

One of the main problems as regards the development of adequate conservation measures is the low data-base and lack of knowledge of the circumstances that influence the risk of the drowning of otters in fishing gear. This involves a certain danger that conservation activities exceed the real necessities and that, because of this, the acceptance of conservation measures by fishermen will be reduced. To answer this, there is a need for an increase in trust and cooperation between conservationists and fishermen. Conservationists should make fishermen aware that their intention is to ensure the protection of otters whilst still ensuring an optimal fish harvest. To reach this target it is essential that fishermen contribute as much data as possible on the fishing techniques they use and on all accidental mortalities of otters in fishing gear. The apparent dramatic increase in the number of otters that are killed by traffic accidents introduces a danger that, in considering only the percentage of otters that are drowned in fishing gear, this problem will be underestimated. It would make more sense to relate the number of otters drowned to the number of fyke nets (or of other fishing gear) being used in a specific region. This would also reflect regional differences for the extent of the risk for otters on a more reliable basis. The problem is that, in many European countries, the authorities do not know these numbers. It would, however, be interesting to investigate and compare such correlations for different regions.

More detailed data are also necessary for the different types of fishing gear and fishing techniques. It is not enough to try to interpret the differences in the seasonality, the sex, or the age classes of otters drowned shown above only on the basis of factors related to the biology of the otter. It is also necessary to take the different types of fishing gear and fishing techniques into account. Some examples of possible research topics follow: Are the differences in seasonality, as shown in Figure 4, caused by seasonal differences in the intensity of use of fyke nets? Why were mainly juvenile and sub-adult otters drowned in Germany, Denmark and Norway, but mainly adults in Sweden, Ireland and the Scottish coast? Is this correlated with different fishing techniques or equipment? Why do four times more males drown in Germany than in Scotland, and six times more females in Scotland when compared to Germany; and why is the sex ratio in Denmark and Ireland more or less 1:1? Is this caused by different territorial systems, by different foraging techniques of the sexes, or is this also influenced by different fishing techniques of the fishermen? Do the results of some studies, showing that otters are mainly drowned in fyke nets which are deposited in shallow water close to the bank, really express a higher risk or do they only reflect a common fishing technique whereby the majority of fyke nets are deposited there?

There is no doubt that previous protection measures, e.g. stop-grids for eel fyke nets, were pioneering work and resulted in a remarkable contribution to the conservation of otters (MADSEN and SØGARD, 2001). It is also an important contribution to the acceptance of such protection measures by fishermen that they are tested as regards their influence on fishing efficiency, especially if such investigations are carried out by or in cooperation with fishing specialists (JEFFERIES et al., 1988; MADSEN, 1991; BERG, 1993; PEDERSEN and KNIGHTS, 1994; KOED and DIEPERINK, 1999). However, such protection measures are not accepted everywhere and the technical measures available to date are limited to fyke nets used to catch eels. One of the remaining open questions is how to avoid the drowning of otters in fishing gear, which is used to catch larger fish. To date, there have been a number of attempts to develop technical measures for this type of fyke net (MAERZ and MEYER, 1989; MUNR, 1999; REUTHER, 2001; TEUBNER et al., 1998).

Technical protection measures, however, are only one way to reduce the number of losses of otters in fishing gear. There is also a need to ask whether a reduction in mortality could also be achieved by alterations to fishing techniques. As underlined before, this requires more data on the relationship between these techniques and the loss of otters. By establishing confidential relationships and cooperation with fishermen, which is an essential precondition to receive such data, the first step for a third way to the target is taken: an improvement in the acceptance of otter conservation by fishermen.

I want to encourage all conservationists and scientists involved in otter conservation or fishery techniques to collect and to publish more data referring to the questions mentioned above. In particular, practical experience and test results will increase the efficiency of otter conservation. Because of the great variety of factors, which could influence such studies and their results (e.g. type of water body, depth and velocity of the water, type and size of fishing gear, where traps are set, and the species fished for) the establishment of international and inter-disciplinary cooperation could improve the efficiency of such an attempt to a great degree.

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**Résumé: Loutres Et Engins De Peche - Quelques Aspects Nécessitant Da Vantage D'attention**
Le fait que la loutre eurasienne (*Lutra lutra*), attireée par les poissons piégés dans les nasses, casiers et autres engins de pêche, puisse parfois s'y noyer en voulant les attraper, est un problème désormais bien connu. Bon nombre de publications relatent cette question et les tentatives pour prévenir ce type de mortalité. Afin de dégager un ensemble de recommandations pour les pêcheurs, et confrontant de ce fait ces éléments à des données non publiées de différents pays d'Europe, il est apparu clairement que certains résultats sont incohérents ou reposent sur un échantillonnage trop faible pour servir de base, de façon suffisamment pertinente, à des recommandations *ad hoc*. De ce fait divers aspects sont ici mis en avant afin d'encourager chercheurs et protectionnistes à rassembler plus d'éléments et alimenter à une base de donnée plus fiable pour mieux conforter les propositions de protection. En particulier, un approfondissement des connaissances concernant techniques et matériaux de pêche apparaît nécessaire en vue d'une meilleure compréhension des facteurs ayant une incidence sur le nombre de loutres noyées.

**Resumen: Nutrias Y Nasas - Algunos Aspectos Que Requieren Mayor Atencioón**
Es bien conocido que la nutria europea (*Lutra lutra*) es atraída por peces atrapados en nasas, trampas para langostas u otros artes de pesca, y que a veces se ahogan intentando acceder a esos peces. Varias publicaciones describen el problema y los intentos de evitar este tipo de pérdidas. Comparando estos datos con datos no publicados de diferentes países europeos, y al intentar preparar recomendaciones para pescadores, aparece como obvio que hay algunos resultados que son inconsistentes o basados en una base de datos muy reducida como para ofrecer un fundamento adecuado para realizar recomendaciones de conservación. Por lo tanto, algunos aspectos son destacados para así alentar a conservacionistas de nutrias e investigadores a recabar más datos y contribuir a consolidar una base de datos más confiable para el desarrollo de medidas de conservación. En particular, para una mejor comprensión de los factores que influyen en el número de nutrias ahogadas, aparece como necesaria una mejor comprensión de las técnicas y artes de pesca utilizados por los pescadores.

**A R T I C L E**

# TRAFFIC MORTALITIES OF THE OTTER AND ROAD-PASSES: A DATABASE

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**Abstract:** A major cause of otter deaths is road traffic accidents. Various mitigation measures have been used to try to reduce the numbers, but assessment of their effectiveness is not consistently carried out or made available. The authors propose a project, the Database of Otter Roadpasses, to collect and disseminate knowledge from OSG members about otters, roads and mitigation measures. A pro-forma response is provided indicating what information should be collected; this should be returned to the authors for compilation into the database.

## BACKGROUND

Most experts agree to three main causes for the decline in otter numbers: pollution/contamination of the food chain, habitat destruction and accidental mortalities. This last cause is mainly due to road traffic in most countries. The deaths of otters on roads are a direct threat to otters, not only due to the impact it can have on existing local otter populations but also on the otter's ability to recolonise new areas. According to LILES and COLLEY (2001) in Wales, four factors seem particularly relevant:

I. Otter population densities are naturally low;
II. The majority of otters killed on roads are healthy individuals;
III. Some otter road death sites are 'accident blackspots' where several otters are killed over a period of time;
IV. Pregnant or lactating females, and cubs, are killed at several sites.

For 10 years or more, in some countries, attempts at mitigation measures have been made in order to significantly reduce otter road deaths. These have taken the form of providing safe underpasses at bridges or culverts (on new road schemes or at places where fatalities have already occurred) or through maintaining or improving the ecological continuity of a river (corridor function, prevention of the 'barrier effect', etc). Such measures have already been undertaken in some areas of the UK (GREEN, 1991), Denmark (MADSEN, 1992, 1996) and France (LAFONTAINE, 1991, 1993; LAFONTAINE et al., 1994), sites being identified through recognition of black-spots for otters (LILES and COLLEY, 2001) and/or through the wider collection of otter road death statistics (KÖRBEL, 1995; MACDONALD et al., 1999).

## PROJECT SCOPE

Although some mitigation work has been carried out in some European countries, there has been little or no monitoring of these projects to see if they are effective as conservation measures, as well as cost effective. As written by R. Green (in press), it is true that 'mitigation measures will never prevent all otter road deaths', but also that 'while there have been a number of designs and specifications, there have not yet been many appraisals of mitigation measures published, although a number of such studies are underway'. The potential problem for otter populations from road deaths may be very significant in some parts of its range. A better understanding of effective mitigation measures, and their cost/benefit ratio, is urgently required. In Brittany, for example, results from a field study on Natura 2000 sites

showed that 22% of 264 bridges surveyed would present a high or very high otter road death risk (mainly pipes or drains on small watercourses). However, appropriate mitigation measures (culverts or ledges, fencing) on so large a sample of bridges would be very costly (LAFONTAINE, 2001).

Research on mitigation measures for otters carried out so far (LAFONTAINE, 1991, 1993; KÖRBEL 1995; MADSEN, 1996; GREEN 1991; CLARKE et al. 1999; LILES and COLLEY, 2001) has produced a range of solutions to the problem, including ledges, dry culverts and fencing. The measures themselves are interesting, and sometimes innovative, but specifications vary greatly (e.g. dry pipe or fencing? what size or length?, should it be in relation to bridge size?, is it operational?, is it always necessary?, etc).

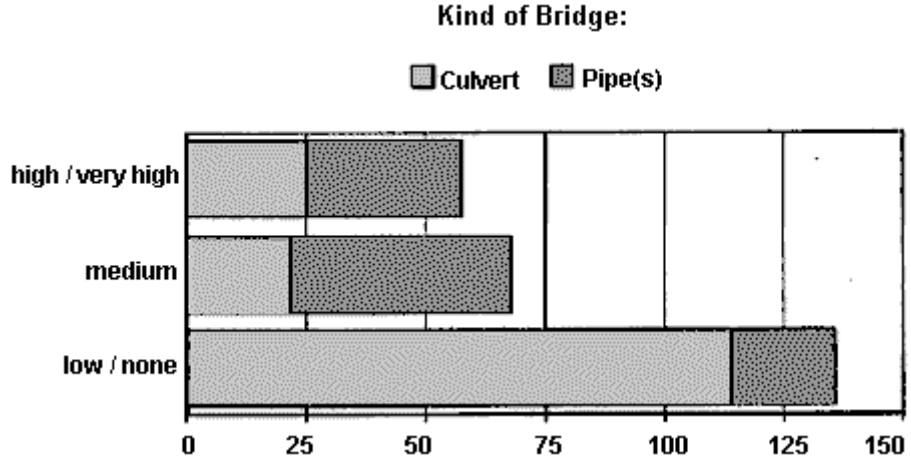


**Figure 1:** Appraisal of road mortality risk for otters concerning 264 bridges from four EU Natura 2000 water catchments in Brittany, NW France (from LAFONTAINE, 2001)

Better cooperation and wider dissemination of knowledge and experience is now urgently needed. Not only is it neccesary to investigate the success of existing mitigation measures but also to research into the best designs for future use, to provide engineers and planners with data on current best recommendations. Finally, it is important that road authorities do not substitute the effectiveness or 'appropriateness' of mitigation measures for lower costs, as sometimes happens today (LAFONTAINE, 1991,2001).

We should therefore like to propose a project to establish a cooperation and exchange programme between OSG experts, in order to compare respective situations and experiments into mitigation measures to prevent otter road deaths. For this we propose to create a DATABASE OF OTTER ROADPASSES, through a call for contributions from OSG members from all countries. The aim is to draw up an inventory of existing otter roadpasses, with biological, technical and financial data.

As a first step we have designed an Initial Questionnaire (one voucher per roadpass). See below, file available from: otternet@aol.com. We will be very grateful if you will complete this questionnaire and e-mail it to the otternet address above. Any pictures of the measures will be very useful. When enough data is available, a progress paper can be written together and published in further issues of this bulletin, with updated results available on an especially designed website.

**INITIAL QUESTIONNAIRE 'DATABASE OF OTTER ROADPASSES'**

IUCN/OSG / Lafontaine and Liles 2001

one voucher per roadpass please (copy and paste)

(A follow-up questionnaire will be sent out later to ask for more details)

Your name/address/e-mail:

Country: _____ Region: _____

**Otter Species:**

**The roadpass:**

Roadpass: installed where: In a bridge/culvert _____ On a stretch of road _____

Location of Roadpass: (example - bridge name; municipality; grid ref; longitude/lat)

Mitigation installed: when the bridge/road was built ____ or on an existing bridge/read? _____

Is it: a new road scheme? _____ and existing otter death site? _____

Date of otter death(s):

Location: (example latitude & longitude)

Watercourse : _____ Water catchment : _____

Date mitigation installed

Type of roadpass (example: bolt on ledge; dry culvert; fencing):

_____

_____

(please send pictures if possible)

Biologist / Otter expert involved:

Has any monitoring of the mitigation been carried out?

Results published?

If yes, can you please send a copy?

Other relevant comments:

Thanks for sending this questionnaire back, with a picture of the roadpass, if possible at the following e-mail address: otternet@aol.com

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# REPORT

## PROGRESSIVE SKINNING OF TOADS (*Bufo bufo*) BY THE EURASIAN OTTER (*Lutra lutra*)

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**Abstract:** Predation of the Common Toad (*Bufo bufo*) by otters is less common than predation of the Common Frog (*Rana temporaria*). To avoid the paratoid glands of toads, only the hind legs may be skinned and eaten. At a *B. bufo* breeding site, regularly predated by otters, an increasing proportion of predated toads have been completely skinned. With declining populations of fish and crustacean prey, it is suggested that this apparent behavioural change better utilises the residual food resource.

### INTRODUCTION

The fact that *Lutra lutra* will predate frogs and toads is a widely reported phenomenon (ERLINGE, 1967; FAIRLEY, 1984; FAIRLEY and McCARTHY, 1985; JENKINS and HARPER, 1980; LOPEZ-NIEVES et al., 1984; WEBER, 1990). In Britain, such behaviour has been reported from England, Scotland, Ireland, and Wales, including the River Esk in Scotland, where it was first attributed to Chinese Restaurants mutilating toads for their legs, although later recognised as the work of otters. Hind leg predation has been reported over a wide area of central Wales and involved both anuran species present in the study area: common frog (*Rana temporaria*) as well as the common toad (*Bufo bufo*).

My records date back to the mid-1990's and record predation on a population of *B. bufo* inhabiting river flushed pools in an area of braided channels along the upper River Wye in mid-Wales. When the toads come to these pools to breed in April, they are taken by otters and their hind legs skinned and eaten and the front half of the toad discarded, presumably because of the presence of large paratoid glands just behind the eyes, which exude powerful toxins. Frogs eaten in a similar way have been reported from a large reservoir some 20 km to the west, in a completely different catchment, and at man-made pools some 15 km northeast of the original river toad site. The fact that the frogs have non-toxic skin but still only lose their hind legs suggests the otters in all cases regard all anurans as toads and treat them accordingly.

### OBSERVATIONS

All the toads found predated at the River Wye site, were collected and photographed in 1997, 1999 and 2002 (in 2001 there was no access due to Foot and Mouth disease restrictions).

Although the numbers found varied from year to year, it has become obvious that the percentage completely skinned and the whole body consumed has increased over the six-year period (Table 1).

**Table 1**. Skinned toads found during the study period.

| Year | No. Found | % Fully Skinned | Figure |
|---|---|---|---|
| 1997 | 35 | 0 | 1 |
| 1999 | 58 | 7 | 2 |
| 2002 | 10 | 80 | 3 |

**Figure 1**. Predated toads from riverside pool - 1997

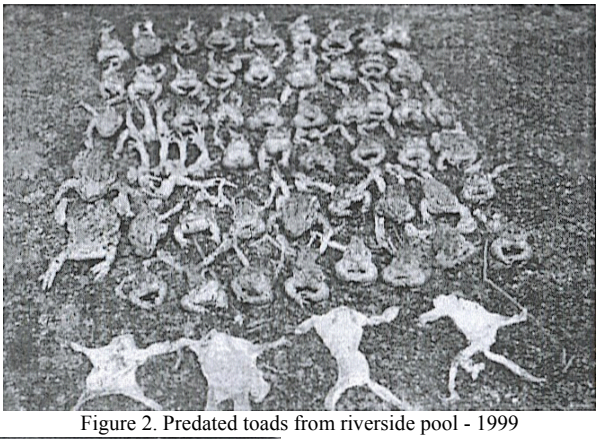

Figure 2. Predated toads from riverside pool - 1999

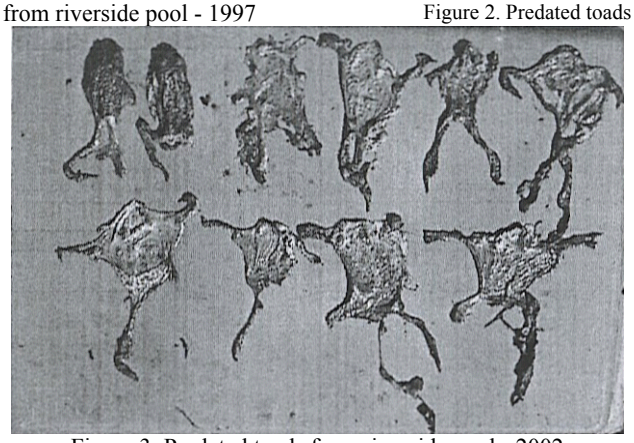

Figure 3. Predated toads from riverside pool - 2002

Otters are widespread in mid-Wales but there are only sporadic reports of this type of behaviour. To determine how widespread this behaviour might be we examined amphibian bones within otter spraints from a number of sites within the Wye catchment, sufficiently separated to make it likely that samples from different sites came from different otters (Poore, unpublished data).

The anuran bones were separated from the spraints and examined to see if there were proportionately more hind limb bones than forelimbs. The result, significant at the 5% probability level, showed a greater number of animals if counted by paired hind limb bones that if front limb and non-paired amphibian bones were assessed.

**DISCUSSION**

Although based on a limited sample size, it would appear that otters have found that eating only the hind legs of anurans avoids toxins in the glandular front end of toads. At at least one study site, otters appear to have found that the whole of the amphibian body is edible if the skin is fully removed. This is almost always achieved via a vertical incision and the skin then removed in one piece. The progressive increase in the percentage of fully skinned animals over time at one location suggests a learning process.

Data on skinning are not available from others sites as reports of otter-eaten frogs or toads are sporadic and the remaining corpses quickly removed by scavengers. One hundred predated frogs were all removed by Carrion Crows (Corvus corone) over a two hour period, making the window of opportunity for recording particularly narrow. At the river site, discarded bodies are generally left in the water away from most scavengers so are available for collection for several days. Eventually, these bodies are either eaten by caddis larvae (Trichoptera) or washed away by rising river levels.

**Figure 4**. Predated toad alive and walking with remaining skin of hind legs visible

When only the hind limbs are taken, they are always skinned and the skin left attached to the remaining part of the animal (also noted by WEBER, 1990), which may still be alive and even able to walk (Figure 4). That hind limb removal is a fairly general phenomenon in mid-Wales is suggested by spraint analysis, showing that hind limb to fore limb anuran bone ratio shows an excess of hind limbs.

In a river system where traditional food resources are in decline - salmon, eels freshwater crayfish - better utilisation of the residual food resource is clearly a useful survival strategy and total skinning of the carcase is a means to that end.

***ACKNOWLEDGEMENTS*** *- I acknowledge the facilities provided by the Llysdinam Charitable Trust and the assistance of Emma Poore in analysing spraint samples.*

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**Résumé : Ecorchage Progressif de Crapauds (*Bufo bufo*) par la Loutre Eurasienne (*Lutra lutra*)**
En matière de prédation, la loutre se focalise moins fréquemment sur le crapaud commun (*Bufo bufo*) que sur la grenouille rousse (*Rana temporaria*). Afin d'éviter d'entrer en contact avec les glandes paratoïdes des crapauds, les loutres les dépiautent et seules les pattes postérieures sont consommées. Sur un site de reproduction de *B. bufo* régulièrement visité par les loutres, une proportion croissante de crapauds a été totalement dépiautée. Nous suggérons ici que lorsque les disponibilités en poissons ou crustacés décroissent, cet apparent changement de comportement permet d'exploiter au mieux les ressources alimentaires restantes.

**Resumen: Desollado Progresivo de Sapos (*Bufo bufo*) por la Nutria Europea (*Lutra lutra*)**
La predación sobre el sapo común (*Bufo bufo*) por parte de las nutrias es menos frecuente que la predación sobre la rana común (*Rana temporaria*). Para evitar las glándulas paratoides de los sapos sólo las patas traseras son desolladas y comidas. En un sitio de apareamiento de *B. bufo* regularmente predado por nutrias, una proporción creciente de los sapos predados han sido desollados por completo. Se sugiere que con la declinación de las poblaciones de peces y crustáceos, este aparente cambio comportamental permite utilizer mejor los recursos alimenticios residuales.

# REPORT

## GIANT OTTER PROJECT IN PERU FIELD TRIP AND ACTIVITY REPORT - 2001

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**Abstract:** The giant otter (*Pteronura brasiliensis*) was uplisted from 'vulnerable' to 'endangered' by IUCN in 2000; habitat destruction in South America currently poses the greatest threat to the species. In 1990, the project 'Status, habitat, behaviour and conservation of Giant Otters in Peru' was initiated by the Frankfurt Zoological Society - Help for Threatened Wildlife (FZS) in order to increase knowledge and national awareness of these unique animals and to develop a comprehensive plan for their conservation in Peru. The progress of the Project has been described continually in the IUCN Otter Specialist Group Bulletin

### INTRODUCTION

The giant otter (*Pteronura brasiliensis*) was uplisted from 'vulnerable' to 'endangered' by IUCN in 2000; habitat destruction in South America currently poses the greatest threat to the species. In 1990, the project 'Status, habitat, behaviour and conservation of Giant Otters in Peru' was initiated by the Frankfurt Zoological Society - Help for Threatened Wildlife (FZS) in order to increase knowledge and national awareness of these unique animals and to develop a comprehensive plan for their conservation in Peru. The progress of the Project has been described continually in the IUCN Otter Specialist Group Bulletin (SCHENCK and STAIB, 1992, 1995a, 1995b; SCHENCK et al. 1997, 1999; STAIB and SCHENCK, 1994; GROENENDIJK et al., 2000, 2001).

### Manu Biosphere Reserve population census

As in 1999 and 2000, two surveys were carried out in the Manu Biosphere Reserve during 2001, the first in February and the second in October/November. Very heavy rain during February resulted in high water levels in lakes and rivers, thus greatly complicating the locating of otter groups, which tend to leave their core areas and enter small streams, swamps and flooded forest. Therefore, the February census total cannot be usefully compared to those of the first censuses of the previous two years.

#### *Results of Manu Census 1*

During the first Manu survey we entered 16 lakes, and investigated the Pinquen River, a tributary of the Manu, only briefly. The total number of different giant otter individuals located was 27, including 1 solitary, with the remainder being members of 4 groups. The largest group numbered at least 8 animals and the average group size was 6.5. The total number of observation hours was roughly 10. A group of 3 animals was recorded on the Manu River itself, one of which was Pepe, first seen in 1999.

***Results of Manu Census 2***

The second census was carried out towards the end of the dry season when most cubs born during the year are easily observed. Again, the Pinquen River was briefly explored, as well as a total of 24 lakes on the Manu. Total direct giant otter observation time was about 79 hours. Of the 15 lakes where we did not encounter giant otters, 6 showed fresh and/or old signs of their presence. In Cocha Salvador, a unique situation had developed during the course of the year, with a litter being born earlier in the second quarter but leaving only one remaining survivor, and a second litter of no less than 5 cubs having been born shortly before our visit (4th quarter). As far as we are aware, this is the first time that a litter numbering more than 4 cubs has been witnessed in the wild. It was decided not to include the second litter in the census total since, in all previous surveys, only those cubs that were interacting with the remainder of the group outside the den were recorded. Thus, the total number of different giant otter individuals sighted during the census was 56, of which at least 10 were juveniles, divided into 10 groups, with 3 solitaries. The largest otter groups numbered 8 animals and the average group size was 5.3. If the second Salvador litter is taken into account, we have a group of 13 individuals which is the largest recorded in the 11-year history of the project. Two known otter groups were missed. A pair of otters was encountered on the Manu River itself, successfully identified as Pepe and his mate Doble. Doble's younger sister, Gollum, no longer accompanied them.

Of the 94 different neck markings filmed in Manu since the beginning of 1999, the sex is known of 25 individuals (compared to 14 in 2000 and 6 in 1999), and an additional 9 require confirmation (compared to 9 in 2000 and 3 in 1999).

**Small river research: Palma Real and Patuyacu**

Two separate surveys were conducted in the Palma Real watershed during the course of 2001, the first in April, and the second in September (at the end of the rainy season and at the height of the dry season respectively). In addition to the Palma Real Grande and Patuyacu rivers, the first survey also included the Palma Real Chico, a small, comparatively short river roughly a third of the total length of the adjacent Palma Real Grande. The background of the study and descriptions of the area are detailed in recent Otter Specialist Group Bulletins (October 2001, April 2000). Briefly, following a preliminary survey in September 1998, a long-term research programme was initiated in 1999 into the ecology and distribution of Giant Otters on small river systems, focussing mainly on the Palma Real watershed, in order to compare results with those collected in the oxbow lakes of the Manu Biosphere Reserve by SCHENCK and STAIB (1999). The findings of the small river research will be summarised and analysed at the end of 2002.

***Results of Survey 1 - Palma Real Grande***

Giant otters were sighted on three occasions on the Palma Real Grande: the first was of a pair, the second of a solitary individual, and the third again of a pair, one of which was Onyx, an otter first seen in August 2000. However, we could not determine if the two pair sightings were of the same two animals. A total of 11 campsites were recorded of which 7 were fresh. Three fresh dens were also noted.

***Patuyacu***

On the Patuyacu, giant otters were observed on four occasions: the first and second were both of a single animal. The second observation was of a solitary individual climbing up onto an area recently trampled by giant otters where he sniffed and rubbed his body over the surface (but not sprainting), before entering the water to continue upriver. It is rare to encounter such a relaxed solitary animal on oxbow lakes, let alone small rivers, and it was interesting to observe a solitary marking what may have been a group campsite (although there was no latrine). The third sighting was again of an individual and the fourth was of the resident group of 4 seen emerging from a water body in the forest. The group included Yacu, Timida, and the male Patu, all first seen in August 2000, as well as a single subadult, Suerte, born during the previous year. A total of 15 campsites were recorded, of which 11 were fresh. Three fresh and two old dens were also noted.

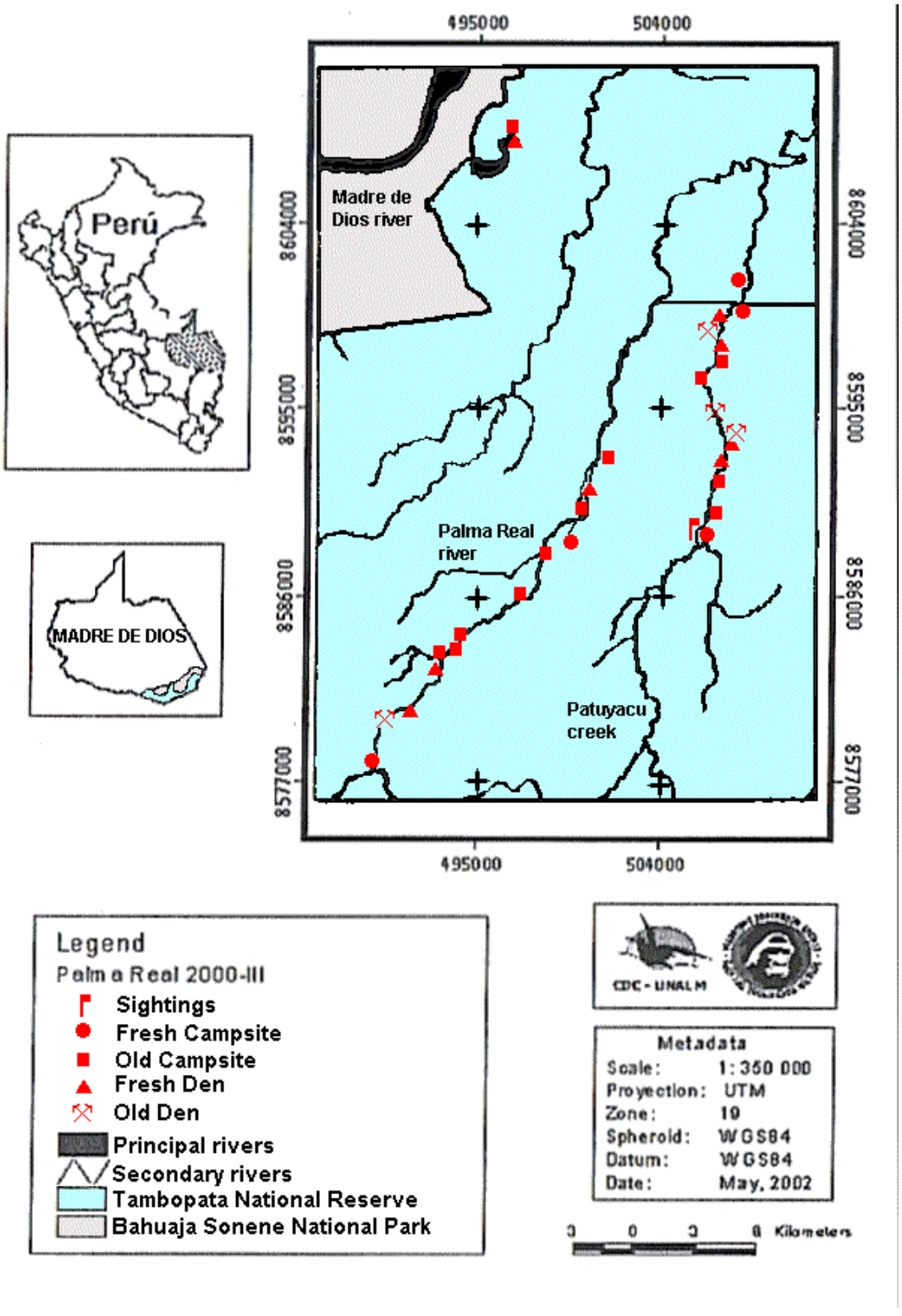


**Figure 1**. Giant Otter sightings and indirect signs of presence in the Palma Real watershed: August 2000

***Palma Real Chico***

The water level was very low on the Palma Real Chico and there was much Brazil nut collecting activity, in contrast to the Palma Real Grande where the season had been virtually completed. The Palma Real Chico is characterised by high river banks, a river width averaging 12m, fast flowing water due to a steeper gradient as compared to the adjacent two rivers, and a sandy/gravel bottom. After 5

hours of travel, the width of the river varied between 6 and 10 metres, the banks became floodable, and the surrounding forest was less tall. Approximately 20 Brazil nut concessions are located along the length of the Palma Real Chico. No dens and only 4 old giant otter campsites were found. However, at one location on a sharp river bend, two sets of extremely fresh tracks were found on the bank just above water level, clearly indicating a pair (at least) of giant otters escaping upriver from our presence. We heard the following day that a Brazil nut collector had seen a group of three individuals. It is very likely that giant otters normally frequent the lower reaches of the Palma Real Chico, once the Brazil nut collecting season is over. It is also possible that there is a movement of individuals between the Palma Real Chico and the lower reaches of the Palma Real Grande (below the latter's confluence with the Patuyacu) where gamewardens have reported seeing giant otters but where we have never encountered them or signs of their presence.

***Results of Survey 2 - Palma Real Grande***

Giant otters were observed twice on the Palma Real Grande; the first sighting was of a single individual, and the second was of a pair, one of which we identified as Real, first seen in September 1998. Its partner was unknown to us. The pair headed downriver and, after a brief while, we followed behind them. Soon after, a Neotropical otter was spotted. A series of observations of both species ensued as we all travelled downriver, during which we were very fortunate in being able to identify the Neotropical otter as male. We eventually arrived at an obstruction of fallen tree trunks in the river. We saw the Neotropical otter swim towards it, then appear on the other side as we peered through the branches. We then spotted another otter also swimming on the other side of the obstruction. Moments later, the Neotropical otter ran up the river bank a short distance, breaking a twig with an audible snap, and then stopped facing the river. The Neotropical otter stood in the same position quietly for about 10 seconds, then ran into the water and continued downriver. The second otter swam upriver towards us, passing within 3 metres of us (only then did we realise it was a giant otter) and showing no alarm behaviour (it was probably well aware of us from the previous encounters). It then submerged and disappeared. If our observations of this giant/Neotropical otter interaction are of characteristic behaviour, then we can assume that Neotropical otters tend to give way to their larger relative and that this may prevent aggressive encounters (at least between adults). Only 4 old giant otter campsites were recorded on the Palma Real Grande, as well as one fresh and one old den (the former also had a scratch wall nearby).

***Patuyacu***

On the Patuyacu, giant otters were again seen on two occasions; the first sighting was of a solitary individual whereas the second was of a family of 4 individuals identified as Patu, Yacu, Suerte and Timida; the same group as seen in the April 2001 survey. However, our Peruvian assistants reported seeing a single, very small cub born to the family during 2001. This group was discovered to have an underwater entrance to their den, a first in the Project's experience. In total, 6 campsites were recorded of which 2 were fresh, as well as three fresh dens situated close together.

***Giant otter diet research***

Roberto Quispe, a student at the San Marcos University in Lima, first became involved with the Project in February 2000. His BSc thesis 'Determinación del regimen alimentario del Lobo de Río *Pteronura brasiliensis* mediante el analisis de partes duras presentes en las heces, en la cuenca del Río Palma Real, Madre de Dios, Peru' has since been completed, under supervision of Hernan Ortega of the San Marcos Natural History Museum.

Roberto's objective was to investigate the diet of the giant otter by means of seasonal (wet versus dry) and habitat (lentic versus lotic) comparisons, using hard parts (scales, bony plates, teeth, otoliths and spines) of fish species found in faecal remains collected between July 1999 and February 2000 in the Palma Real River. Moreover, a distinction was made between old and fresh campsites. More than 51,000 items were analysed, the vast majority scales. A reference scale collection was assembled, and the methodology used followed that of KHANMORADI (1994). Roberto hopes to present his conclusions in the OSG Bulletin in the near future.

**Lago Sandoval, Tres Chimbadas and Cocococha: survey and management plan progress**

***Lago Sandoval***

In 2001, Lake Sandoval was visited once by the Project, during August. In addition to a solitary individual, which we were unable to identify, the resident family of 7 giant otters was sighted, including 2 cubs. We were fortunate to have seen the group, since tourism operators had reportedly not observed them for anything up to a month. Implementation of the Sandoval management plan (outlined in the April 1999 OSG Bulletin) has progressed slowly but surely. The construction of the Interpretation and Control Centre is currently nearing completion; the observation tower will follow later in 2002. A Sandoval Environmental Education Programme (SEEP) has been initiated, with the aim of organising visits of school children to the lake whilst taking the opportunity to include elements of environmental education as part of their annual curriculum.

***Tres Chimbadas***

On the 5th of April, we did not encounter the resident group, reportedly of 7 animals, on lake Tres Chimbadas (see the October 2001 OSG Bulletin for background details). A solitary had apparently also been sighted on occasion. On the 24th of August, we returned to the lake, this time observing 5 giant otters hunting along the shore and porpoising in deeper water. The following morning we again sighted the group, now comprising only 4 animals. A small, low-budget tourism lodge has been constructed on the lakeshore, on land owned by a local cattle rancher. Due to poor relations with Rainforest Expeditions (the only other tourism company which operates on the lake), communication between the two tourism entities has been minimal, with the new company expressing little willingness thus far to take the Rainforest Expeditions self-imposed tourism management plan on board. However, he was prepared to listen to the Project's ideas for tourism management and it is hoped that the tourism companies will be able to cooperate better in the future

***Cocococha***

Cocococha is a 56-hectare oxbow lake situated on the left margin of the Tambopata River, approximately 1 hour upriver by boat from Puerto Maldonado, and then an hour's walk from the river inland. Only one tourism company currently operates on the lake, namely Explorer's Inn., but members of the nearby native community of Infierno fish and hunt there. A family of 6 individuals, including 2 juveniles, was encountered on lake Cocococha in May, as well as in August 2001. A Resident Naturalist, Raphael Notin, voluntarily initiated giant otter monitoring and tourism management on Cocococha in early 2001 with the approval of the lodge owner; subsequently, Raphael Notin has constructed a small hide from which tourists are now able to observe natural giant otter behaviour. The additional steps taken to reduce tourism impact (the catamaran follows a fixed route, and only part of the lake is accessed) have already begun to take effect, with the resident otter group spending more of its time on the lake.

**Education - Pepe, the Giant Otter drawing activity**

This activity, which was planned for execution in 2000 and which was then only partially carried out, was successfully completed in all three participating Protected Areas during 2001. The main project executor was the NGO Pro Naturaleza, in coordination with local education authorities, assisted in Manu and Pacaya Samiria by INRENA staff in order to reach all target communities.

The activity reached all the planned schools (virtually 100% of schoolchildren in and around Manu and Bahuaja-Sonene) and there was adequate follow-up in all areas. A sign of success is the motivation displayed by both students and teachers during the activity itself, as well as through anecdotal accounts. For example, in the community of Sonene, the children visited the Guacamayo ox-bow lake after the Pepe drawing book activity (as part of the juvenile side neck turtle (*Podocnemis unifilis*) release programme organised by the park authorities) and they happened to see the giant otter group of this lake. Many of these Ese-eja children had never seen giant otters before and therefore became very excited, crying "There's Pepe el Lobo, Pepe el Lobo!". This demonstrates the creation of an

identification link between the children and the animal, essential for the development of conservation awareness.

The activity was felt to be much more effective in those schools where it was integrated into monthly teaching activities (1 hour in the afternoon, 3 days a week, over 1 month) so that the children regarded the book as a relaxing activity and gradually improved their drawing and colour-use imagination. This type of event fires the enthusiasm of many young students, and so an effort must be made to give continuity to such environmental awareness activities. Prizes with giant otter motifs (t-shirts, puppets, etc.) would help to retain the activity in the minds of the children for a longer period.

**Other developments**

**Mercury study**

As in 2000, the mercury research was conducted during the October/November Manu census (see the April 2000 OSG Bulletin). Briefly, 10 specimens each of 4 species of fish favoured by the giant otter were sampled in 4 lakes which are seen to represent a possible gradient of mercury contamination; Cochas Huitoto and Capiripa (on the Madre de Dios river, located downriver and upriver of the gold mining area respectively), and Cochas Salvador and Cashu (on the Manu river, located in the Reserved Zone and National Park respectively). All four lakes were inhabited at the time of the census by families of giant otters.

A total of 116 fish tissue samples were collected, as well as 5 samples of fresh otter scat (one in Huitoto, two in Salvador, and two in Cashu). Unfortunately, we were unable to find fresh faeces in Capiripa. Arno Gutleb is kindly facilitating the analysis of all samples for mercury content. Two batches (collected in 1999) have been completed, a third (collected in 2000) is underway, and the fourth is expected to be delivered for analysis in June 2002.

***'Friends of the Giant Otter' bulletin***

The 'Friends of the Giant Otter' bulletin is becoming increasingly read by the giant otter community; over 200 people in South America currently receive the Spanish version, and an additional 57 receive the English copy abroad (compared to 80 and 25 individuals respectively in 2000). The bulletin is no longer sent by 'snail mail' due to high postage costs. This has permitted more extensive coverage of giant otter activities and it is anticipated that, in 2002, it will be published three times rather than twice. Also in 2002, ways will be sought through which the bulletin might be made more dynamic. Contributions still have to be actively sought by the editor; it is hoped that, gradually, as the bulletin becomes more widely read and better known, people will write voluntarily.

***Workshop in Puerto Maldonado***

On the 15th of December, a one-day course/workshop 'Research and conservation of the giant otter and ox-bow lakes in the Madre de Dios region' was held in Puerto Maldonado. The aim of this event was to bring together representatives of the protected areas authority INRENA, other local authorities and NGOs, and nature tourism companies, in order to share research findings and work towards a variety of ox-bow lake management models for the area.

The course began with a slide presentation summarising the biology and ecology of the giant otter, with special emphasis on the Madre de Dios population. This was followed by a 45-minute video 'The Wolves of the Manu river - Giant Otters'. Next came a presentation focussing on the threats to the species and its environment, especially alluvial gold mining and associated mercury use. The last presentation before lunch emphasised nature tourism management in giant otter habitats so that tourism serves as a tool for conservation rather than an additional threat. After lunch, participants were separated into groups and presented with three hypothetical ox-bow lakes. Each lake illustrated a different set of biotic and abiotic characteristics and human use patterns. Using the information provided at the course, as well as varied personal experiences and work backgrounds of the participants, each group was asked to discuss, agree upon, and present a management plan for each lake, which would harmonise human activities and giant otter conservation.

Among the participants were the head of Bahuaja Sonene National Park, INRENA personnel, two park guards, two lodge administrators, two lodge owners, and several guides, all of whom clearly felt it had been a valuable experience. The management ideas and plans presented are too varied to be described here but were impressive in their scope. Moreover, each led to a spirited discussion about their respective pros and cons, which served to illustrate that a multidisciplinary approach results in more thoroughly developed management proposals.

***Cochas Kamungo and Capiripa***

On the journey from Puerto Maldonado to Boca Manu (a village situated at the mouth of the Manu River), we took the opportunity to visit Cocha Kamungo, about which we had heard reports that a group of giant otters was resident. We entered the lake on the 14th of October and encountered a family of 6 animals, including at least one cub. What was most striking about the group was the universal lack of clear throat markings; the most that we could distinguish was an occasional moustache and/or dot. This will greatly complicate future identification.

We spoke with the administrator of the Blanquillo lodge, who manages tourism activity on the lake in order to minimise its impact. Manu tourism operators must book and pay a fee for the privilege of taking the single catamaran out onto the lake, or to climb the 40m observation tower. Both are maintained by the Blanquillo lodge and were established following the example of FZS tourism management implementation in Cochas Otorongo and Salvador in Manu. The tower is a fine example, situated adjacent to an enormous kapok tree with a platform in its branches and a wonderful view over the entire lake. In addition, paths have been opened according to a structured grid system which ensures that any group of tourists spends a considerable amount of time walking within a confined forest space away from the lake shores without coming across another group. The Project has agreed with the Blanquillo lodge owner to continue monitoring the Kamungo otter group and to advise on further possible management initiatives.

On Cocha Capiripa, located on the Madre de Dios river, we observed a family of 5 otters, including two juveniles. Here a single catamaran also operates, under the supervision of a guardian, who lives permanently by the lake and daily records the number of tourists and the name of the accompanying guide. Project leaflets 'Help Protect the Jungle Giant - Giant Otters, a Unique and Endangered Mammal' are given to each tourist. Blanquillo is again the company providing a service to others in a system of cooperation that seems to work relatively well.

***Publications***

Two Project papers were published in the Proceedings of the International Symposium 'El Many y otras experiencias de investigación y manejo en bosques Neotropicales', held in Puerto Maldonado between the 4th and 7th of June, 2001. Entitled 'Manejo del Turismo de Naturaleza en Habitat de Lobo de Río (*Pteronura brasiliensis*) en el Sureste del Peru' (HAJEK and GROENENDIJK), and 'Monitoreo del Lobo de Río (*Pteronura brasiliensis*) en la Reserva de Biosfera del Manu: Metodología y Resultados' (GROENENDIJK, HAJEK, SCHENCK and STAIB), the papers together summarise two of the most important work areas of the Project, namely tourism management in aquatic habitats and monitoring of the Manu giant otter population.

***National distribution maps***

Together with the Centra de Datos para la Conservacion (Centre for Conservation Data - CDC) of the La Molina Agrarian University, the project has started a GIS data base and mapping initiative, in order to gather all available giant otter data for Peru and create a first accurate national distribution map for the species. Biologist Sandra Isola has been in charge of commencing this work. So far, all the data for the county of Madre de Dios has been gathered and processed. For this, a standard giant otter data processing form has been created, and linked to Arc View mapping software. It is hoped that this data base is a useful tool for future management decisions concerning the species in Peru, allowing easy access to consistent, clear, temporal and spatial giant otter data. An example of the output can be seen in the attached map.

***ACKNOWLEDGEMENTS*** *- We are grateful to the Frankfurt Zoological Society-Help for Threatened Wildlife (FZS) for their financial support. We would like to thank INRENA, especially the staff and gamewardens of the Manu Biosphere Reserve, the Bahuaja-Sonene National Park and the Tambopata and Pacaya Samiria National Reserves, for their co-operation. Sincere thanks are also due to the San Marcos Natural History Museum, the Peruvian NGO Pro Naturaleza and our Peruvian field assistants..*

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**Résumé : Projet Loutre Géante au Pérou: Missions de Terrain et Rapport d'Activités - 2001**
La loutre géante (*Pteronura brasiliensis*) a vu son classement IUCN remonter de 'vulnérable' à 'en danger' en 2000; la destruction des habitats constitue la principale menace pour l'espèce en Amérique du Sud. En 1990, le projet intitulé " Statut, habitat, comportement et protection des loutres géantes au Pérou " a été initié par la Societé Zoologique de Francfort - Aide en faveur de la faune menacée (FZS), afin de développer les connaissances et la sensibilisation à ces animaux si particuliers, et mettre en oeuvre un plan global pour leur protection au Pérou. L'état d'avancement de ce projet a été régulièrement détaillé dans les bulletins du Groupe d'Experts de la Loutre de l'UICN (SCHENCK and STAIB, 1992, 1995a, 1995b; SCHENCK et al. 1997, 1999; STAIB and SCHENCK, 1994; GROENENDIJK et al., 2000, 2001)

# REPORT

## ON THE TRACKS OF THE CONGO CLAWLESS OTTER (*Aonyx congicus*) IN GABON)

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**Abstract:** The distribution and status of the Congo clawless otter (*Aonyx congicus*) has yet to be assessed in the rainforests of central Africa where the species is said to occur. No study had been conducted up to now, probably due to the remoteness of these areas. A 15 day mission (July 2001: St Anne), followed by a further 4 weeks mission (January 2002: Setté Cama, Lopé reserve, Langoué baï) to Gabon, allowed us to gather information on *A. congicus*, to see the animal and many tracks, and to begin to form a network to get information not only in Gabon but also from the rest of central Africa. *A. congicus* seems to thrive in the virgin tropical rainforests of the interior, the main threat being hunting for bush meat, mainly in southern Cameroon but also, apparently, on a smaller scale in Gabon.

### INTRODUCTION

Four species of otters are known to exist in Africa. The distribution range of the Eurasian otter (*Lutra lutra*) is limited to Morocco, Algeria and Tunisia. The spotted-necked otter (*Lutra maculicollis*) occurs in the wetlands of sub-Saharan areas along with the Cape clawless otter (*Aonyx capensis*), except in the Congo River basin where the Congo clawless otter (*Aonyx congicus*) replaces it.

Due to the remoteness of the equatorial rainforests of central Africa, and other difficulties in working there, the distribution, status, and biology of the latter species are very poorly known.

The Otter Specialist Group would like to increase knowledge and conservation activities on African otters, as agreed at the OSG meetings in Hankensbüttel, Germany (November 2000) and in January 2001 at Valdivia, Chile (REUTHER, 2001). As the Regional Representative for the French speaking African countries, I have been initiating a survey on *A. congicus*, mainly in Gabon, and in Congo in the near future. In these countries, among the 2 species of *Aonyx*, only *A. congicus* occurs and no confusion is possible with *A. capensis*. Data concerning the distribution of *L. maculicollis* have also been gathered in Gabon.

### METHODS

#### Bibliography and Visits to Museums

An extensive review of the bibliography and Internet addresses of collections has been conducted, whilst trying to sort out the main characteristics which define the 2 African Aonyx species.

Visits to the collections of the Central Africa Royal Museum (Tervuren, Belgium) and the National Museum of Natural History (Paris, France) were useful for establishing criteria for the differentiation, but some skins were found that appeared to be intermediate between the 2 *Aonyx* species.

**SURVEY METHODOLOGY**

Semi-structured interviews were carried out with local fishermen, forest utilisers, and gamewardens to obtain general information about the existence of otters and human impacts on otter populations.

Active observations, both of otters and their signs (tracks, spraints), were undertaken. Due to the similar shape of the hands and feet (around 11 cm long and 8 cm wide without prints of claws or webbing), prints of *A. congicus* were expected to be almost the same as those of *A. capensis*. The spraints have never been described before,
therefore, we also focused on those animals whose droppings could be confused with those of *A. congicus*.

In an attempt to form a network of key informants, a number of meetings with scientists from different institutions all over Central Africa were organised.

**SURVEY SITES**

Gabon lies on the equator on the west coast of Africa and covers an area of 267 000 km$^2$, 85% of which is covered by tropical rainforest. Four sites were selected, 2 of them being currently protected (Gamba complex, Lopé Reserve), one just about to be (Langoué baï), and one not yet protected (Mission, St Anne).

The African equatorial rainforest is a very harsh environment. Amongst the difficulties we experienced were a lack of roads, resulting in most of the movement inside the forest being undertaken by foot, wild animals, such as elephants and gorillas, almost invisible in the vegetation and easy to encounter unawares, and diseases (Ebola, Malaria, Yellow fewer, Hepatitis).

The climate is very much the same all over Gabon, with an average temperature around 25°, and 2 wet seasons; one from February to May and the other from September to December, with annual rainfall between 1500 and 3000 mm.

**The Gamba Protected Area Complex**, situated along the southwest coastal zone of Gabon, is composed of eight protected areas, including the Setté Cama, Iguela, Petit Loango, Ngove-Ndogo, Monts Doudoua, and Moukalaba reserves, totaling 11,320 km$^2$.

The Complex hosts a mosaic of ecological habitat types, including sandy seashores, freshwater lagoons, mangrove swamps, tropical forests (both selectively logged), gallery forests, secondary grasslands, and grassy savannas. The complex is important with respect to the Africa distribution of wildlife as it represents the extreme linkages between the tropical forests of Central Africa and the savannah ecosystems of southern Africa.

Due to the limited amount of time (7 days), we stayed most of the week in Setté Cama (02°30'S, 09°44'E), a little village situated on a narrow strip of sand between the sea and the lagoon. We surveyed the Nature trail 3 times, which goes along the lagoon from Setté Cama village to a point 4 km north of it. A day in Petit Loango (02°23'S, 09°37'E) allowed us to survey 10 km of forest. At both these sites, otter signs such as tracks and droppings were the focus.

**La Lopé Reserve** (0°03'-1°10'S, 11°17'-11°50'E) is situated in the centre of Gabon near the Ogooué River, the main river of Gabon, totalling 536 km$^2$ of mainly tropical rainforest. A research station on primates has been in operation here since 1963. We collected information about otters in the la Lopé Reserve and looked through documentation for 2 days. We also spent one day surveying the banks of the Ogooué River in front of la Lopé village.

**Langoué baï** (00°11'S, 12°33'E) is situated in central eastern region of Gabon. A baï is a kind of clearing in the forest, with a river and sometimes some salt marshs. Animals such as elephants (*Loxodonta africana*), gorillas (*Gorilla gorilla*) and sitatungas (*Tragelaphus spekii*) frequent these areas, probably to get salt. Otters are more easily seen in these open biotopes than in the forest. Langoué is the only baï in Gabon 'easily' accessible to scientists; 'easily', however, means a 38 km walk

through dense jungle. We looked for otter signs on every river crossed on the way to the baï (3 days there, 2 days back) as well as on the baï itself (4 days there).

**Mission St Anne** is located not far from the sea, on the west coast near the town of Omboué. The Fernan Vaz lagoon is a complex of rivers mixing with the sea.

## RESULTS

### Brief bibliography synthesis

*Aonyx congica* is very often found in the literature, however, *A. congicus* is now considered the correct spelling. As the Greek onux is masculine and the species group name is a Latin adjective, it must agree in gender with the generic name (van ZYLL de JONG 1987; van BREE et al. 1999).

LÖNNBERG (1910) was the first to describe *A. congicus* from a specimen coming from the lower Congo, but called it *A. capensis congica*, thinking it was a subspecies of *A. capensis* with small molars. Pohle (1920) described a new species, *A. microdon*, from specimens coming from Cameroon and HINTON (1921) gave a very good description of 2 specimens coming from Uganda, placing *A. congicus* in a new genus, *Paraonyx*, which would include all African clawless otters with small molars. The subspecies therefore became *Paraonyx philippsi* from Uganda, *Paraonyx congica* from lower Congo and *Paraonyx microdon* from Cameroon. He added: "Nothing is yet known of the habits of these remarkable otters". Eighty-one years after this situation little has changed! ALLEN (1924) described 13 specimens of what he called *A. capensis*, though some of these could be *A. congicus* (SHOUTEDEN, 1942). A picture of an *A. congicus* cub is available on line at www.diglibl.arrmh.org (Chapin and Lang mission 1909-1915) and is clearly misquoted as *A. capensis*.

DAVIS (1978) thinks that the genus *Paraonyx* does not appear to be valid because tooth size varies geographically and *Paraonyx* could be a variant adapted to a different composition of prey species in the forested habitats of west central Africa. However, both van ZYLL de JONG (1972) and WOZENCRAFT (1993) recognised *A. congicus* and *A. capensis* as separate species. Within *A. congicus*, KINGDON (1997) recognised 3 sub-species, as did HINTON and HARRIS (1968), but recent authorities consider the species monotypic (WOZENCRAFT, 1993).

### Criteria for differentiation between the 2 *Aonyx* species

Based on criteria given by different authors and on our personal observations of skins, photos, and sightings of individuals, we propose the following external criteria for identification (Table 1).

**Table 1**. Criteria of species differentiation

| **Criteria of Identification** | ***Aonyx capensis*** | ***Aonyx congicus*** |
|---|---|---|
| Appearance | Large and bulky | |
| Weight | 15 - 25 kg | |
| Length (head and body + tail) | 75 to 90 cm + 40 to 60 cm | |
| Fur | Upper parts from dark brown to pale tan<br>Under parts lighter; cheeks, chin, throat and upper chest white | |
| Fingers | Quite naked, no claws, no webbing | |
| Toes | Webbed to the base of the second phalange,<br>rudiments of claws on the 2°, 3°, 4° toes only | |
| Head and Shoulders | Light frosted | Conspicuously frosted |
| Margins of the ears | Lightly white or brown | Conspicuously white |
| Under fur on the cheeks | Beige | White |
| Rhinarium | Rounded or lightly V shaped | Straight |
| Dark patch between the nostrils and the eyes | Mixing with the colour of the fur | Surrounded by white so more prominent |

(HINTON, 1921; ROSEVEAR, 1974; KINGDON, 1977; DUPLAIX, pers. comm.; own data)

With *A. congicus,* the contrast between the upper and the ventral parts of the anterior part of the body is weakened by the silvery frosting of the head and shoulders (HINTON 1921). The frosting is due to the silvery tips of most of the longer hairs. Throughout the back to the root of the tail many of the longer hairs are similarly tipped

with silver, but such hair-tips are neither sufficiently numerous nor sufficiently long to produce more than a distinct and regular peppering pattern (HINTON, 1921).

The absence of the super-ciliary tufts in *A congicus* was not mentioned as a skin in the Paris museum clearly has some.

Cheek tooth size ($P^4$, $M^1$ and $M_1$, $M_2$) is classically mentioned as representing a good criterium to distinguish *A. capensis* (large sized cheek teeth linked to an alimentation including crabs (ROWE-ROWE, 1977) from *A. congicus* (cheek teeth slender and weaker, linked to an alimentation of softer prey). A statistical analysis is about to be undertaken on museum skulls to find an index and to fix a threshold between the two species.

All the criteria given above are quite subjective, and can only really be used when both species are side by side for comparison. In a museum, such comparisons are easy to check but, in the field, distance of observation and wet fur may well prevent the use of these details.

**Visits to collections**
The collections of the Central Africa Royal Museum hold 32 skins of *A. congicus*, 17 skins of *A. capensis*, and 3 stuffed cubs of *A. congicus*. The 30 skulls of *A. congicus* were on loan when we visited the museum. We noticed that some skins were quoted as *A. congicus* on the tag and *A. capensis* in the catalogue.

The National Museum of Natural History, has 5 skins of *A. congicus* and 1 skin of *A. capensis*, and 3 skulls of *A. congicus* and 1 of *A. capensis*; 2 skins and 1 skull were, however, misquoted.

All these misidentifications confirm the fact that the two species are very close in appearance and some better identification criteria are needed.

As far as it is possible to say today, following the examination of 58 skins in museum collections and analysis of several photos and video footage by the authors, the best criteria for differentiation remains the quadrangular black patch located between the nose pad and the eye, circled by white in *A. congicus* and mixing with the brown fur of the same colour in *A. capensis*. Even so, some skins from the Democratic Republic of Congo (formerly Zaire) clearly show some intermediate forms, though most of these come from areas at the limits of the known distribution range of *A. congicus*.

**MISSIONS TO GABON**

**Setté Cama in the Gamba Complex**
Through interviews, it would appear that no otter has ever been seen in the area of Setté Cama (gamewardens, A. Greth, pers. comm.), although we got interesting data from rivers farther upstream of the sea (Ndogo River and Lake Kivoro). The main results in this area were the profusion of tracks and droppings of water mongoose (*Atilax paludinosus*), faeces of which could be easily confused with *Aonyx*. STUART (1998) gives a size of about 20 mm in diameter for water mongoose droppings, up to 30 mm for Cape clawless otter, and 15 mm on average for droppings of spotted necked otter. Otters crush and eat the entire crab, whereas *Atilax paludinosus* usually leaves the carapace, pincers and legs of larger crabs (STUART, 1993). ROWE-ROWE (1977) gives a mean scat diameter for *A. paludinosus* of 18.8 mm (15-22), 25.1 mm (20-32) for *A. capensis*, and 14.5 mm (11-21) for *L. maculicollis*.

The faeces that we found all over the area, were sometimes single specimens, and sometimes gathered in latrines. They were mainly composed of crab remains and the diameter was from 18 to 30 mm with a mean diameter of 23 mm, larger than the usual diameter of water mongoose droppings. Nevertheless, in most of them it was possible to find the characteristic banded hair belonging to *A. paludinosus*. With a single spraint, confusion could be easy between *Aonyx* and *A. paludinosus* in this area where the diameter of the *A. paludinosus* spraints is bigger than previously recorded.

**Lopé reserve**

We were not fortunate enough to find any signs of otters but we gather information (Table 2). Both species of otters are present in the reserve as already quoted (Anonymous 1994).

**Table 2**. Otter data in la Lopé reserve and Ogoou&ecaute; river (HJ: Hélène Jacques, FA: Franck Alary)

| **Data collected by /on** | **Observer** | **Date of the observation** | **Place of observation** | **Otter species** | **Behaviour** |
|---|---|---|---|---|---|
| HJ 4.7.01 | Patrice Christy | ? | 'Bridge of eagle' | *L. maculicollis* | Goes under the bridge |
| HJ 5.7.01 | Lee White | sometimes | Prints on the banks of Ogooué river | *A.congicus* | |
| HJ 5.7.01 | Lee White | says that one of his assistants has seen it | Lopé reserve | 5 *L. maculicollis* | "fished too well" |
| HJ/FA 15.1.02 | Patrice Christy | 1994 | Inundated forest Ogooué | *A. congicus* | Ran away |
| HJ/FA 15.1.02 | Christian Mbina | 1998 around 10 h | Koumbian river | Probably *L. maculicollis* | Lying on a tree |
| HJ/FA 17.1.02 | Stéphanie Latour | 16.11.01 11h 30 | Koumbian river | 3 *L. maculicollis* | Ran one after the other |
| HJ 21.1.02 | Jean Toussaint Dikangadissi | 2 or 3 times | Koumbian river | *L. maculicollis* | |
| HJ/FA 22. 1.02 | Jean de Dieu Makinda | 2000 | Junction Lopé/Ogooué | *A. congicus* | Got out of the water and then went back |
| HJ/FA 22.1.02 | Jean de Dieu Makinda | 10/2001 | In front of the hotel la Lopé | *A. congicus* | fishing |

**Langoué Baï**

Many tracks of *A. congicus* were found on the way to the baï and one individual was the baï (Table 3). Among the 5 rivers prospected, 4 of them were used by *A. congicus*, as indicated by the unmistakable tracks. Four of the rivers were very small, from 1 to 5 meters wide and 10 cm to 1 m deep, the fifth one was about 30 meters wide. None of the rivers were could be considered as 'marshy', although the banks were muddy in some places.

**Table 3**: Otter data collected on the way to Langoué Baï and on the Baï (Geodesic system WGS 84)

| Date | Observer | Place | Observation |
|---|---|---|---|
| 18/01/02 | HF/FA/SE | 1° camp 'Limba'<br>5 hours from Dilo River<br>S 00°09'12.6"<br>E 012°24'49" | 150m from the ford, 4 recent tracks in the mud (125x90mm) and tail mark of 30cm |
| 18/01/02 | HF/FA/SE | 50m downstream of above | Track in the sand (115x80mm) |
| 18/01/02 | HF/FA/SE | Same river<br>Same place | At the confluence of 2 small rivers, on a fallen trunk, a dropping looking like a spraint without the smell |
| 19/01/02 | FA/SE | Same river | 2 hours of prospecting without results |
| 19/01/02 | FA/SE | Next river<br>S 00°10'31.5"<br>E 012°28'32.1" | Prospecting 1 hour without results |
| 22/01/02 | MD | River of the baï<br>S 00°11'25.1"<br>E 012°33'38.2" | 9h 30: one *Aonyx* swims upstream |
| 23/01/02 | HJ/FA | Same as above | 9h: one *Aonyx* swims upstream |
| 24/01/02 | FA/MD | Same as above | 11h 40: one *Aonyx* swims upstream |
| 25/01/02 | FA/SE | River of the baï downstream | 500m from the Southern exit: tracks (120x80mm) + toboggan |
| 26/01/02 | HJ/FA | 'Bridge of Abeilles'<br>S 00°09'36.5"<br>E 012°25'59.6" | 2 tracks in the sand (120mmx85mm) |
| 27/01/02 | HJ/FA | Landing stage Dilo River<br>S 00°06'40"<br>E 012°20'10" | Tracks in the mud going in and out of the water (125x70mm)<br>Print of a toboggan |

Otter Mission: HJ: Hélène Jacques, FA: Franck Alary
Team of the baï / Wildlife Conservation Society: SE: Sofiano Etouck, MD: Modeste Douckaga

**Mission to St Anne area**

This lagoon is situated along the west coast of Gabon and contains otters according to reports of locals. Based upon the description given by fishermen, a picture taken by C. Wilks of a *L. maculicollis* drowned in a fishtrap, and a sighting by A. Falcone (pers.com.), we think *L. maculicollis* is more widespread in this area than *A. congicus.* However, due to their being hunted, along with other wildlife, otters are difficult to see in this area.

## DATA ON DISTRIBUTION IN CENTRAL AFRICA

About 30 reliable records of *A. congicus* were collected from the following countries. Cameroon: Abong Mbang (W. Bergman, pers. comm.), Dja Reserve (F. Alary, pers. comm.), north of Dja Reserve (H. Planton, pers. comm.); Central African Republic: Dzanga-Sangha National Park (A. Turkalo, J. Ray, pers. comm.); Congo: the Nouabale-Ndoki and Odzala National Parks (B. Curran and E. Stokes, pers. comm. and J. M. Froment, pers. comm. respectively); and from Gabon: Lopé reserve (L. White, pers. comm.), Langoué baï (cf this paper), the Liboumba, Louayé and Lodié rivers and surroundings (S. Lahm, in litt.), Makokou (P. de Watcher, pers. comm.), and Lekori (O. Bourry, pers. comm.).

Of interest, but not yet surveyed, is Nigeria as *A. congicus* is often quoted as occuring in this country. Present day Cameroon is, in fact, the result of the union of the former French Cameroon and part of Eastern Nigeria in 1968. Before 1968, the frontier, clearly shown on old atlases, was nearly straight along a line from Tchad lake to Douala. This has led to a number of misquotations! For example, HARRIS (1968) quotes *Aonyx microdon* occuring in Nigeria in the Ndop Plain, and ROSEVEAR

(1974) puts this location in Cameroon, 40 km east of Bamenda. A further record in Nigeria was given by ROWE-ROWE (1995), but without any exact location.

We contacted a team working in south-eastern Nigeria (ENIANG and LUISELLI, 2002) who gave us interesting data about *A. capensis*, but who doubt that there are any *A. congicus* in Nigeria (in litt.). A recent potentially reliable record for the old Mfameyi Forest needs to be confirmed by further studies as it could well be *A. capensis* (in litt). Neither Van ROMPAEY (1999) nor HAPPOLD (1987) mention A. congicus in Nigeria.

**DISCUSSION**

Although some authors thought that *A. congicus* may have vanished (e.g. REUTHER, 2001), this species does not seem to be particularly rare in Gabon as we collected reliable data in a short time.

Virgin rainforest appears to be the best place to collect signs of *A. congicus*. On the coast, due to the presence of more or less brackish water, disturbance, or lack of preferred food, no proof of this species was recorded. Further, an NGO (Aventures sans frontières, Protomac), working on sea turtles along the coast of Gabon for some time, has not seen or heard about otters. Further inland, in the freshwater lagoons and mangrove swamps located along the coast (Mission St Anne, Kivoro lake, Lambaréné lakes), records of *A. congicus* from locals are few. The presence of crabs does not seem to be an important factor for the presence of this species, as compared to *A. capensis*. This reinforces the statement that the smaller molars of *A. congicus* are associated with softer prey such as worms. The swamp otter, as *A. congicus* is also known, also seems to be at ease in both large and small rivers, according to many locals. So far, no records have been made in true swamps. In pristine rainforest, *A. congicus* seems to thrive, leaving many tracks and being relatively easy to see in clearings inside the forest.

Even in the museums visited, the skulls and skins of *A. congicus* outnumber *A. capensis*, though it is true that the Tervuren and Paris museums have been stocked from the French speaking part of Africa, i.e. mainly from the range of *A. congicus*. In comparison, the British Museum has 12 *A. congicus* skulls against 20 for *A. capensis*. Another interesting point is the existence of transitional forms between the 2 African *Aonyx* species. Some skins in the Tervueren Museum show intermediate patterns. In particular, there are examples of *A. capensis* showing a patch between the eye and nose more conspicuous than normal, these coming from areas situated at the limits of the distribution range of *A. congicus*. The possible existence of areas of sympatry between the 2 *Aonyx* species, with individuals morphologically intermediate, needs to be investigated. This kind of hybrid form has been described for savannah and forest elephants in the Garamba National Park (ROCA, 2001) and the same question has arisen for northern Angola (De BARROS, 1967). Sympatric areas are also suspected in Garamba (both *Aonyx* species have been found in the park and skins of both species are labelled from areas near the park in the Tervuren museum), and in Cameroon, which hosts both savannah and forest biomes.

**THREATS IN GABON**

Habitat destruction does not seem to be a threat for otters at the present time. Tropical evergreen lowland forest presently covers 85% of Gabon (Guineo-Congolian rainforest) and the annual rate of deforestation is around 0.5% (WCI, 2000), less than that of many other tropical countries. Nearly half of the forest has never been exploited. The population density is very low, with only 1 million people, and is concentrated mainly in towns; overfishing or human disturbance are, therefore, a problem in only a few areas. In a few rivers where *A. congicus* is considered as a competitor for fish, they are killed (S. Etouk, pers. comm.) or the place avoided (S. Lamh, pers.com.). We have a few records of otters drowned in fish traps but *L. maculicollis* seems to be more concerned than *A. congicus*. Sometimes, a cub is caught in order to try to sell it to Europeans. We know of 2 cases of this, in August 1968 (P. Charles Dominique, pers.comm.) and in January 2002 (O. Bourry, pers.com.); In both cases, the cub did not survive. Hairs were taken from the second animal for genetic sampling, and pictures were taken of both.

The main threat for otters, and many other species, remains hunting for bush meat. The two species of otters are not legally protected in Gabon except in reserves. Nevertheless, otters are not particularly

appreciated as bush meat because of the bad ('fishy') taste of the meat and the difficulties in catching the animal. They are caught in snares or shot whilst being chased by dogs. An otter is sold for between 10 to 15 US$. The guts or the penis are considered as an aphrodisiac but no more so than other animals such as crocodiles. In Southern Cameroon, the problem is more acute (cf F. Alary report), and we have gathered 4 different reports describing otters sold as bush meat in the Dja and Abang Mbang areas, all with photos showing clearly *A. congicus*.

**FUTURE PROSPECTS**

In July 2002, we plan to stay 3 weeks in the Nouabale Ndoki National Park in Northern Congo, where *A. congicus* is very often seen in one of the baïs by scientists working on gorillas and elephants. The aim of this mission will be to study the species biology.

The collections of skulls of both species of African *Aonyx*, in the Tervuren and British museums, will be measured and a statistical study will be conducted. The skins from these two museums will be re-examined to produce more reliable criteria for identification.

Threats will be evaluated in the Congo and, more specifically, in Cameroon.

The network of informants will be extended in order to get further data on the 3 species of otters in west and central Africa.

**CONCLUSION**

This study has provided evidence for the presence of *A. congicus* in Gabon, provided more precise data on the distribution in central Africa, as well as raised new questions about possible areas of sympatry between the 2 African *Aonyx* species.

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**Résumé : Sur les Traces de la Loutre du Congo (*Aonyx congicus*) au Gabon**
La répartition et le statut de la loutre du Congo (*Aonyx congicus* Lönnberg, 1910,lutrinae, mustelidae, camivora) doivent être étudies dans les forêts tropicales d'Afrique Centrale où l'espèce est réputée présente. Aucune recherche n'y a été conduite jusqu'à présent, vraisemblablement du fait de 1'éloignement de ces zones.
Une première mission de 15 jours au Gabon (Juillet 2001: St Anne) suivie d'une autre de 4 semaines (Janvier 2002: Setté Cama, Lopée reserve, Langoué baï) nous a permis de collector des informations sur *A. congicus*, d'observer 1'animal ou ses traces, et d'initier la mise en place d'un réseau d'information non seulement au Gabon mais aussi en Afrique Centrale. *A. congicus* semble prospère dans les forêts tropicales intérieures, la principale menace étant la chasse pour la viande, principalement au sud du Cameroun mais aussi apparemment, à une échelle plus réduite, au Gabon.

**Resumen: Tras las Huellas de la Nutria del Congo (*Aonyx congicus*) en Gabón**
Aún no ha sido evaluada la distribución y el estado de la nutria del Congo (*Aonyx congicus* Lönnberg, 1910, lutrinae, mustelidae, camivora) en las selvas de África Central, donde se dice que la especie ocurre. Probablemente debido a lo remoto de tales áreas, no se han conducido estudios hasta la fecha. Una misión a Gabón de 15 días (Julio de 2001: St Anne), seguida de una de 4 semanas (Enero de 2002: Setté Cama, reserva Lopé, Langoué baï) nos permitió recoger información sobre *A congicus*, ver el animal y varias huellas, y comenzar a establecer una red para recabar información no sólo en Gabón, sino en África Central. *A. congicus* parece prosperar en selvas tropicales virgenes del interior. Su mayor amenaza es la caza por su carne, en particular en el sur de Camerún, pero aparentemente también en una menor escala en Gabón.

# R E P O R T

## STILL ON THE TRACKS OF THE CONGO CLAWLESS OTTER (*Aonyx congicus*): FIRST MISSION IN CAMEROON

Franck Alary[1], François Moutou[2] and Hélène Jacques[3]

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**Abstract:** A 15 day first-step mission was undertaken in Cameroon during February 2002. The purpose of this prospective trip was, first of all, to raise interest amongst wildlife institutions (Governmental and NGOs) concerning the 3 species of otters supposed to inhabit this country. The same kind of work has been initiated in Western African countries such as Togo, Burkina-Faso, Benin and Niger. This will allow the institution of a network around the French speaking part of Africa, in order to collect information on distribution, status and threats as regards otters.

### INTRODUCTION

A 15 day first-step mission was undertaken in Cameroon during February 2002. The purpose of this prospective trip was, first of all, to raise interest amongst wildlife institutions (Governmental and NGOs) concerning the 3 species of otters supposed to inhabit this country. The same kind of work has been initiated in Western African countries such as Togo, Burkina-Faso, Benin and Niger.

This will allow the institution of a network around the French speaking part of Africa, in order to collect information on distribution, status and threats as regards otters.

### WHY CAMEROON?

Cameroon is located on the geographical transition zone between the tropical forest present in the South, and the savannah biome in the North (IUCN, 1996). The spotted-necked otter (*Lutra maculicollis*), Cape clawless otter (*Aonyx capensis*) and Congo clawless otter (*A. congicus*) are all said to be present in Cameroon (DORST and DANDELOT, 1972; EUROPEAN COMMISSION, 1999; ESTES, 1991; KINGDON, 1997; ROSEVEAR, 1974) and their distribution is likely to overlap in several areas.

### IMPORTANCE FOR THE CONGO CLAWLESS OTTER

Concerning the Congo clawless otter, sometimes called the swamp otter, the most interesting parts of the country seem to be the Congo lowland forest blocks in the South-East (VIVIEN, 1991; VIVIEN and DEPIERRE, 1992). Therefore, contacts have now been made with the WWF, which is in charge of the 'Lobéké area' management, and with the European Community, which runs several projects in buffer zones of the Dja National Park. The Dja National Park, managed by ECOFAC, has been visited as well as the swamp area of Nyong, North of Dja.

In addition, we visited the IUCN representatives in Yaoundé. The Limbe Wildlife Centre (on the coast, close to mount Cameroon) and the Yaoundé Zoo were also visited but, unfortunately, none of these institutions kept otter specimens.

Semi-structured interviews were held with locals and, particularly, as far as they were cooperative, with hunters and fishermen.

The first results confirm the existence of the species in the Dja surrondings (BERGMANS, 1994; ECOFAC, 2001) and a day of prospecting on the Dja River was enough to find several indicators of its

presence. It was also possible to confirm the presence of threats in this area. These include hunting for bushmeat, which is very common in this area (DELVINGT et al., 1994), as it is on the other side of the border in Northeastern Gabon (LAHM, 2001). The locals also use part of the body as a witchcraft material and as an aphrodisiac, as well as the skin for drums (hunters, pers. comm.). We received or took ourselves several pictures of killed animals sold along the road or in villages (4 different sites in this region between 1992 and the present: Somalomo (Franck Alary), Abong-Mbang (Mark van der Wal), North of Dja (Hubert Planton), Doume (Jean-François Noblet). Moreover, destruction of habitat in this area represents a serious problem for wildlife (WCI, 2000), otter populations included.

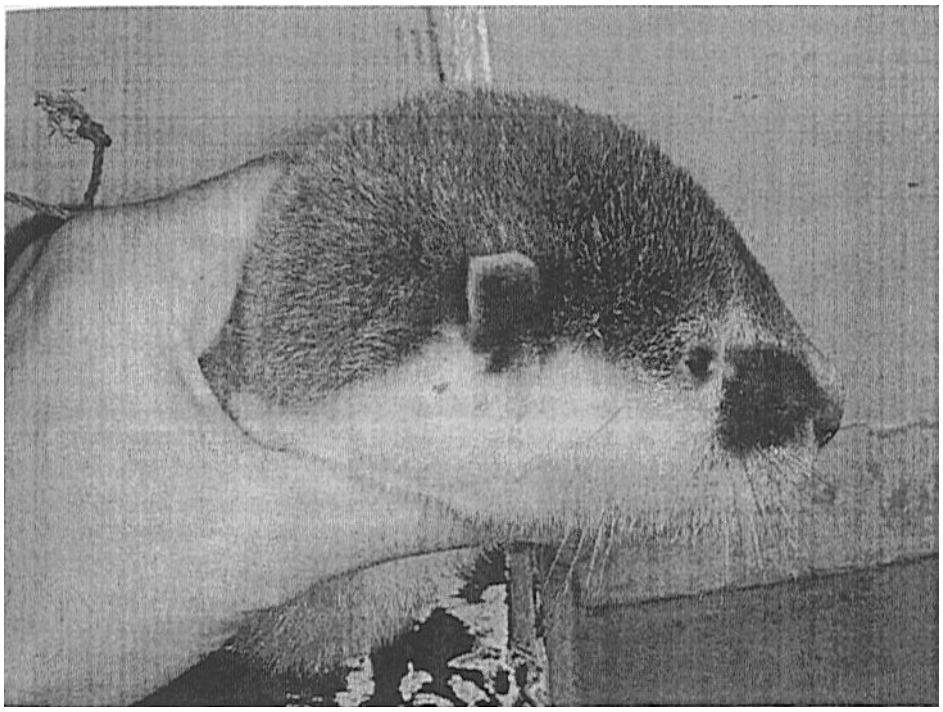

**Figure 1**: Congo Clawless *(Aonyx congicus*) cub

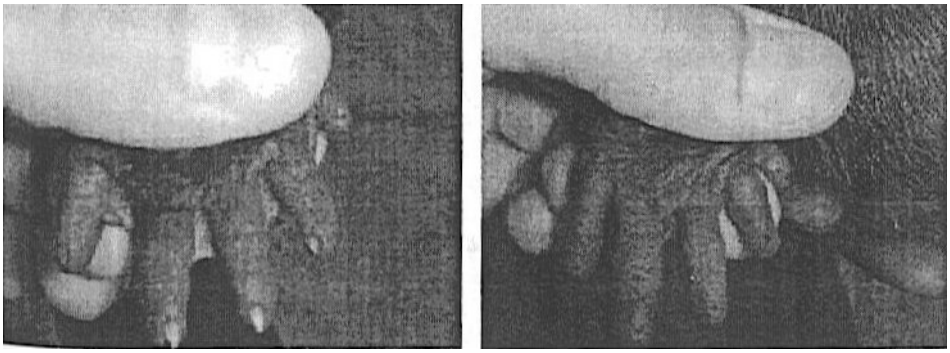

**Figure 2**: Forefoot (left) and hindfoot (right) of a Congo clawless otter (*Aonyx congicus*) cub

The spotted-necked otter also lives on the Dja (BERGMANS, 1994) and both species are the subject of conflicts with fishermen, related to destruction of nets, stolen fish, and disturbance (fishermen, pers. comm.).

It is important here to mention local legislation, which totally ignores the three otter species, being absent from both the list of protected mammals in Cameroon, as well as the game species list (Pelissier, pers. comm.).

One particular region, the Mbam and Djerem National Park located North-East of Yaoundé, appears to be an interesting site regarding the mixed distribution of the 3 species. This area supports both

savannah and forest fauna (MAISELS et al., 2000). Prospecting here would provide an occasion to look for a possible sympatry between the Cape clawless otter and the Congo clawless otter and to address the question of possible hybridisation. Unfortunately, it wasn't possible to explore the area during this first mission. At present, this brand new park doesn't yet have a developed system of infrastructure, making future surveys difficult. However, contacts have been made with WCS Cameroon, which is conducing the mammal inventory of the park. It may be possible to plan a future mission in order to collect samples for genetic analysis and, eventually, to characterise transition forms, as has already been undertaken with forest and savannah elephants (ROCA, 2001).

## CONCLUSION

This initial 15 day mission to Cameroon allowed us to rate the country, and especially the south-east, as an important area for the future study of the Congo clawless otter. However, a number of difficulties were encountered, similar to those found in neighbouring Gabon, which may hamper future studies, i.e. a lack of infrastructure, forest environment difficult to explore, and mistrust from locals. It is suggested, at this stage, that future missions to Cameroon to study otters should concentrate on the Mbam and Djerem National Park. It will also be important to continue to gather data from other parks not already visited, such as the Campo Reserve on the border with Equatorial Guinea, the Douala-Edéa reserve close to Douala, and the Korup National Park on the frontier with Nigeria.

***ACKNOWLEDGEMENTS*** *- Thanks to Hubert Planton, Mark van der Wal, and Jean-François Noblet for giving us copies of their pictures. Special thanks to Pierre Carett from the European Community for his support and to M. Vivien for his valuable advice.*

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**Résumé : Toujours sur les Traces de la Loutre du Congo (*Aonyx congicus*): Premiàre Mission au Cameroun**

Une mission initiale de 15 jours a été effectuée au Cameroun en février 2002. L'objet de ce déplacement prospectif a été, avant toute chose, de susciter l'intérêt des organismes (institutionnels ou O.N.G.) chargés de la faune sauvage, vis-à-vis des 3 espèces de loutres réputées présentes dans ce pays. Une démarche analogue a été engagée dans les pays de l'Ouest africain tels que Togo, Burkina-Faso, Bénin et Niger. Cela permettra la mis en place d'un réseau d'information sur les loutres en Afrique francophone, visant à y préciser leurs répartition, statut et menaces.

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(Unitat De Recerca En Farmacologia, Institut Municipal D'lnvestigació Mèdica (IMIM), Doctor Aiguader 80, 08003 Barcelona, Spain).

## GIANT OTTER BIBLIOGRAPHY

**Nicole DUPLAiX, Jessica GROENENDIJK, Christof SCHENCK, Elke STAIB, Sheila SYKES-GATZ**

This is a 17 page compilation of literature on all aspects of Giant Otter (*Pteronura brasiliensis*) biology. Due to the size of this database, I am unable to include it in a printed form in the IUCN OSG Bulletin.

Those of you who are interested to receive it can contact me and I will provide either a printed copy or an electronic version!

Amo Gutleb (editor)

NOTE: This list of references is not meant to be exhaustive or complete but represents a working tool for persons who are interested in Giant Otters but who do not have access to a large university library. We welcome any additions or corrections:
NDParis@aol.com, fzsgop@terra.com.pe

## PROCEEDINGS OF THE FIRST OTTER TOXICOLOGY CONFERENCE

Isle of Skye, September 2000
J. Int. Otter Surv. Fund 1,1-184

Edited by J.W.H. Conroy, P. Yoxon, A.C. Gutleb

The Proceedings of this conference cover a wide range of articles related to the question of how far environmental contaminants may have contributed to the decline of the Eurasian otter (*Lutra lutra)* in Europe in the last decades.

For further information please contact:
IOSF
Broadford, Isle of Skye IV49 9AQ
Scotland.
e-mail: iosf@otter.org

## Byelorussian Publications on the River Otter and Other Mustelids

http://zoology.nsys.by:8101/literature.html
Dr. J. Shergalin,
Sopruse pst. 175-58
Tallinn 13413 Estonia.
Tel: (3725) 090684
Fax: (3726) 599351
E-mail: zoolit@hotmail.com
http://my.tele2.ee/birds/

# C O N G R E S S  A N N O U N C E M E N T S

## International Otter Conference, Isle of Skye
## 30 June - 4 July 2003

The International Otter Survival Fund plans to hold a conference entitled 'The Ecology and Status of the Eurasian otter on the Isle of Skye from 30 June to 4 July 2003.

The aim of the conference is to present data from new and innovate research on the species. The conference will have a number of themes, including:

1. Status of the otter in Europe:
2. Threat to otters
3. Otter Conservation
4 Otter health & welfare
5 Otter care and rehabilitation
6 Otters education and economics
7 Reintroductions
8 Recent research in otter biology
9 Future research, including integrated pan-European projects

A number of scientists have been invited to present key-note talks. Should you wish to present a paper at the meeting, it should fall into one of the nine topics listed above.

Abstracts of papers should be sent to the IOSF, for discussion by the Conference Committee.

Further information on the meeting can also be obtained from the IOSF offices

Jim Conroy
on behalf of the Conference Committee
A.C. Gutleb, J. Ruiz-Ohno, P. Yoxon

**4th European Congress of Mammalogy**

August 2003, Brno/Czech Republic
http://www.kvetna.brno.cas.cz
**Meeting European Section of OSG 2003**

It is planned to hold a meeting of the European Section of the Otter Specialist Group (OSG) in connection with the 4th European Congress of Mammalogy; to be held on July 27 - August 1, 2003, at Brno in the Czech Republic. For further information on the OSG Meeting please contact Michaela Bodner (address -see below)

**First call for contributions for the Symposium 'Conservation and Biology of the Eurasian Otter (*Lutra lutra*)'**

We would like to invite you to participate on the symposium 'Conservation and Biology of the Eurasian Otter (*Lutra lutra*)' as part of the 4th European Congress of Mammalogy. Please note: this is a separate session to the OSG European Group meeting!

Contributions should concentrate on new research projects, methods, or approaches to conservation and the biology of the Eurasian Otter. We will also provide an area to present poster contributions. Please contact either Marcela or Michaela at one of the addresses below for more information.

For more detailed information on the 4th European Congress of Mammalogy, please contact the web site at www.ivb.cz.

On behalf of the Scientific Committee of the 4th European Congress of Mammalogy,

Marcela Kucerova
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**IX International Otter Colloquium**
4th - 6th June 2004, USA
TSERFASS@mail.frostburg.edu
See also From the Chairman's Desk

**9th International Congress of Mammalogy**
2005, Sapporo/Japan
http://cse.ffpri.affrc.go.jp/hiroh/ICOM9Japan.html

Dear Mammalogists,

It is a great pleasure to inform you that the Congress Committee for MAMMAL 2005 (the 9th International Mammalogical Congress; formerly the International Theriological Congress: ITC) has been launched. The Congress Committee will periodically inform you about the preparation of MAMMAL 2005 through e-mail and the web page (www.hokkaido-ies.go.jp/mammal2005/), which is now under construction. Though we are now managing e-mail addresses based on delegate lists of the 7th and 8th ITC, we would like to renew the list of addresses for MAMMAL 2005 with your permission. Are you interested in MAMMAL 2005? Please reply to us (MAMMAL2005@hokkaido-ies.go.jp) to get the periodical information about MAMMAL 2005.

Koichi Kaji and Takashi Saitoh (Secretary General)

Tomoko Takahashi (Secretary)

# CALL FOR INFORMATION

Dear all,

Some months ago I asked about contraceptive methods in otters. Unfortunately I only got the following two answers:

John Lewis, International Zoo Veterinary Group (GB), wrote:
I have used melengestrol acetate and levonorgestrol implants in Asian small-clawed otters effectively and without obvious side effects. I suspect that these would be effective in *Lutra lutra*.

Alfred Melissen, Aqua lutra (NL) wrote:
Splitting up the pair with youngsters in single sex groups would be the preferred method if the enclosure allows this.

Is there really nobody who tried MGA (= Melengestrolacetat; implants), Zona pellucida antigen (PZP-vaccination), Medroxyprogesteronacetat (Perlutex; Supprestal) or Delvosteron in *Lutra lutra*?

Best regards - Heike Weber
Wilhelmstr. 48b, 49808 Lingen-Ems, Germany, e-mail: hweber@iworld.de

Dear Friends,

We are undertaking a survey about materials of *Lontra longicaudis* and *Pteronura brasiliensis* existing in museum collections and one of the objectives is putting that information online. In order to do so we would like to receive further information about museums that hold such material.

We are also preparing a protocol for the collection and preservation of tissues and data of dead animals, aiming to standardise the collection of information about otters in Brazil. In order to do so we need information about what are the most important parts to collect, how to preserve the materials collected and what kind of body measurements or other parameters are necessary.

We would like to thank you in advance.
Best regards,
Helen Waldemarin
Projeto Ecolontras
ecolontras@ecomarapendi.org.br

# LAST MINUTE NOTE

The Otter Project is an NGO that focuses on the southern sea otter (aka California sea otter - *Enhydra lutris*). We are research oriented. We have just brought together 20 scientists (toxicologists, pathologists, epidemiologists, ecologists) from across the United States and Canada to discuss the impacts of chemical contaminants and disease on sea otters and other marine mammals. Within the month the conference report and recommendations will be up on our website. We have also supported research into the interaction between otters and fish traps, and longevity of sea otters in captivity. Please visit our website, www.otterproject.org. I'm hopelessly behind on updates, but I hope you'll find it useful.

Steve Shimek
Executive Director
The Otter Project
3098 Stewart Court
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www.otterproject.org

Dear friends:
Finally, we have finished our web page of Otters from Mexico, which you can access at the following address: http://200.52.182.69/lontra/

I hope it will please you and above all be useful.

Thank you!
Dr. Juan-Pablo Gallo-Reynoso

**ANNOUNCEMENT**

One of the oldest French nuclear power stations (graphite-gas cooled reactor) has been in operation in central Brittany, NW France, from 1966 to 1985. Since 1985, operation stopped and the breaking up process started, which will continue over several decades. As part of this process, radio-ecological impact studies have been carried out by IPSN (Nuclear Safety & Protection Institute) on samples of sediment, plants and fish (BAUDIN-LAURENT, 1994). A new survey will be undertaken this year, 2002, with samples including top predators such as pike (*Esox lucius*) and otter (*Lutra lutra*). We have been asked to cooperate on this study and are now collecting otter spraint samples for measurement of radionuclides (γ-spectrometry).

To our knowledge, there is little available radioactivity data on otter spraints. Some research concerning otter tissues has been published in the USA for *Lontra canadensis* (HALBROOK and JENKINS, 1988), and in Finland (SKARÉN, 1988a,b), Austria (GUTLEB and MRAZ, 1991) and Belarus (SIDOROVICH et al., 1996) for *Lutra lutra*. In Britain, the radioactivity of otter scats has been measured by MASON and MACDONALD (1988) following the Chernobyl reactor accident. This study gives an interesting background for radioactivity levels in otter spraints at several sites from the British Isles but, before starting this new survey, we should like to complete, as far as possible, the background data of what can be considered a "background level" in both otter tissues and spraints. We would therefore be grateful to get copies of any paper, unpublished reports, or even raw data, etc, on this topic. Is or will anyone be carrying out such a survey elsewhere?

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