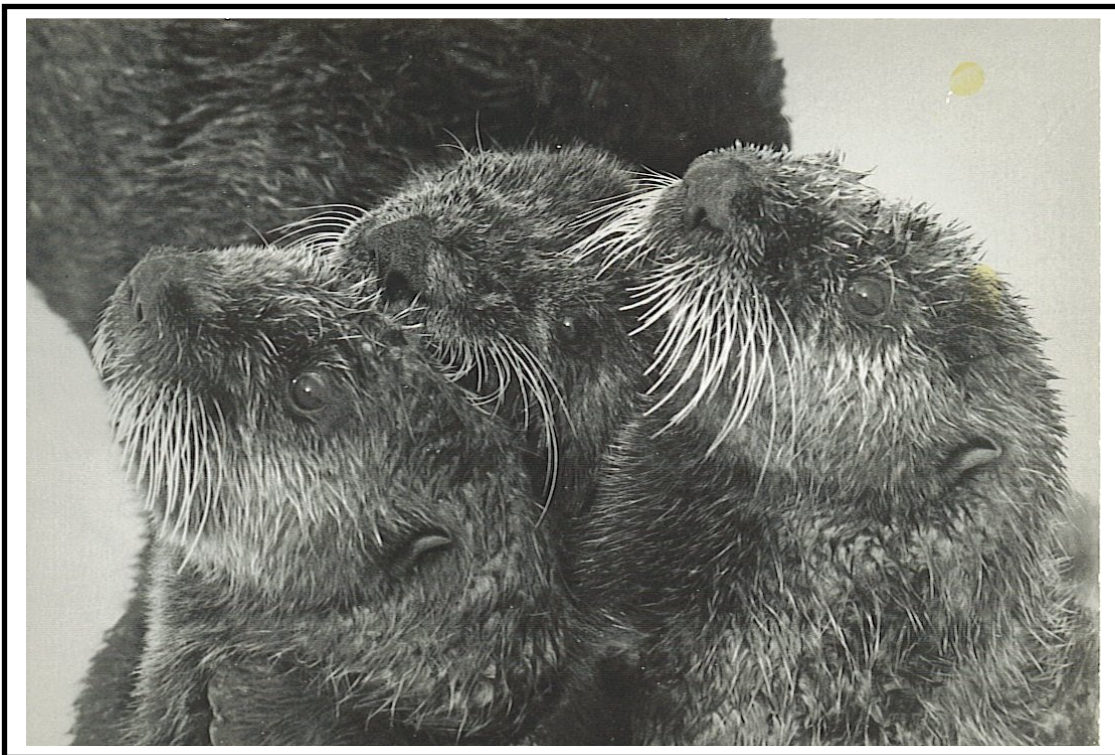


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OTTER SPECIALIST GROUP BULLETIN

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SPECIES SURVIVAL COMMISSION

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The IUCN Otter Specialist Group Bulletin appears biannually. Articles, reports, symposium announcements and information on recent publications are welcome. All submissions should be typed in double-spacing. The submission of an electronic manuscript (WinWord, WP or ASCII) on diskette 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.

Articles will be fully reviewed. Authors are requested to add a notice whether they submit an article or a report.

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NOTE FROM THE EDITOR

I have learnt, from several letters and e-mails, that there have been problems with the postage for the last issue. Although it was promised to me that all envelopes would arrive within 7-12 days, many of them, if not all, reached the overseas destinations after around 2 months. I apologise for any inconvenience. My special thanks go to Roel Hoeve, who organised the postage of a great part of the last issue.

I am very grateful that Marcela Kucerova from the Czech Otter Foundation Fund in Trebon organised the funding of this issue! Marcela thanks a lot! Many thanks to all who either contributed to the costs of printing and postage, or who at least sent back the leaflet. I have to state that I am astonished at the low percentage of leaflets returned (approx. 50%). Obviously, many people on the mailing list are not interested anymore. This copy is therefore being sent only to those who either responded, with respect to the leaflet, or who contributed or reviewed a manuscript during the time of my editorship.

There has been some confusion on how to pay the voluntary contribution to the Bulletin. At the time when I wrote the leaflet, the exchange rate of the US\$ and the Euro was not known, so I had to guess. This is the reason for the difference between the amount in US\$ and Euro's. On the other hand, VISA Austria will only accept payments in Austrian Schillings (ATS) until 2001. This is why I wrote about US\$ and Euro's in the text, but used ATS on the form. I calculated all amounts given on the form in ATS using the official bank rates.

In issue 15/2, the last pages were printed in a smaller layout and the list of recent references was missing. The reason for that was the weight limit of 100 grammes for the Bulletin set by the post office (corresponding to 56 pages), otherwise, the postage costs would be double. I had to make a quick decision at the printers in February to overcome several weeks of extra delay. I am sorry for the small letter size and the missing references. In this issue, you will find the list of references again, including the ones skipped from the last issue.

Please keep in mind that manuscripts should be submitted in an electronic format, which saves a lot of time for me. All manuscripts should have an abstract, as it is very complicated for Alvaro to compile a Spanish abstract when the author gives no English abstract! I received several positive comments on the fact that Spanish abstracts are included. Many thanks to Alvaro, for the Spanish abstracts, and to Kevin, for reading the manuscripts.

I have to thank the 'Otter Bulletin Team', Barbara Gutleb-Rainer (Oosterbeek), Hans van den Berg (Wageningen), and Els Hoogsteede-Veens (GRAFISCH SERVICE CENTRUM VAN GILS, Wageningen) for their continuing help. Once again Tobias did all the work with the envelopes in conjunction with his younger co-worker Helena.

IUCN/SSC OSG GROUP

FROM THE CHAIRMAN'S DESK

As asked by the IUCN SSC, we (the OSG) have spent the last few months updating the rating of otters for the Red List of Threatened Species. Thanks to Anuul Hussain, Gonzalo Medina, Jan Nel, Jan Reed-Smith, Christof Schenk and Tom Serfass for their valuable contributions. We suggest that IUCN make the changes shown in the table below.

Species	Red List category old	Red List Category new
<i>Amblonyx cinereus</i>	Lower risk	Lower risk
<i>Aonyx capensis</i>	(Not listed)	Lower risk
<i>Aonyx congica</i>	Lower risk	Not evaluated
<i>Enhydra lutris</i>	(Not listed)	Endangered
<i>Lontra canadensis</i>	(Not listed)	Lower risk
<i>Lontra felina</i>	Endangered	Endangered
<i>Lontra longicaudis</i>	Not evaluated	Data deficient
<i>Lontra provocax</i>	Vulnerable	Critically endangered
<i>Lutra lutra</i>	Not evaluated	Vulnerable
<i>Lutra maculicollis</i>	(Not listed)	Vulnerable
<i>Lutra perspicillata</i>	Vulnerable	Vulnerable
<i>Lutra sumatrana</i>	Vulnerable	Data deficient
<i>Pteronura brasiliensis</i>	Vulnerable	Endangered

Unfortunately, the response of continental co-ordinators for 'News' was low. Gonzalo Medina reported on a monitoring project for *Lontra provocax* in Chile funded by the Frankfurt Zoological Society and a radio-tracking project on this species funded by the Universidad Austral de Chile and Earthwatch. He rescued a *Lontra felina* cub from a pulp factory. Additionally he is preparing a meeting of Latin American otter specialists for October this year in Chile and the VIII. International Otter Colloquium to be held in the third week of January 2001 in Valdivia City, Chile. For further information, please contact Gonzalo directly (gmedina@uach.cl).

Due to the low response mentioned above, most news arises from Europe. The most important event was the meeting of the European section of the OSG as part of the 3rd European Congress of Mammalogy (ECM3) held in Jyväskylä, Finland between May 29 until June 3, 1999. Three special meetings were dedicated to the otter. In a half-day workshop, more than 20 otter specialists from 12 European countries discussed 'how to better standardise the standard survey method'. Jerzy Romanowsky and I had evaluated most of the published reports on large spatial otter surveys and could show that there are many methodical questions that need to be answered before a real 'standard' for this method is reached. It is planned to publish the results of this evaluation and the recommendations that arose from this workshop in a supplement issue of the OSG Bulletin at the end of this year.

A second half-day workshop was dedicated to the conflict 'otters and fishery'. Marcela Kucerova, who prepared and moderated this workshop, will give a separate report of the outcome in this issue of the Bulletin. The third otter meeting dealt mainly with internal group aspects. I introduced a suggestion for the future structure of the OSG, differentiating co-ordinators, national representatives and members. This suggestion will be discussed with the current continental co-ordinators and the SSC. I will introduce the issue, hopefully in the next issue of the Bulletin. I also presented the state of the Otter Habitat Network Europe (OHNE) project and met with great attention and unanimous approval. Alfred Melissen, the studbook keeper and EEP co-ordinator for *Lutra lutra*, gave a brief overview of what is going on with this species in captivity. Finally, we discussed the progress of the sub-chapters for *Lutra lutra* and Europe for the next Otter Action Plan.

Because of a report from Poland referring to plans of the Polish authorities to destroy an important river system in this country, the group felt obliged to pass the following recommendation:

"Members of the European section of the IUCN/SSC Otter Specialist Group present are deeply concerned about the plan to construct several (up to seven) dams on the lower reach of the Vistula river in Poland. It is feared that such a project should destroy many semi-natural riparian habitats and the functional integrity of a major Polish river catchment, possibly with severe consequences for wildlife diversity. In particular, this project will have serious detrimental effects on the development of a healthy otter population in Poland and will alter migration routes that will allow Eastern European otters to re-colonise Western Europe, where this animal is presently rare or extinct."

A special otter excursion to the field station of the University of Jyväskylä in Konnevesi, organised by Gilbert Ludwig and supported by the Finish Ministry of Environment (thanks to Ulla-Maija Liukko and Bo Storrank), gave participants the opportunity to see some Finish otter habitats and to discuss the situation of the otter in this country. Hunting law presently allows

the issuing of permits to fishpond owners for killing otters. Of the 45 permits handed out last season (Nov. '98 - Apr. '99) only a part was really used to kill an otter. The same situation is expected for the next season. Most participants agreed that this may be acceptable, especially in the light of the habitat situation in Finland (more than 180.000 lakes of more than 500 m²!), and in comparison to the losses by traffic accidents or in fish nets (approximately 100 otters per year). However, participants also reminded the Finnish authorities of their great responsibility to maintain this important 'population bridge' between the Baltic and the Scandinavian otter populations and recommended evaluating the development of the Finnish otter population, and the effects of otter killings, continuously.

On the periphery of the congress, those members of the 'Reintroduction Advisory Committee' (RAC) who joined the ECM3 had a meeting to discuss the working methods of this group. The RAC was established as part of the European section of the OSG at the last International Otter Colloquium in Trebon as the group is deeply concerned about the increasing number of otter release projects in Europe that do not follow IUCN reintroduction guidelines. I asked Addy de Jongh (contact: info@aqualutra.nl) to act as the secretary of this committee. He will prepare a catalogue of the minimum preconditions that should be met by otter release projects by September. This catalogue will form the basis for the evaluation work done by the RAC. All European OSG members are asked to contact Addy as soon as they become aware of a planned release project and to inform their governmental authorities of the existence of the RAC.

Looking back on the busy days of Jyväskylä, my personal opinion is that we did a good job and that the meeting represents one of the most effective we ever had. Unfortunately, the number of participating otter people and countries represented was lower than expected. Nevertheless, I wish to thank those colleagues who joined the meeting and for their valuable contributions to the discussions.

Beside this great international event in Finland, two other meetings of otter people took place this spring. On the 25th February, participants from Finland, Great Britain, The Netherlands, Belgium, France, Italy, Germany and the USA joined a three day seminar on 'keeping otters in captivity', held at the OTTER-ZENTRUM in Germany. Further, in March, more than 20 otter and nature conservation specialists from Norway, Sweden, Denmark, Germany, The Netherlands, Belgium and Great Britain met at the Dutch Otterpark for a seminar on 'otter promoting measures'. A report of this meeting, which was part of the nature conservation activities of the North Sea Commission of the European Union, is available at the Otterpark Aqualutra (contact: info@aqualutra.nl).

Over the past months, I have been observing the correspondence done via the mail-list network of the OSG very carefully. One of the conclusions was that there are many research projects underway of which many people in the 'otter scene' are not aware. Therefore, I decided that it could be useful to develop a platform where all research projects can be posted. This could become a useful source of information for 'who is doing what', an important link for co-operation of people involved in similar topics, and a helpful tool to avoid repeating work. Another positive aspect of such a database can be the distribution of information of 'who his looking for which kind of samples', giving people who collect dead otters (from the wild or from captivity) an idea of what is needed when they do post-mortem examinations. There could be two options of how to realise this idea: (1) a listing in each issue of the OSG Bulletin, or (2) ask Bob Fetterman to include such a platform on the 'otternet' homepage to enable all people to update and to study this database continuously. Please let me know what your opinion is, if you would be prepared to contribute to this database, and which option you would prefer.

Finally, I want to remind all authors of sub-chapters of the Otter Action Plan to send their manuscripts as soon as possible. Most country reports for Europe have already arrived and the sub-chapters on biology and conservation for *Lutra lutra* are almost finished. However, for most other continents and otter species, there is a great lack of manuscripts.

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RESUMEN

Desde el escritorio del presidente

A solicitud de la SSC de la IUCN, el OSG ha actualizado la clasificación de las nutrias para la Lista roja de especies amenazadas. Se sugieren los siguientes cambios: (categoría antigua/categoría propuesta). *Amblonyx cinereus* (Bajo riesgo/Bajo riesgo), *Aonyx capensis* (No listada/Bajo riesgo), *Aonyx congica* (Bajo riesgo/No evaluada), *Enhydra lutris* (No listada/En peligro), *Lontra canadensis* (No listada/Bajo riesgo), *Lontra felina* (En peligro/En peligro), *Lontra longicaudis* (No evaluada/Información insuficiente), *Lontra provocax* (Vulnerable/Críticamente en peligro), *Lutra lutra* (No evaluada/Vulnerable), *Lutra maculicollis* (No listada/Vulnerable), *Lutra perspicillata* (Vulnerable/Vulnerable), *Lutra sumatrana* (Vulnerable/Información insuficiente), *Pteronura brasiliensis* (Vulnerable/En peligro). A nivel de noticias de los coordinadores continentales, Gonzalo Medina reportó un proyecto de monitoreo y uno de radiotelemetría para *Lontra provocax* en Chile, y que está preparando un encuentro para especialistas latinoamericanos en nutrias para octubre de este año en Chile, y el VIII° Coloquio Internacional sobre Nutrias para la tercer semana de Enero de 2001 en Valdivia, Chile. En Europa se llevó a cabo, como parte del 3er Congreso Europeo de Mastozoología, el encuentro de la sección europea del OSG, con la presencia de más de 20 especialistas en nutrias provenientes de 12 países. Allí se discutió sobre cómo estandarizar la “metodología estándar de relevamientos” para nutrias, los conflictos entre nutrias y pescadores, aspectos internos del OSG, progresos en el Plan de Acción para *Lutra lutra*, etc. Otras 2 reuniones de especialistas se llevaron a cabo esta primavera: un seminario sobre nutrias en cautiverio y uno sobre medidas de promoción de nutrias. He decidido que sería útil desarrollar una plataforma donde todos los proyectos de investigación sobre nutrias sean listados. Hay 2 opciones posibles para ello: 1- una lista en cada número del boletín del OSG, o 2- pedirle a Bob Fetterman que incluya tal plataforma en la página web de “otternet” para permitir que todos puedan actualizar y consultar esa base de datos continuamente. Háganme saber sus opiniones. Finalmente, quiero recordarles a todos los autores de capítulos del Plan de Acción que envíen sus manuscritos lo antes posible.

VIEWPOINT: A REPLY

RE-INTRODUCTION OF OTTERS: A REPLY

KRANZ Andreas

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Claus asked OSG members for contributions to this discussion. Both, Claus Reuther (1998) and Addy de Jongh (1998) have listed good arguments and sometimes not so convincing ones. However, some general statements have to be underlined or contradicted.

In my opinion the headline question: "re-introduction of otters - support or risk for otter conservation?" can and has to be answered straight forward with yes, it is a support. For, could anybody seriously imagine that a re-introduction poses a risk to otter conservation?

Most remarkable is the statement of Claus that the Eurasian otter *Lutra lutra* is not at risk of getting extinct. It is remarkable because it comes from the chairman of the IUCN Otter Specialist Group and it highlights the dilemma of *Lutra lutra* conservationists: the Eurasian otter is not a high priority species any more. In other words, re-introductions of the Eurasian otter are unnecessary and the same is true for the unrealistic "Conception for an Otter Habitat Network Europe" (REUTHER, 1998; in press) (which in addition suffers from severe and embarrassing mistakes concerning the knowledge of otter distribution; e.g. in Austria otters do not exist south and south-west of Vienna since at least 60 years (and to my knowledge this was never erroneously published), but REUTHER (1998) classified that area as a core area of the present otter distribution). There is no need to have otters everywhere and there is no need that all otter populations are somehow linked. Most existing European otter populations are large enough to survive without having contact. Couldn't it even be advantageously to be isolated if one considers diseases and what about increasing biodiversity in terms of sub populations by promoting local races? On the one hand otter conservationists do not release orphan hand raised Irish otters in Great Britain (R. GREEN, pers. comm.) and on the other hand conservationists want to overcome all population barriers - why and which strategy or logic is behind that?

Addy de Jongh (1998) suggests that the increase of otter numbers throughout Europe is due to "a general improvement in wetland quality, the easing of barriers between the populations, re-introduction or re-stocking efforts and/or measures that have been taken to prevent otters from drowning in fyke nets". What does it mean, wetland quality? If it implies pollutants, one may agree, because water quality is improving throughout most of Europe. However, habitat destruction has continued permanently. Habitat improvement measurements are of a ridiculous small scale and do not have an impact on otter populations. There are perhaps three reasons which have favoured otters in Europe and what may account as true otter conservation activity: 1. the protection of the species in almost all countries; 2. the reduction of pollutants on a large scale due to EU legislation (heavy metals, PCBs etc.) and 3. the reinforcement of pisciculture (e.g. in Hungary the fish pond area almost tripled since 1950 and provides new otter habitat). Other activities, research included, which invoke to be done for the sake of the otter had no effect on otters in terms of changing population trends, perhaps they had an effect on people and their understanding of nature.

Both, Claus and Addy invoked the otter to be an indicator and guarantor of healthy and large scale wetlands. This is not true. Otters need little more but fish! If you are looking for a wetland key species ask an ichthyologist! Fish and their survival without management is the best guarantee for wetlands in function, not the otter which may feed on ornamental fish from any garden pond. Such artificial ornamental ponds may even support entire otter populations.

Summing up, I am afraid both Claus and Addy have spent so much time and passion in otter work that they do not see the forest for the trees. They have wrong priorities. This is in particular true for Claus, the OSG chairman. Use your charisma and fund raising abilities for other otter species, e.g. in South America, who need most urgently help!

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RESUMEN : Reintroducción de nutrias: una respuesta

Claus solicitó a los miembros del OSG contribuciones para la discusión. Tanto Claus como Addy de Jongh han listado buenos argumentos y algunos no tan convincentes. Sin embargo, algunas afirmaciones han de ser remarcadas o refutadas. En mi opinión la pregunta “reintroducción de nutrias - apoyo o riesgo para la conservación?” sólo puede ser respondida con un rotundo sí, es un apoyo. Puede alguien pensar seriamente que una reintroducción implica riesgos para la conservación de las nutrias? Más destacable es la afirmación de Claus de que la nutria eurasiática *Lutra lutra* no corre riesgo de extinción. Es destacable porque proviene del presidente del Grupo de Especialistas en Nutrias (OSG) de la IUCN y señala el dilema de los conservacionistas de esa especie: La nutria eurasiática ya no es más una especie altamente prioritaria. En otras palabras, las reintroducciones de nutria eurasiática son innecesarias, y lo mismo es cierto para la irrealista “Concepción para una Red Europea de Hábitats para Nutrias” (que además sufre de severos y embarazosos errores respecto al conocimiento de la distribución de las nutrias; ej. en Austria no existen nutrias al Sur y Sudoeste de Viena desde hace al menos 60 años (y hasta donde yo se esto nunca fue erróneamente publicado), pero Reuther clasifica esta área como un área núcleo de la distribución actual de nutrias). No es necesario tener nutrias por todos lados ni que todas las poblaciones estén unidas de alguna manera. Las poblaciones europeas de nutrias son lo suficientemente grandes para sobrevivir sin tener contacto. No será incluso ventajoso que estén aisladas si uno toma en cuenta las enfermedades y el incremento de biodiversidad en términos de subpoblaciones al promover razas locales? Por otro lado conservacionistas de nutrias no liberan nutrias Irlandesas huérfanas en Gran Bretaña, pero quieren sobrepasar todas las barreras poblacionales. Por qué y qué estrategia o lógica está detrás de esto? Addy de Jongh sugiere que el incremento en el número de nutrias en toda Europa se debe “a una mejoramiento general en la calidad de los humedales, la disminución de barreras entre poblaciones, esfuerzos de reintroducción o fortalecimiento, y/o medidas para evitar que las nutria se ahoguen en redes. Qué significa calidad de los humedales? Si significa poluentes, uno puede estar de acuerdo, porque la calidad del agua está mejorando en la mayor parte de Europa. Sin embargo, la destrucción de hábitats ha continuado permanentemente. Las medidas de mejoramiento de hábitat son de escala ridículamente pequeña y no tienen impactos en las poblaciones de nutrias. Hay quizás 3 razones que han favorecido a las nutrias en Europa, y pueden contar como verdaderas actividades de conservación: 1- la protección de la especie en la mayoría de los países; 2- la reducción de poluentes a gran escala debido a la legislación de la UE (metales pesados, PCBs, etc.) y 3- el refuerzo de la piscicultura (ej. en Hungría el área de estanques de pesca se ha casi triplicado desde 1950 y provee nuevos hábitats para nutrias). Otras actividades, incluida la investigación, que se invocan como hechas por el bien de las nutrias, no tienen efectos en las nutrias en términos de las cambiantes tendencias poblacionales, quizás tienen efecto en la gente y su entendimiento de la naturaleza. Tanto Claus como Addy invocan a las nutrias como indicadores y garantes de humedales saludables y a gran escala. Esto no es cierto. Las nutrias necesitan poco más que peces! Si está buscando una especie clave para un humedal, pregúntele a un ictiólogo! Los peces y su supervivencia sin manejo son la mejor garantía de humedales funcionando, no las nutrias, que pueden alimentarse de peces ornamentales de cualquier estanque. Tales estanques artificiales incluso pueden soportar poblaciones enteras de nutrias. Resumiendo, me temo que tanto Claus como Addy han pasado tiempo y puesto tanta pasión en el trabajo con nutrias que los árboles no les dejan ver el bosque. Tienen prioridades equivocadas. Esto es particularmente cierto para Claus, el presidente del OSG. Utilice su carisma y habilidades para recolectar fondos para otras especies de nutrias, ej. en Sudamérica, que necesitan ayuda más urgentemente!.

ARTICLE

DEVELOPMENT OF WEIGHT AND LENGTH OF EURASIAN OTTER (*LUTRA LUTRA*) CUBS

REUTHER Claus

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Abstract: In order to estimate age of otter cubs found dead, injured or orphaned, size parameters are needed. Measurements of weight and length over a period of 107 days are given for 32 cubs born since 1979 in the enclosures of Aktion Fischotterschutz. It is hoped that publication of these data will assist age determination of *L. lutra* cubs up to the age of 3.5 and encourage other institutions breeding otters to take similar measurements to increase the database for statistical analysis.

INTRODUCTION

Eurasian otters (*Lutra lutra* L.) in captivity have non-seasonal breeding behaviour (REUTHER, 1991). This seem to be true also for wild otters in most parts of the species' range in Europe (REUTHER, 1993).

Parameters are needed for age determination if otter cubs are found dead, injured or orphaned. HEGGBERGET (1996) published criteria for assigning approximate age in months of cubs up to 6 months of age based on opening of eyes and dental development. Measurements of weight and length over a period of 107 days are available for 32 cubs born since 1979 in the enclosures of Aktion Fischotterschutz. It is hoped that publication of these data will assist age determination of *L. lutra* cubs up to the age of 3.5 and encourage other institutions breeding otters to take similar measurements to increase the database for statistical analysis.

MATERIAL AND METHODS

Aktion Fischotterschutz has kept otters in captivity since 1979 (Otter Research Enclosure Oderhaus 1979 - 1988, Otter-Zentrum Hankensbüttel since 1988). In the period 1980 - 1998 14 litters were born, totalling 31 cubs (Table 1). Measurements of weight and length could be taken from 30 cubs.

Table 1: Litters of *Lutra lutra* bred in the enclosures of Aktion Fischotterschutz

Litter	Date of birth	Father	Mother	Size and sex ratio	Survived
01	26/09/80	Adam	Eva	1.0	0.0
02	14/05/85	Adam	Otti	0.1	0.0
03	27/11/85	Adam	Springe	0.1	0.0
04	14/07/86	Adam	Lady	3.1	1.0
05	26/06/87	Adam	Lady	3.0	3.0
06	21/08/88	Adam	Lady	0.3	0.3
07	11/07/89	Tarka	Ulla	3.0	3.0
08	19/04/90	Lord	Lady	1.0	1.0
09	28/08/91	Dotz	Clyde	0.1	0.1
10	22/09/92	Lord	Ulla	1.1	1.1
11	08/11/92	Lord	Clyde	2.1	2.1
12	20/09/96	Lord	Cleo	1.2	0.0
13	02/05/97	Lord	Clyde	1.1	1.1
14	27/02/98	Gerry	Cleo	1.2	1.2

Example: 1.1.2 = one male, one female, two cubs of unknown sex

Unfortunately it was not possible to take all measurements (weight, body length, total length) from all cubs at all times (Figures 1, 2 and 3). Minimising disturbance to females and cubs was a guiding principle and, therefore, data recording was limited by the

behaviour of the animals. Female behaviour varied individually, and from litter to litter. The facilities of Aktion Fischotterschutz do have the advantage that all litters were born in breeding-boxes where the animals can be observed by video-cameras or by microphones.

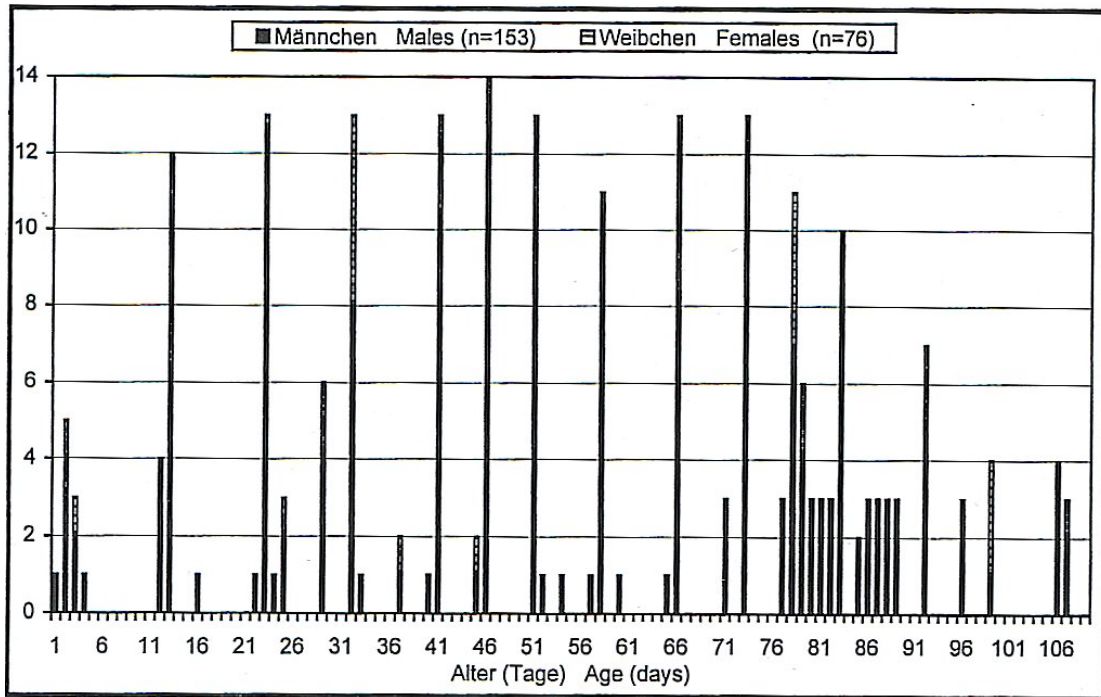


Figure 1. Number and range of measurements of weight (n=229)

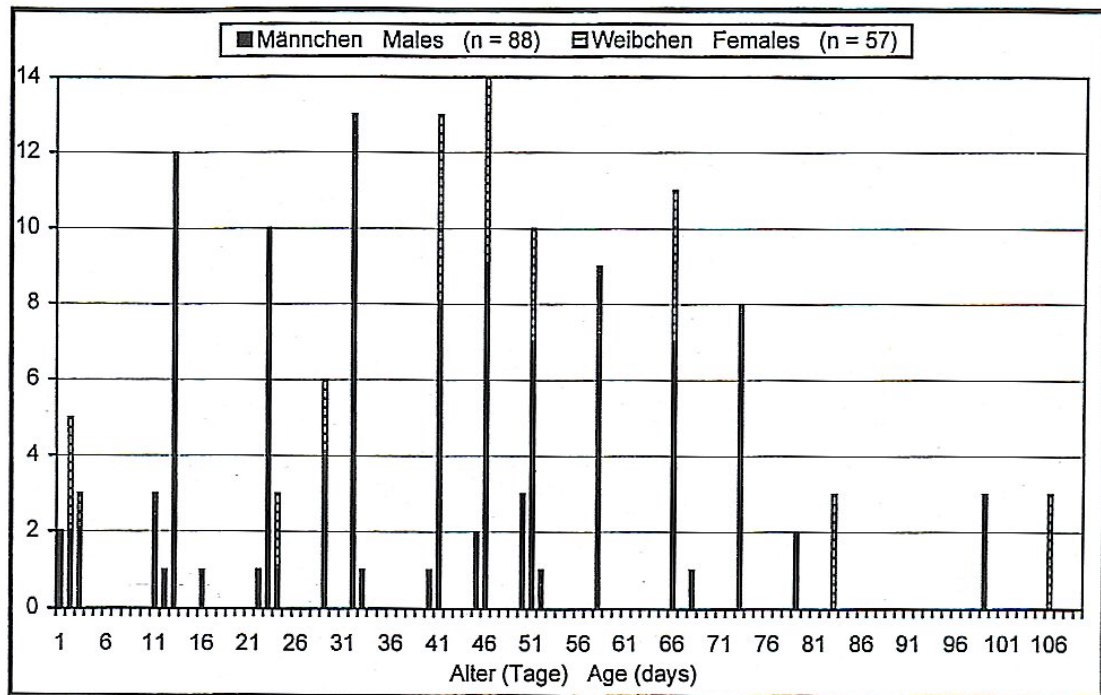


Figure 2. Number and range of measurements of total length (n=145)

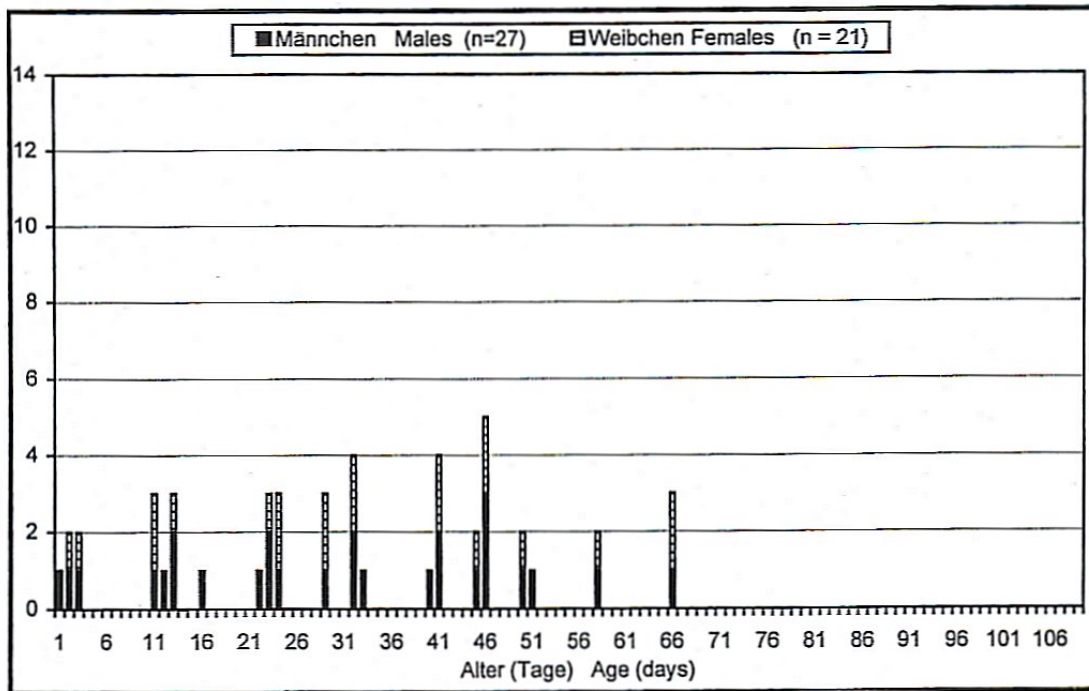


Figure 3 . Number and range of measurements of body length (n=48)

Measurements were usually taken when the female left the breeding box for her evening feed. The sliding door of the box was closed as noiselessly as possible, allowing the cubs to be handled for some time, unnoticed by the mother. The time taken for the mother to try to return to the cubs and find the door shut varied from female to female, but, in general, increased with the age of the cubs. With advancing age the cubs' reactions became the factor limiting the time available for taking measurements. In their second month the chance of them screaming or whistling increased and once they reached 80 days most of them started biting.

Increasing activity and aggression of the cubs caused problems, especially in measuring length. In many cases it was not possible to hold the animals straight - even if two people worked together. Therefore fewer, less reliable, lengths than weights were recorded. In most cases the total length from nose to tip of tail was measured. In some cases body length from nose to base of tail only, or additionally, was measured. This was done using a tape graduated in centimetres and millimetres, placed dorsally on the animal's body. Readings were taken to the nearest half centimetre.

Two types of balances were used to weight the cubs. Up to a weight of 1000 grams in most cases it was possible to use a digital balance showing the weight in grams. Once the cubs were older than 40 days and exceeded this weight they were weighed in a bag hung on a spring balance graduated in units of 10 grams; weight being given to the nearest 10 grams.

RESULTS

Weight

Figure 4 shows the mean values for the weight of 30 cubs, based on 229 measurements (153 male, 76 female) over the first 107 days of life. These data indicate a doubling of weight in each of the first two ten days periods and thereafter an average increase of 300 grams per ten days. It is obvious from the graph that the spread of the mean values is increasing by the age of approximately two months.

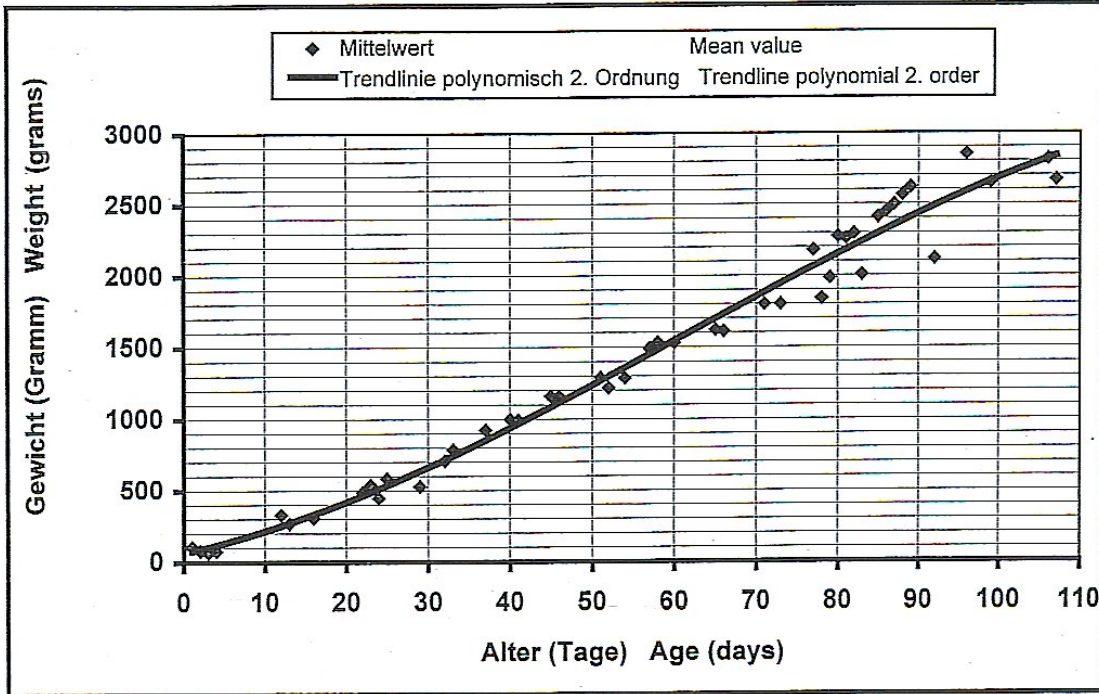


Figure 4 . Mean values for increase in weight of all cubs measured (n=30)

These data are closely related to the experiences of GREEN (pers. comm.) who raised two cubs from the wild, which doubled their weight from 200 to 400 grams in ten days and from 400 to 800 grams in twelve days. In the next ten days they added 275 grams and the next 300 grams took seven days. A weight of 3.000 grams was reached in 99 days.

As is shown in Figure 5 the increase in weight is very similar for the 17 males and 13 females measured. The trend-line seems to indicate a slightly greater weight rise in males around the 40th and the 105th day of life.

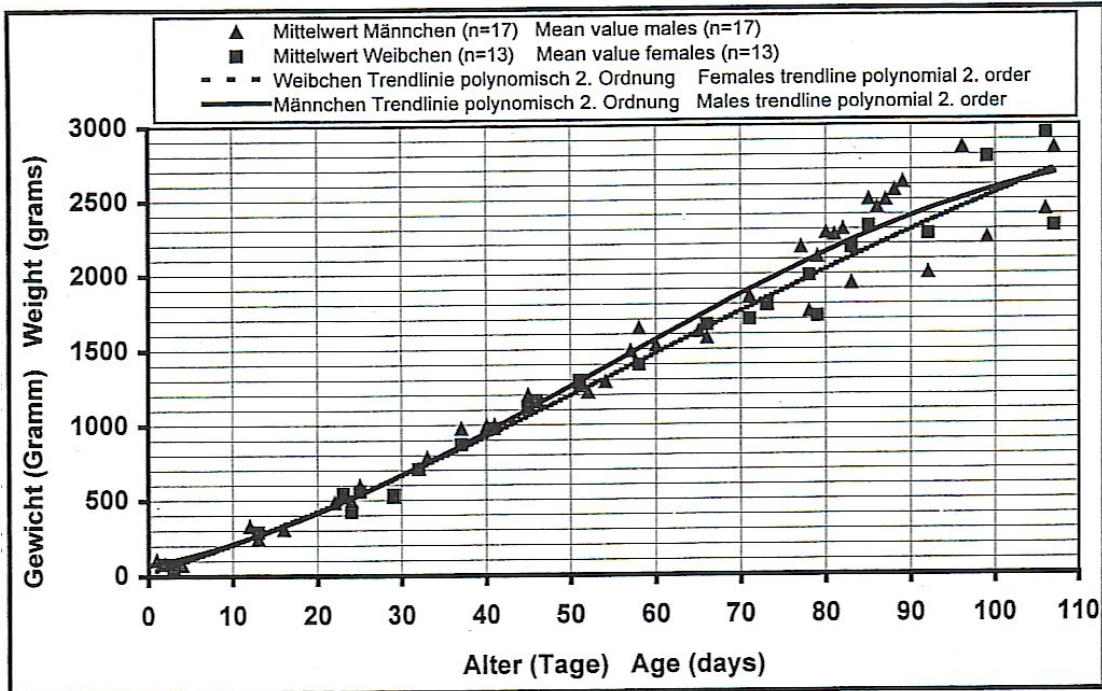


Figure 5. Mean values for sex specific increase in weight

Total length

145 measurements of total length (88 for male, 57 for female) were taken from 26 cubs over their first 107 days of life. Figure 6 shows that the curve of length increase is different from that of weight. During the first month the average increase in total length is approximately 7 cm per 10 day period, in the second month it is 6 cm per 10 days, in the third month it is reduced to 4 cm per 10 days and an increase of 2 cm per 10 days is indicated for the fourth month.

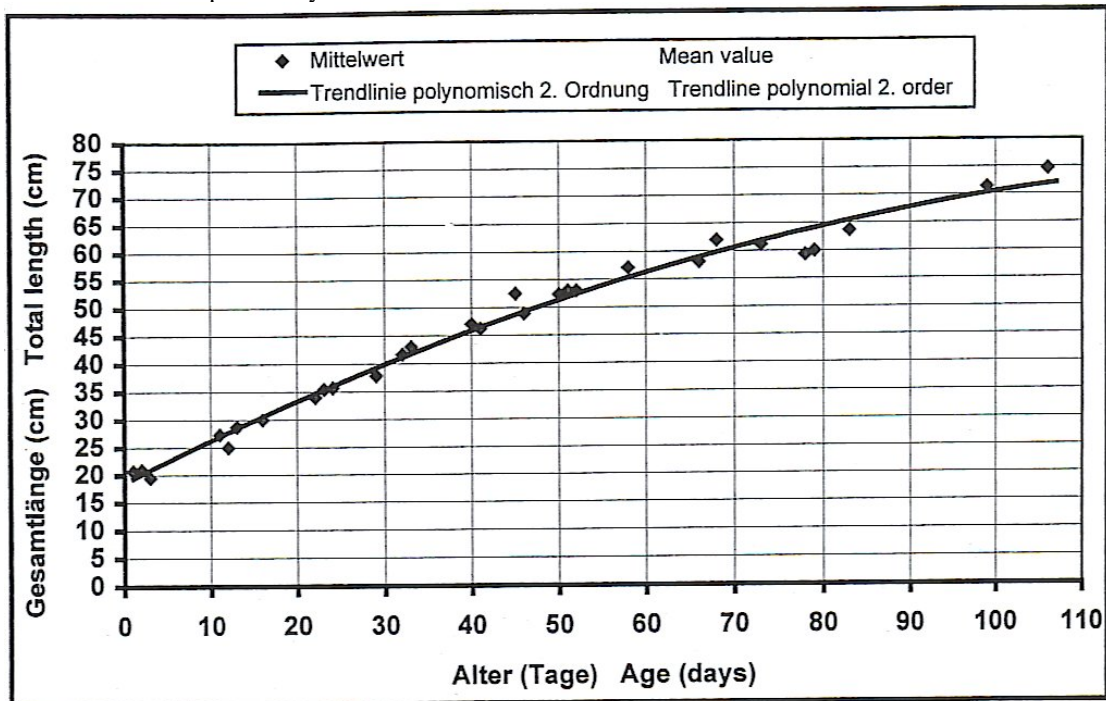


Figure 6. Mean values for increase in total length of all cubs measured (n=26)

There seems to be no significant difference between the increase of total length in the 15 males and 11 females on which Figure 7 is based.

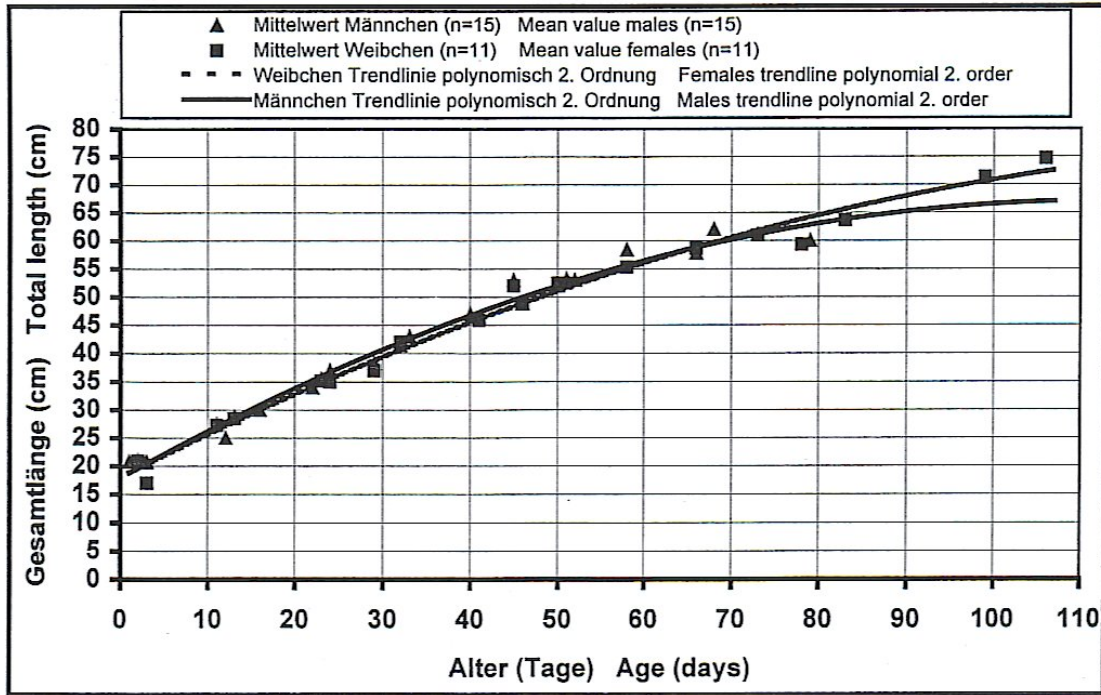


Figure 7. Mean values for sex specific increase in total length

Body length

Only 48 measurements (27 male, 21 female) of body length are available from 14 cubs from the first 66 days of life (Figure 8). This curve shows a more constant 3-5 cm increase in length per 10 days.

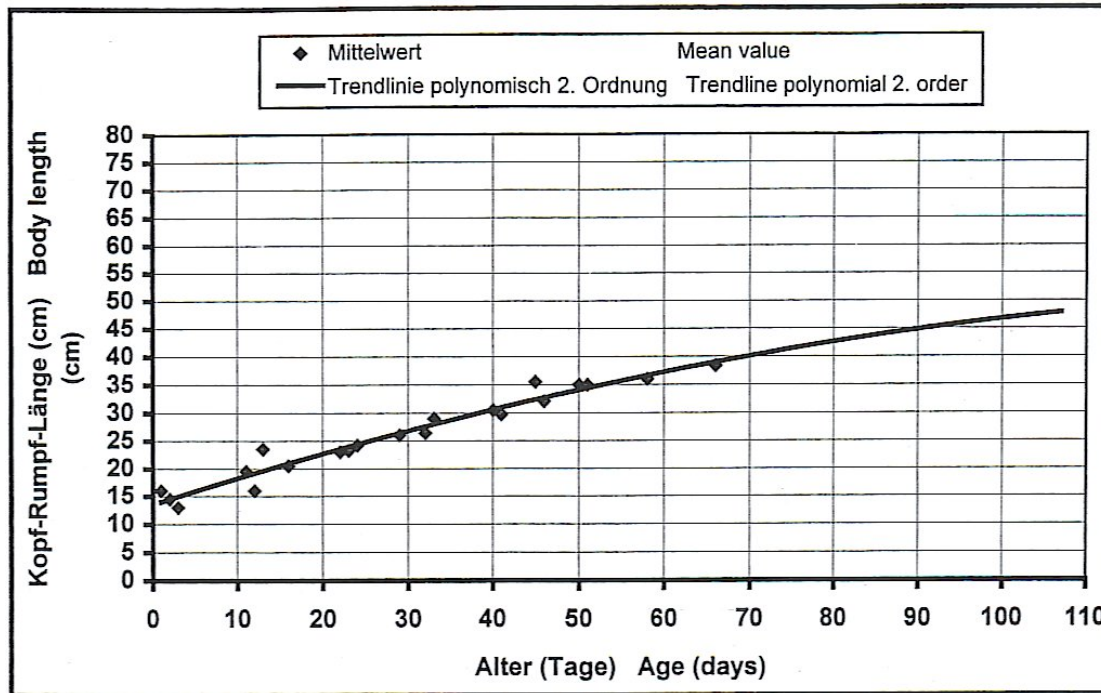


Figure 8. Mean values for increase in body length of all cubs measured (n=14)

As is shown in Figure 9 there is little difference between the 8 males and 6 females.

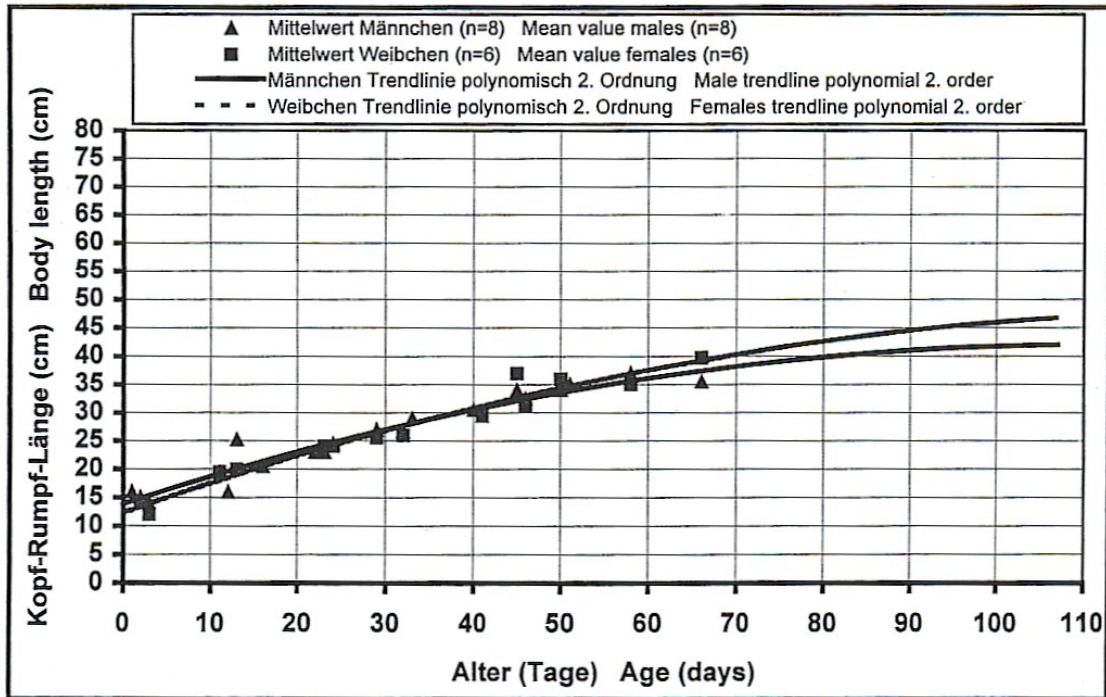


Figure 9. Mean values for sex specific increase in body length

DISCUSSION

Because of the small and heterogeneous database extensive statistic analysis was not possible. As stated the intention of this paper is to show trends and to encourage other institutions to collect comparable data to widen the database.

As was obvious from Figure 1 the 229 records of weight form the basis for the trend for weight increase during the first 107 days of life, but the ratio of data for males and females is inadequate for analysis of sexual differences. The spread of the data is not optimal for analysis of development over time. Lastly the number of litters is too small for a comparison of differences in weight increase related to the number or sex ratio of cubs in the litter or the influences of different parental combinations on the development.

The data so far available does not indicate a significant difference related to the latter factors. There have been all female litters, which are heavier than all male litters and *vice versa*. The weight of single cubs is not automatically heavier than twin or triplet cubs, but in the 4 mixed sex litters males were heavier than females, individually and on average. However these are preliminary data (Figure 10).

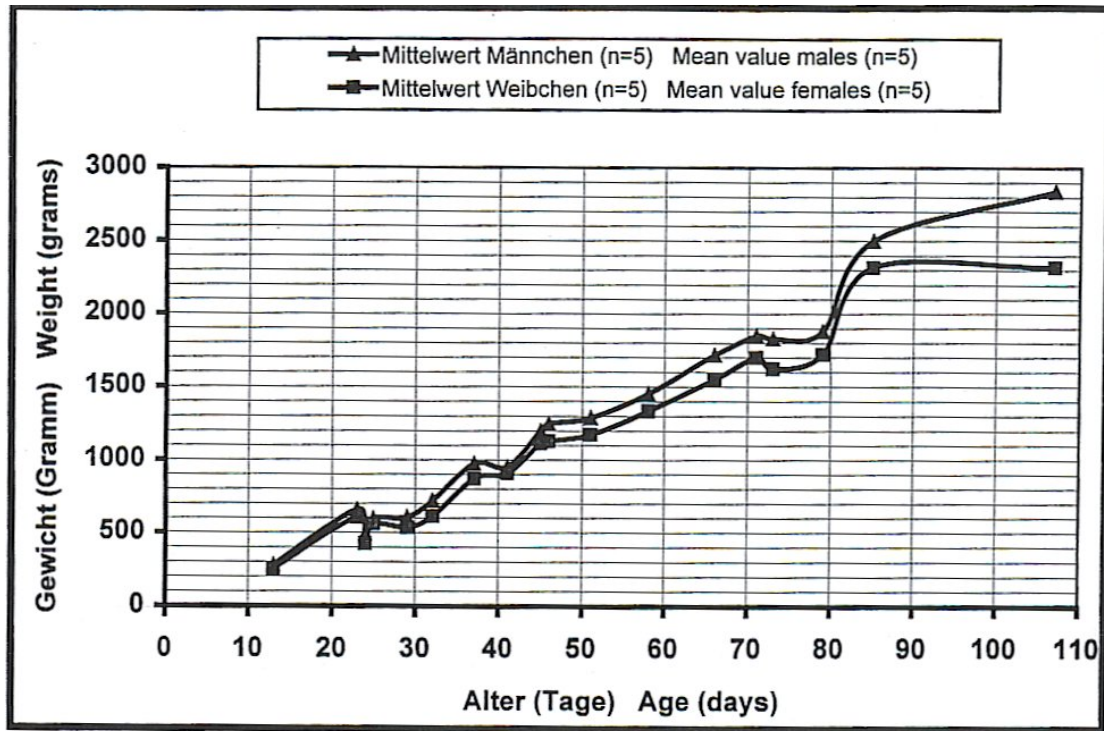


Figure 10. Sex specific increase in weight in mixed sex litters shown as a curve of measuring points with interpolated lines

It is too early for a detailed analysis of the increase in length for two reasons; as described in the methods measurements of length are less reliable than weights and the data is not evenly spread over time, with the few recorded after 79 days being for females only (Figure 2). Figure 3 shows that the data for body length are even fewer and relate only to the first 66 days.

These data are published at this stage because, incomplete as they are, it is better to have some guide to estimating age of otter cubs than to have none. Using the curves given in Figures 4,6 and 8 it should be possible to estimate the age of orphaned wild cubs younger than four months with an accuracy of plus or minus 10 days. For older cubs the age determination criteria given by HEGGBERGET (1996) will be useful.

The question remains as to whether wild cubs show the same trend of weight and length gain as captive born cubs. However this will remain unanswered unless comparable data from wild born cubs with known birth dates can be obtained, which is not likely.

When using these data for an estimation of the age of cubs found in the wild it should be kept in mind that in many cases cubs might have lost weight before being found. This can happen very rapidly. GREEN (pers. comm.) found a decrease of weight in two orphaned cubs from 210 to 190 and 240 to 170 grams respectively during the first day after they were found.

The second reason for publishing these data is to encourage other institutions breeding *L. lutra* to measure their cubs and share the data. Although only 10 % of institutions participating in the Eurasian otter studbook are successfully breeding the species, in 1996 the birth of 47 cubs was registered in the EEP annual report (MELISSEN, 1998). If only a few of the institutions involved were able to measure their cubs without undue disturbance the amount of data available would be much greater. It is not worth risking the lives of animals to obtain data so measurements should only be made if the risk and disturbance is minimal. However, recording data from stillborn cubs or those dying after birth, should be mandatory.

If information is sent to Aktion Fischotterschutz to expand the database additional data required are: - sex, exact date of birth, date of measurements, weight in grams, total and body length in centimetres, information on circumstances which may have had a bearing on physical development (illnesses, hand-rearing, vaccination), size and sex ratio of litter, name and studbook number of parents and age and breeding history of the mother.

ACKNOWLEDGEMENTS - I thank Rosemary Green for constructive comments, revision of the English version and supply of unpublished data.

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Resumen: Desarrollo en peso y longitud de las crías de la nutria eurasiática (*Lutra lutra*)

Se tomaron medidas de longitud y peso de 32 crías de nutria eurasiática. Durante los primeros 20 días las crías duplicaron su peso cada 10 días y a partir de entonces un promedio de 300 g cada 10 días. Estos datos concuerdan con los obtenidos por Green, quien registró el aumento de 200 a 400 g en 10 días y de 400 a 800 g en doce días en dos crías recogidas de la naturaleza. En los 10 días siguientes estas aumentaron otros 275 g, y otros 300 en los 7 días subsiguientes, alcanzando los 3000 g en 99 días. El desarrollo en peso es aproximadamente el mismo en los 2 sexos, con un incremento un poco mayor en los machos durante el 40° y 105° día de vida. Todos los animales (n=30) fueron pesados dentro de los primeros 107 días de vida. Durante este período también se tomaron medidas de longitud total de 26 crías. La curva de crecimiento en longitud es diferente a la de peso. Durante el primer mes los animales crecen aproximadamente 7 cm cada 10 días, 6 cm cada 10 días durante el segundo, 4 cm cada 10 días en el tercero, y 2 cm cada 10 días durante el cuarto. También se midió la longitud del cuerpo de 14 crías durante sus primeros 66 días de vida. La curva muestra un crecimiento más constante de 3 a 5 cm cada 10 días. El objetivo de este trabajo fue mostrar tendencias primarias a pesar de no contarse con datos que permitieran análisis estadísticos extensivos. No se encontraron tendencias evidentes en el desarrollo del peso en relación con el número de crías por camada, relación de sexos o la combinación de padres. El peso de animales nacidos en camadas de un solo individuo no parece ser automáticamente mayor que el de individuos de camadas más numerosas. En promedio los machos fueron más pesados que las hembras. Los resultados preliminares de este estudio podrían permitir estimar la edad de crías silvestres huérfanas con menos de 4 meses de edad con una exactitud de aproximadamente 10 días. En estos casos debe tenerse en cuenta que crías encontradas en la naturaleza pueden haber perdido peso antes de ser halladas. Green registró un decrecimiento en el peso de 210 a 190 g y de 240 a 170 g en dos crías huérfanas durante el día posterior a haber sido encontradas.

REPORT

OTTERS AND FISHERIES - WORKSHOP REPORT

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This workshop was held as part of the
3rd European Congress of Mammalogy in Jyväskylä, Finland on 31st May 1999
Chairpersons: Marcela KUCEROVÁ and Claus REUTHER

Abstract: Through history, human and otters have been in competition for resources such as fish. The result of the recovery of otter populations, especially in central Europe, is likely to lead to an escalation of this conflict, and solutions are needed urgently. We recommend not treating fishermen and fish farmers as enemies but as partners, to learn about their problems and how they perceive them, to take those problems seriously as they are our problems too, to remember that it takes time to build confidence between people concerned, to use the knowledge gained to develop clear, useful project objectives and avoid duplication of effort, and to make the results available as soon as possible. Important aspects to consider are sociological (we should carry out studies to find out opinion and perceptions of all parties involved), economic (marketing studies should be carried out not only on the ecotourism potential of otters, but whether fish advertised as being produced using otter-friendly methods from places that protect otters would be an attractive product to the consumer), evaluation (independent estimation of otter damage is needed, along with clear guidelines on what 'damage' consists of, and compensation criteria), preventative measures (electric fences, repellents etc to deter otters from using particular locations) and education (the otters' attractive appearance and appeal makes it an ideal species for work with the public, school children and tourists, but a different kind of public relations work is needed for interest groups with years of negative attitudes to otters have to be overcome). The main conclusion of the workshop was that greater cooperation and exchange of information between people who work with otters is needed. Greater effort must be put into evaluating possible economic losses for fish farmers and fishermen, searching for alternative solutions that can change their attitudes towards otters.

INTRODUCTION

Throughout history, humans and otters have come into conflict when their usage of resources, e.g. fish, has overlapped. In the past, the most common method of reducing this conflict was to lower the number of otters. However, over this century, persecution and environmental degradation have resulted in the otter becoming a highly endangered species in Europe. However, in some areas, otter populations are now recovering and conflicts between the otter and fish farming are arising again. This is particularly so around Central Europe, where a centuries old tradition of semi-intensive carp farming is now facing new problems, e.g. a changing economic climate.

A short introduction was followed by a speech from Claus Reuther that brought up several viewpoints on the present situation in otter conservation and fish farming. He underlined that solutions for this immanent conflict have to be developed now - before an emotional and political based controversy arises on a wider scale. The argument that at present the conflict is restricted to some local focal points should not be seen as an argument to ignore the problem but on the contrary as a chance to find solutions before the conflict will escalate. He further recommended:

- Do not handle fishermen as enemies, make them partners.
- Co-operate with fishermen, try to learn how they think, how they work, and what problems they have.
- Take the problems of the fishermen seriously (their problems are your problems!).
- Be aware that it needs time to develop a base of confidence, don't give up too early, and be so honest as to admit that you also meet fishermen with distrust.
- Use the knowledge you earn from these contacts to define and to formulate clear targets for research and test projects.
- Don't formulate these targets on an academic base only; incorporate the practical experience of fishermen and the scientific knowledge of fishery research institutions.
- Make and keep contact with other otter people dealing with the conflict.

- Contribute in preventing 'double studies', co-operate with colleagues working on the same or a similar problem in a way that the output is increased and the results complement one another.
- Make results available as soon as possible and publish ideas for further questions that need answers.

Country reports were presented by Gilbert Ludwig (Finland), Rosemary Green (Great Britain (mainly Scotland)), Marcela Kucerová (Czech Republic), and Marcela Kucerová (on behalf of Michaela Bodner - Austria). In addition, at very short notice, summary reports were presented by: Aksel Bo Madsen (Denmark), Jerzy Romanowski (Poland), Marjena H. Adamik (Slovenia), Claus Reuther (Germany), and Linus Balciauskas (Lithuania).

Following the presentation of reports, 5 common discussion headings were identified, i.e. sociology (attitudes of fish producers), economy (development of marketing concepts for compensation of damages by a higher price level or by introducing other sources of income, prevention (development of technical or biological measures of defence or distraction), evaluation (how to verify damages in fish production facilities, especially related to the otter) and education.

SOCIOLOGY

When addressing a problem it is always important to find the opinion of the other side involved. Sociological studies (such as questionnaires) are one of the possible ways of getting the data required. Such information should be used for the preparation of not only protection measures but also future projects in otter research and conservation. Some countries (e.g. Czech Rep., Finland) have already undertaken such studies and differing results were found, highlighting the importance of assessing local opinion.

Several points were brought up:

- Opinions depend on the social status of the farmer (whether state owned, company, or private) = level of personal involvement.
- Answering can depend on the perceived level of the problem (no problem = no answer)
- When the problem is perceived as large, answers are frequently based upon emotion rather than analysis.
- Badly styled questionnaires can 'create' a problem - increasing the likelihood of the otter receiving the blame for damages - providing a 'scapegoat'.
- Surveys should be repeated at regular intervals or following protective measures.
- The questions should not be only about the otter, ask about other things also, e.g. poaching.
- It is better to use professionals – they are unbiased and can 'cover' the real aim of the study.
- It is recommended questions are asked through a personal interview, rather than by post or phone.

A careful survey will show the fisherman that you recognise his problems and that you are willing to listen and learn. The information received will help highlight problem areas and direct limited funds to those areas where work is needed most. Sometimes the sociological survey can give rise to new ideas and partnerships.

Projects suggested:

When funds are available, each country facing a problem regarding otter predation and fish farming should undertake a survey connected with this issue. It may be possible to get funds for surveys by highlighting cross border co-operation or by involving several countries.

ECONOMY

Some countries (e.g. Germany, Netherlands) have begun to use the otter as a marketing tool, i.e. fish produced in an area with a protected species - emphasise the positive public reaction to otter. With the breakdown of socialist style economies in Central and Eastern European countries, many traditional markets for fish have broken down due to economic pressures. Further, traditional farming techniques are becoming more intensive because of competition and the rush for profits (no State subsidies). Alternatively, new markets are opening as less red meat is being eaten and, in some counties, the public shows a preference for more extensive farming techniques.

Another possibility for a form of compensation for fishermen could be tourism, e.g. 'ecotourism' - taking holidays in an area famous for its otters (and other wetland species), or angling (this may bring in more money to the smaller businessman than selling the fish direct).

Recommendations:

- Undertake market studies in each country or apply studies undertaken in similar conditions – each country has different mechanisms/attitudes – there is no catchall method.
- There is an increase in recognition of 'the value of nature and natural systems' – use it; changing markets and tourism all offer new possibilities.
- Funding and experience - possibilities exist within the European Community for economic and marketing aid, funds for sustainable development and traditional techniques, professional assistance, etc.

- Test project proposed for Central Europe - new possibilities for carp marketing (Aqualutra Otterpark Leeuwarden, Netherlands and Czech Otter Foundation Fund - joint project in discussion).

EVALUATION

In this discussion, it was stressed that an independent assessment of any damage claimed is required and, when the level of damage is estimated, other factors, such as heron, mink, fish eagle, cormorant, mismanagement, poaching and 'natural' losses, should also be considered.

Three main fisheries groups were recognised, concentrated mainly in Scandinavia, Scotland, and Central Europe:

- Sea farming (trout/salmon), mainly in lochs or fjords.
- Freshwater farming (carp/trout/other) – either in farms (intensive) or ponds or lakes (semi/intensive or extensive).
- Rivers (stocking) - mainly for sport angling (is this "damage"?).

The main problem remains how to assess 'damage' and whether and how to compensate. The actual loss to fish stocks caused by otter can be split into primary loss (actual death, consumption) and secondary loss (loss of condition, injuries, stress - sometimes leading to death, particularly following winter). The lack of information on the possible effects of disturbance of fish during winter makes such assessment very difficult. Standard and objective methods for assessing losses have yet to be provided, the only extant method being the Austrian model (BODNER, 1995) which has not proved totally successful. A new method, which was presented at the VII. IUCN Otter Colloquium in Trebon 1998 (KUCEROVÁ, in press), is in preparation in the Czech Republic. A further problem connected with this issue is poor knowledge of 'other factors' involved in fish losses, e.g. the role of pH, acidity, temperature, phytoplankton, oxygen, etc.

Projects in preparation or suggested:

- The impact of otters on fish mortality in fish ponds - a joint project with WWF Austria and the Czech Otter Foundation Fund, Czech Republic - in discussion.
- The impact of otters on trout rivers with and without angling activities - Czech Otter Foundation Fund - in preparation.

PREVENTIVE MEASURES

Methods of preventing otter access to fish ponds might be used at those sites with the highest level of complaints.

- Electric fencing is already standard in Scotland, however, a number of problems have arisen with their use common to all areas. For example, there are health and safety problems, planning consent is needed, it is expensive, maintenance is high, they can be ineffective in bad winters, and they can reduce the quality of the landscape for wildlife (otters), particularly in winter.
- Normal fencing (e.g. 1m high chain link) suffers from most of the above points plus they are unattractive and cannot be used in protected areas, where ponds are large or where there are many ponds.
- Other possible methods include diversion ponds stocked with uneconomic species (this measure is presently being tested in a field study in Austria (BODNER – pers. comm.).
- Bird or seal scarers (noisy).
- High frequency noise (German Aktion Fischotterschutz will try to continue a study on hearing capacity of otters which was started some years ago, but which did not recognise the aspect of scaring otters by sounds, REUTHER - pers. comm.).
- Suggested projects or projects in preparation:
- Those technical measures that have not been tested yet should be tested for their effectiveness and suitability (e.g. bird or seal scarers, high frequency noise).

Other possible preventative measures should be investigated (e.g. repellent matters - natural or synthetic – partly undertaken at the Otter Station Pavlov, Czech Republic).

EDUCATION

The otters' attractive appearance and appeal makes it an ideal species for work with the public and school children (as well as tourists). However, public relations work of a different form is required with interest groups such as fishermen and hunters, where years of bias against the otter will have to be overcome. The otter has been successfully used in a number of countries (e.g. Germany, Great Britain, Netherlands), as an 'ambassador' species, to promote healthy wetland systems and sound management practices. These activities should continue and the countries with less experience in this subject could use knowledge of those more experienced.

CONCLUSIONS

The main conclusion stressed is a need for more co-operation and exchange of information between otter people. A focal point for exchange should be created (for this subject in the meantime, please contact Michaela Bodner, Marcela Kucerová or Claus

Reuther) and new information and ideas should be passed more widely, using e-mail, the World Wide Web (WWW), and the IUCN Otter Specialist Group Bulletin. More effort should be put into evaluating possible economic losses to fish stocks, but also to other alternative solutions that could change the attitude of fish-farmers (e.g. new marketing strategies using the otter). Probably the greatest threat to the continuing recovery of the otter in Europe is the possibility of future problems regarding new/old conflicts with fish-farmers. The problem should be faced now.

Acknowledgements - The chairpersons would like to thank all participants of the workshop, with a special acknowledgement to those who presented country reports. Thanks to Kevin Roche for taking notes during the workshop and English correction of the text.

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RESUMEN: Nutrias y pesquerías – reporte de un taller

A través de la historia humanos y nutrias han entrado en conflicto cuando ha habido superposición en la utilización de recursos, ej. pescado. Las soluciones para el inminente conflicto entre nutrias y pescadores, resultado de la recuperación de las poblaciones de nutrias, especialmente en Europa central, deben aplicarse ahora, antes de que la controversia alcance una escala mayor. Se recomienda no tratar a los pescadores como enemigos, sino como socios, cooperar con éstos y aprender cómo piensan, cuales son sus problemas y cómo trabajan, tomar en serio sus problemas (que son los propios), ser consciente que requiere tiempo desarrollar una base de confianza, utilizar el conocimiento generado en los contactos para formular proyectos claros, mantenerse en contacto con otras personas vinculadas al conflicto, evitar la superposición de esfuerzos y hacer disponibles los resultados en cuanto sea posible. Es importante considerar los siguientes aspectos: 1- sociológicos (es importante conocer la opinión de la otra parte, se recomienda llevar a cabo estudios tendientes a recoger esa información), 2- económicos (se puede utilizar a las nutrias como herramientas de marketing, por ej. de peces producidos en áreas que las protegen, o como elementos atractivos para el ecoturismo, se recomienda llevar a cabo estudios de mercado y buscar nuevas alternativas económicas), 3- evaluación (es necesaria la estimación independiente de los daños; es problemático determinar cómo evaluar daños y cómo compensarlos), 4- medidas preventivas (es necesaria la utilización de medidas que eviten el acceso de las nutrias a los estanques de peces en los sitios más problemáticos, pueden utilizarse cercas electrificadas y normales, mecanismos para ahuyentar, repelentes, etc.), 5- educación (el atractivo de las nutrias las hace ideales para el trabajo con el público, turistas y niños de escuela; las relaciones con pescadores, cazadores y otros grupos de interés que conceptualizan de forma negativa a las nutrias deben ser manejadas de otras formas). La principal conclusión del taller es la necesidad de mayor cooperación e intercambio de información entre la gente que trabaja con nutrias. Debe ponerse mayor esfuerzo en la evaluación de las posibles pérdidas económicas para los pescadores y en la búsqueda de soluciones alternativas que puedan cambiar la actitud de estos.

REPORT

OTTER COUNT 1999 IN YLÄ-SAVO, CENTRAL FINLAND

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The first attempt to count otters in Ylä-Savo, Central Finland, was in 1984. We checked the same bridges, rapids and other places in March 1999 in a couple of days (SKARÉN and KUMPULAINEN, 1986).

Spring 1999 was almost ideal for counting because a few days earlier it was snowing and so we could estimate the approximate age of the tracks. We checked 136 sites, which were also visited in March 1997.

In the eastern part of our study area, Nilsjä watercourse, there were 16 positive sites out of 46 (34.8%). In 1997 the proportion of the positive sites here was 25.5%.

The western part, Iisalmi watercourse, is more eutrophic and densely inhabited by people. Also there the otter population seemed to be unchanged since 1997 (now 33.3%, in 1997 30.0% positive sites).

We tried to estimate the proportion of quite fresh (1-2 days) tracks and those made after the last snowing, i.e. within a week. Thus calculating the number of otters in Ylä-Savo was now 28-35 per 8000 square kilometres.

We are well aware of the weakness of such counts, but possibly they are better than nothing. At least sudden changes in populations should be discovered.

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RESUMEN : Conteo de nutrias 1999 en Ylä-Savo, Finlandia central

El primer intento de contar nutrias en Ylä-Savo fue en 1984. Chequeamos los mismo puentes, rápidos y otros lugares en Marzo en un par de días. La primavera de 1999 fue casi ideal para conteos debido a que unos días antes estuvo nevando y entonces podíamos estimar la edad aproximada de los rastros. Chequeamos 136 sitios, que fueron también visitados en Marzo de 1997. En la parte oriental de nuestra área de estudio, el curso de agua Nilsjä, 16 de los 46 sitios fueron positivos (34.8%). En 1997 la proporción de sitios positivos fue 25.5%. En la parte occidental, el curso Isalmi, es más eutrófico y densamente poblado por humanos. Allí también la población de nutrias pareció incambiada desde 1997 (ahora 33.3%, en 1997 30.0% de los sitios eran positivos). Intentamos estimar la proporción de rastros frescos (1 a 2 días) y aquellos dejados tras la última nevada, i.e. dentro de una semana. El número de nutrias así calculado para Ylä-Savo fue ahora de 28 a 35 nutrias por 8000 km². Somos conscientes de la debilidad de estos conteos, pero posiblemente estos sean mejor que nada. Al menos cambios poblacionales súbitos deberían ser detectados.

REPORT

GIANT OTTER PROJECT IN PERU FIELD TRIP AND ACTIVITY REPORT - 1998

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Abstract: The Giant Otter (*Pteronura brasiliensis*) is the largest of the 13 species of otters. Living in the rainforests of South America, it has since 1973 been considered the most threatened in the world by the IUCN Otter Specialist Group. The species is considered "vulnerable" by the IUCN and has been on CITES Appendix I since 1973. At the First Symposium for the Conservation of the Giant Otter organized by INRENA (National Institute of Natural Resources) in Lima, it was decided that field work should be undertaken to survey the area round Port Maldonado in south-eastern Peru; and the implementation of environmental education and public awareness was continued. The objective of the field work was to evaluate three areas of great importance for the survival of Giant Otters in Peru:

i) Lake Sandoval, about 14 km from Port Maldonado, is the easiest place in Peru to observe Giant Otters and they have been studied there between 1990 and 1992. It is also a perfect tourist destination, but badly organised tourism has led to the animals becoming very timid. As requested by INRENA, we produced an outline for more effective management of Lake Sandoval: creation of areas where human activity is restricted; construction of observation towers platforms; restriction on how closely the boats can approach the otters; obliging tourists to be accompanied by an official guide; production of posters and pamphlets on the biology of the species and explaining the necessity for following rules; restrictions on the number of boats at any time on the lake, no-swimming zones; no entry zones; no fishing zones; a system of fines for transgressing these rules, and an entry fee to pay for infrastructure improvements. Current activities could continue but in a more controlled form. Evaluation of the success of the scheme will be based on the behaviour and reproductive success of the otters. The survival of Giant Otters in Lake Sandoval implies the existence of a corridor between nearby populations.

ii) Lake Valencia, 24 km from Lake Sandoval, on the other side of the Madre de Dios River, and is subject to more human disturbance; otters had not been reported for 10 years, but recently a family group was filmed there, and we were able to confirm their presence when we visited. This has important implications for linking isolated Peruvian populations.

iii) Rio Palma Real is in the protected zone in its middle and upper reaches; to the east runs the Heath river, and to the West, the 'Quebrada' Briolo, and Giant Otters were confirmed in both these rivers in 1992. During our field work, we found Giant Otters in the Rio Palma Real, which could bridge between the two nearby populations. Both Giant Otters and Neotropical Otters (*Lontra longicaudis*) were found in the Palma Real

Field activities also included the training of a group of technicians and biologists in methods of investigation of Giant Otters. During the Lima Symposium, 1000 posters of Giant Otters with a conservation message, 500 technical posters, 500 pamphlets on the Giant Otters, and 80 educational slide packs were distributed. In an area in the environs of the National Reserve Pacaya-Samiria, in the North of Peru, 1500 copies of a Giant Otter colouring book, "Pepe, the Giant Otter" for children were distributed, and a drawing competition was organized to stimulate the involvement of children and their understanding and appreciation of its environment.

INTRODUCTION

The Giant Otter (*Pteronura brasiliensis*) is the largest of the world's 13 otter species and is endemic to the rainforests and wetlands of South America. The IUCN Otter Specialist Group has considered the Giant Otter to be the most endangered otter species in the world since 1978. The species is currently classified as 'vulnerable' by IUCN (1996) and has been listed since 1973 under Appendix I (species threatened with extinction) of CITES. Comparatively little is yet known of Giant Otter biology and ecology, whether in captivity or in the wild.

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). The key objective of this project is to increase knowledge and understanding of

these unique animals and to develop a comprehensive plan for their conservation in Peru. The development and progress of the project has been described continuously in this newsletter (SCHENCK and STAIB, 1992, 1994, 1995, 1996; SCHENCK et al., 1997).

In 1998, the first International Symposium for the Conservation of the Giant Otter was held in Lima; a field trip was conducted in order to evaluate former and new study areas in the surroundings of Puerto Maldonado in south-eastern Peru; and the implementation of environmental education and public awareness was continued. In the following, we give a short description of these major activities:

FIRST INTERNATIONAL SYMPOSIUM FOR THE CONSERVATION OF THE GIANT OTTER

On the 10th and 11th of September, the 1st International Symposium for the Conservation of the Giant Otter was held in the National Institute for Natural Resources (INRENA), Lima. The symposium was organised in response to the growing necessity to catalyse new studies and protection measures for this species and its Amazonian habitat, and was attended by more than 100 representatives of scientific institutions, conservation groups, tourist companies, oil companies, universities, museums, protected area administrations, and the Peruvian government.

In accordance with the interdisciplinary nature of the symposium, presentation topics ranged widely; from the role of Giant Otters within the sustainable development of rainforest areas, to recent Giant Otter survey work in the Candamo river region, to the use of computer modelling of Giant Otter populations for the improvement of protected area management.

The presentations were followed by four workshops in which all participated. The four themes were (1) contributions to the Peruvian Otter Action Plan 2000, (2) investigation priorities for the Giant Otter in Peru, (3) conservation priorities for the Giant Otter in Peru, and (4) project organisation and fundraising.

The symposium report is currently being completed and will be published in Spanish by INRENA in early 1999.

FIELD WORK IN SOUTH-EASTERN PERU

The goal of this field work period was to evaluate three different areas, all of outstanding importance for giant otter survival in SE Peru (Fig. 1): a. Lago Sandoval, an oxbow lake of the Madre de Dios river, located only approximately 14 km from the city of Puerto Maldonado. Studies on Giant Otters have taken place there between 1990 and 1992 (SCHENCK, 1996); b. Lago Valencia, an oxbow lake also situated along the Madre de Dios River. There have been no Giant Otter reports for over 10 years; recent sightings, however, suggest a recolonisation of this, the largest lake in SE Peru; c. Rio Palma Real, a small river flowing northerly before meeting the Madre de Dios. Reports have suggested the presence of a Giant Otter population, which could be an important link between known populations of the Tambopata and Heath rivers. Training in Giant Otter research methods (track, spraint and den identification, key differences between *Pteronura brasiliensis* and *Lutra longicaudis*, throat pattern filming etc.) for three biologists and technicians also formed part of the field trip.

The field-work took place from 16.09.98 to 2.10.98. The team consisted of Christof Schenck (Frankfurt Zoological Society), Lucia Luna Wong (Conservation International), Jessica Groenendijk and Frank Hajek (independent), Cesar Vasquez (boatdriver), Joel Huaman (local assistant) and Dario Cruz (game warden).

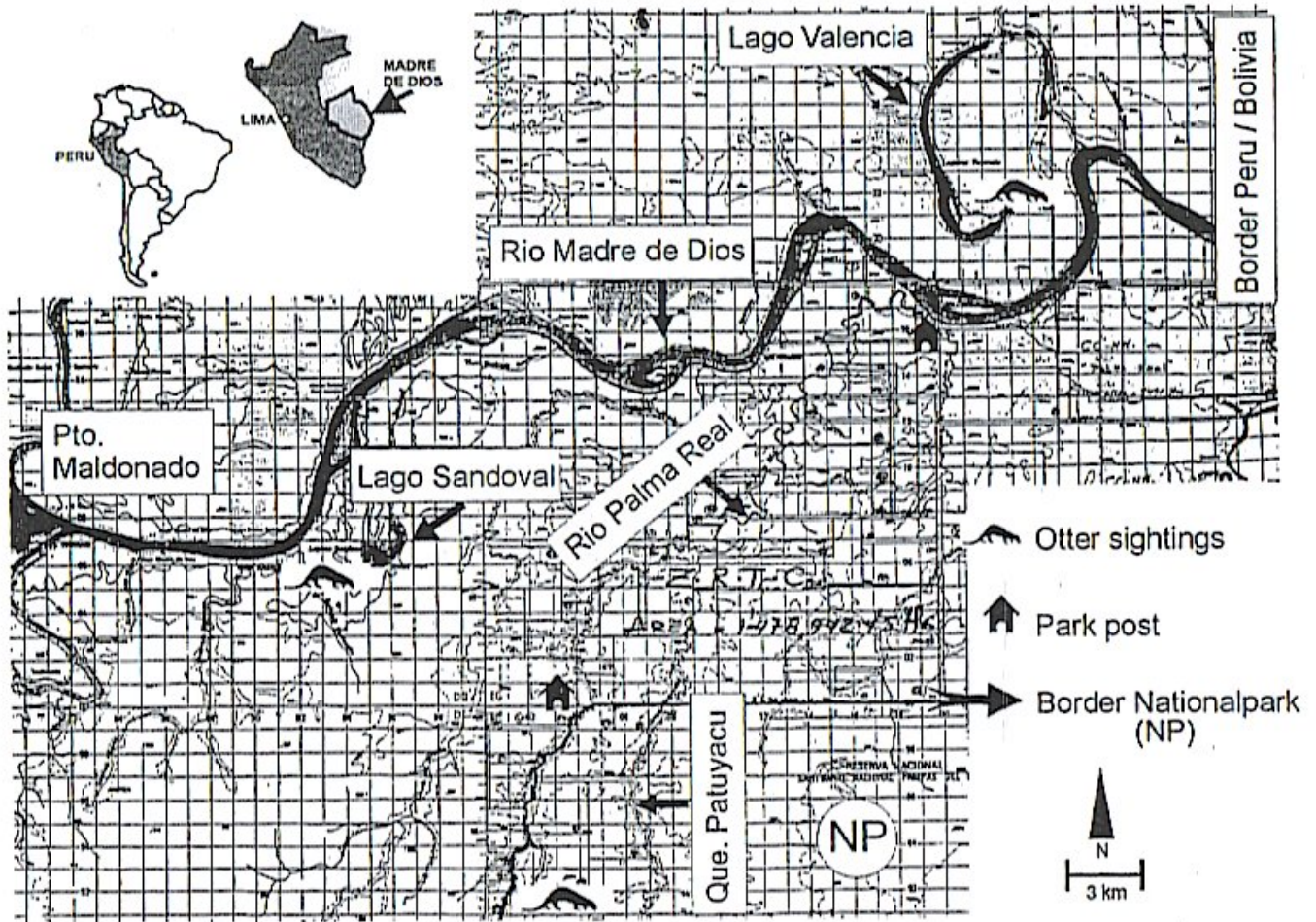


Figure 1: Study area

Lake Sandoval

Lake Sandoval, compared to other oxbow lakes in SE Peru, is one of the largest with a water surface area of approximately 125 ha and is located only one hour by boat from Puerto Maldonado, the capital of Madre de Dios. The presence of a species of palm tree (*Mauritia flexuosa*) in pure swamp stands or 'aguajales' lends the landscape an extraordinary scenery. This, together with its rich biodiversity and the presence of Giant Otters, makes the lake a perfect tourist destination. In contrast to most neotropical mammals, Giant Otters live in groups, are active by day and are relatively easily detected in the open water. The Giant Otter is a rare and endangered animal and therefore represents a key species for tourism in SE Peru.

At the time of our visit we observed only one solitary otter on one occasion. An old den on the shore and a number of large campsites (marking places) were found. The group of 11 individuals, which formerly inhabited the lake had not been observed by the locals for several months. We later heard that, from October onwards, a large group of otters was once again present at Lake Sandoval.

The tourism potential of Lake Sandoval has long been recognised and exploited. Research carried out between 1990 and 1992 showed that disturbance of otters was commonplace and resulted in shy animals. Main problems have been:

- More than 400 students may visit the lake at any one time, and are allowed free reign, swimming in the lake, scattering garbage and playing loud music.
- Local 'guides', inadequately trained and inexperienced, bring groups of tourists independently to the lake and camp on its shores, often with complete disregard of the presence of Giant Otters. On several occasions, they have set up their camp, log fire and music system in the immediate vicinity of a Giant Otter den.
- Illegal fishing is practised.
- Local landowners are clearing plots and paths, and one family has been running a lodge for many years, attracting low budget tourists as well as the afore-mentioned school field trips from Puerto Maldonado.

The 1998 evaluation showed that all these problems remain while new activities have been developed (Fig. 2):

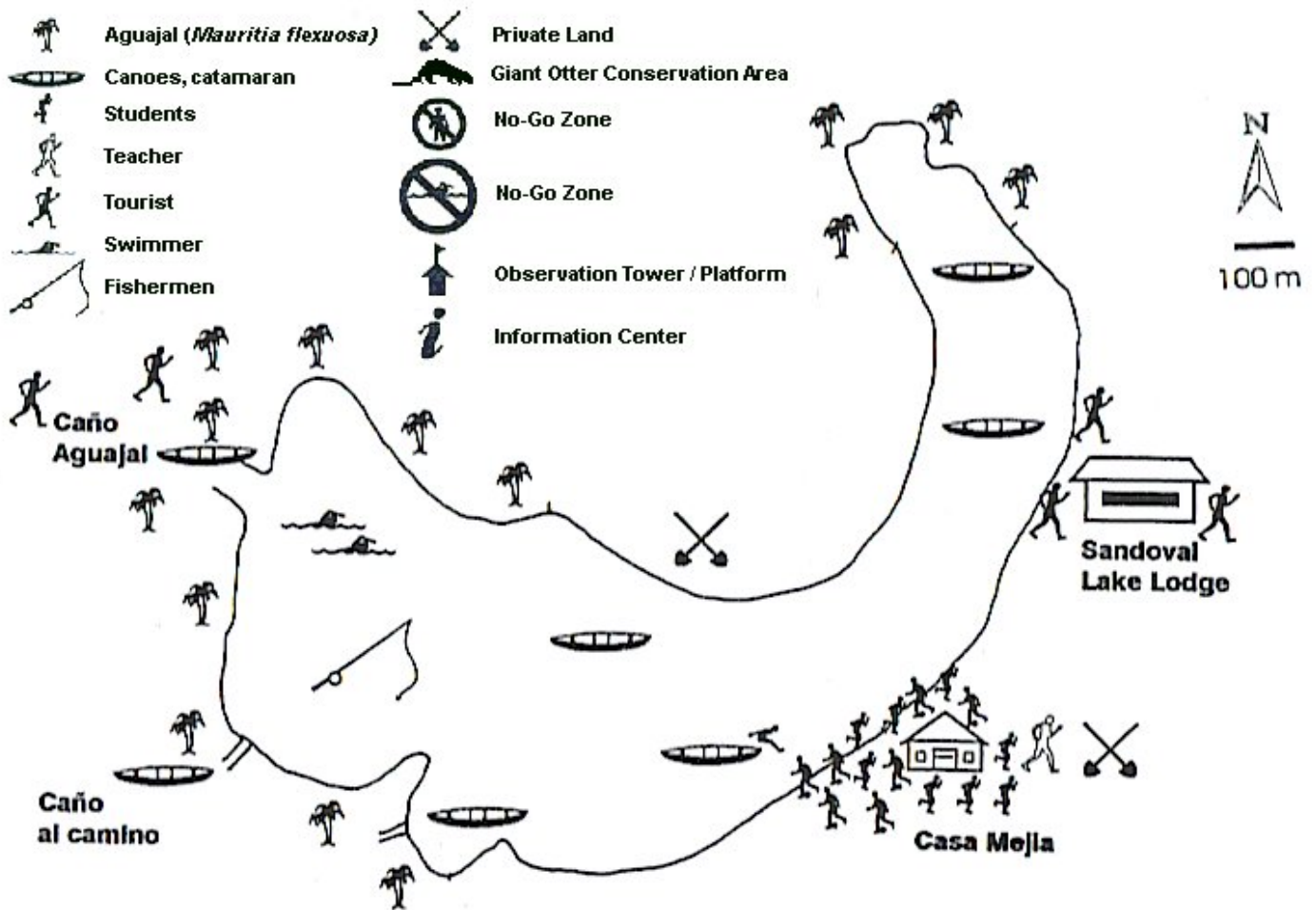


Figure 2 . Activities on Lake Sandoval that threaten Giant Otters

- A new lodge has been constructed on one of the lake shores without official permission.
- An increased and unregulated number of tourist and lodge boats/catamarans depart during the day (up to six canoes have been observed on the lake at any one time).
- Another tourist organisation is reportedly attempting to build a lodge on the opposite bank, having already constructed a walkway through the palm swamp forest for which more than 100 palm trees were cut down.
- Conflicts have arisen between the tourist companies and little effort is made to communicate or reach a compromise.

As requested by INRENA, we produced an outline for a more effective management of Lake Sandoval (Fig. 3).

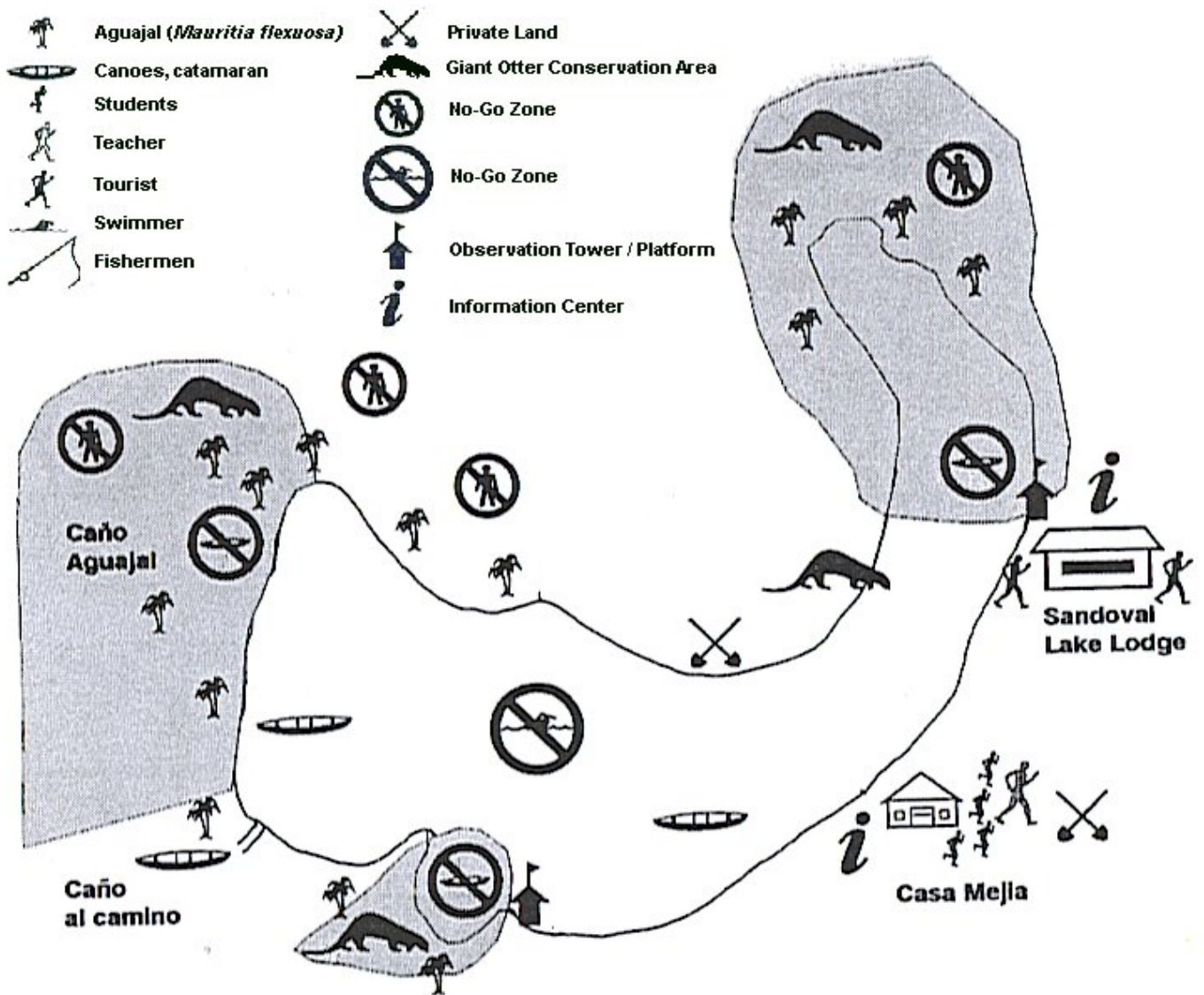


Figure 3 . Proposed solutions for Lake Sandoval to keep Giant Otters safe

The plan recommends that the following measures be introduced:

- No activity of any kind should be permitted within the 'agaujales', which also provide important nesting sites for many species of birds as well as a refuge for fish fry. No new paths should be cleared close to the shore line.
- No-go zones must be established in key areas, which are favoured by Giant Otters and where they have been observed most frequently. By sectioning off these zones, the otters are offered a degree of seclusion and a possibility to 'escape' the attentions of tourists.
- Observation towers and/or platforms should be constructed at strategic locations which permit the viewing of Giant Otters even within the otherwise 'no-go' zones. Stationary observation points are considerably less disturbing than moving canoes.
- If and when Giant Otters do venture outside the restriction zones, tourists and lodge boats must not be allowed to approach too close. A distance of at least 50 metres should be maintained between the otter(s) and the canoe.
- Tourists must be accompanied always by a trained and/or licensed guide.
- Lodges should provide posters / leaflets / lectures / slide shows, and the observation towers / platforms should also be equipped with informative and appropriately protected boards which illustrate the lifestyle of the Giant Otter in layman terms as well as explain the need to adhere to specific rules.
- A maximum of three boats should be allowed on the lake at any one time in order to minimise disturbance.
- Swimming should only be allowed directly in front of the existing lodges.
- The number of students which visit the lake should be limited to 40 individuals accompanied by at least two teachers / adults. School trips should be planned in advance and both the lodges as well as INRENA should be notified beforehand.
- All types of fishing should remain prohibited.
- If necessary, a suitable system of fines could be designed to ensure that rules are respected in the future.
- An entrance fee could be charged to cover infrastructure improvements.

The proposed management plan allows all human activities that have been conducted thus far to continue, albeit in a more controlled form and with the exception of fishing. The management strategy should be implemented by means of a positive approach. Rather than forbid activities, people should be offered better possibilities (of improved wildlife observation for tourists or, in the case of guides, an adequate income, which reflects higher tour standards). The effectiveness of the management plan should be evaluated according to Giant Otter behaviour and reproductive success. The survival of Giant Otters at Lake Sandoval not only means that there is an important stepping stone between neighbouring populations but also that the easiest-to-reach location for Giant Otter observation in Peru remains unspoilt.

Lake Valencia

Lake Valencia is located a distance of roughly 24 km (as the crow flies) downriver from Lake Sandoval, on the opposite bank of the Madre de Dios River (Fig. 1). For at least ten years there have been no positive reports of Giant Otters inhabiting Lake Valencia. This information may be considered relatively reliable as several families live on the shores of Lago Valencia and the area is visited regularly by tourist groups.

Lake Valencia appears to suffer from human disturbance to a greater extent than Lake Sandoval. While the latter is visited only by canoes, motor boats access Lago Valencia via a fast-flowing stream or 'quebrada', connecting the lake with the Madre de Dios river. Fishermen have settled on the lake's shores, which have been partially deforested. Although there are no lodges as yet, tourism does occur on a small scale. Fishing is a principle activity, with nets, which are staked out over a stretch of water for a period of time.

Mid 1998, there were rumours that Giant Otters once again inhabited Lago Valencia. In July, a British film crew working on a documentary on Giant Otters found two adults and three cubs. When visiting the lake in September we were able to confirm this observation. The footage obtained by the film crew will be used to document the distinctive white throat markings of these individuals, which can be referenced in any future studies. The recolonisation of Lago Valencia is an important contributory factor towards the linking of isolated otter populations in SE Peru. In view of the intensive human influence, specially designed education and monitoring programmes are essential for Lago Valencia.

The Palma Real River

The Palma Real River flows in a northerly direction before eventually meeting the Madre de Dios river. Its upper reaches are located entirely within the recently created Bahuaja-Sonene National Park (BSNP), the middle section forms a border between the BSNP and the Tambopata-Candamo Reserved Zone (TCRZ), and the lower stretch, up to its confluence with the Madre de Dios, does not enjoy any form of protected status whatsoever (Fig. 1). To the east of the Palma Real lies the Heath river system, which forms the border between Peru and Bolivia; to the west lies the smaller river or 'Quebrada' Briolo. The presence of Giant Otters in the Heath River system was confirmed by the FZS project in 1992 and has also been reported for the Briolo river. The objective of this field trip was to ascertain whether the Palma Real was also inhabited by Giant Otters, in which case it may function as a link between the Heath and Briolo River systems and therefore as a corridor between the Tambopata / Sandoval Giant Otter population and that of the Heath watershed.

At the entrance of the Palma Real River, a new park post has been constructed with the aid of brazil nut collectors or 'castañeros'. The gamewarden had received limited petrol supplies during 1998 to patrol the Palma Real and our field trip represented the first opportunity to do so in roughly six months.

The Palma Real is a small, meandering river of an estimated width varying between 10 and 20 metres and a depth regularly exceeding 2 metres. The river has few oxbow lakes or 'cochas' and those, which are present are very small (less than 100 m in length and 20 m in width). The remains of at least six Brazil nut collection camps were noted, and it was considered possible that the castañeros were perhaps partly responsible for the scarcity of game such as howler and spider monkeys.

Roughly six hours from the mouth of the river (with a 10m canoe and a 17 hp peke-peke engine) is a second park post, Puesto Enahuipa, which had not been occupied for at least six months. Constructed with confiscated wood, Puesto Enahuipa was initially built with the purpose of controlling entrance to the Pampas del Heath National Sanctuary, which currently forms part of BSNP. Now that a new gamewarden post guards the entrance to the Palma Real River, Puesto Enahuipa has become superfluous and has therefore received little maintenance. Despite the neglect, it is still in good condition and is well equipped. Inrena is now looking for partners to give Puesto Enahuipa a new purpose as a biological research station.

Two hours by boat up-river from Puesto Enahuipa, old tracks and resting areas of Giant Otters were found, as well as fresh tracks of a Neotropical otter (*Lontra longicaudis*). A large, relatively new otter campsite with a strong smell and numerous scales, fish bones and insect activity was encountered further upriver, and later we found a number of dens. A little further upriver from the den area we were confronted by at least five adult Giant Otters. They came directly towards us, making their snorting warning call. Then the group retreated slightly and began shouting agitatedly at each other. A contact call from downriver gave the impression of an additional otter, but only five animals were observed at any one time. There did not appear to be any cubs.

At the end of the second day of travelling up-river from Puesto Enahuipa, it was not possible to continue due to the falling water level of the river and the large tree trunks, which obstructed it. The Quebrada Patuyacu, a tributary of the Palma Real, was also navigated from Puesto Enahuipa down-river using an inflatable boat. Later, a Neotropical Otter was observed in the Rio Palma Real, down-river from Puesto Enahuipa. The observations confirm the presence of both otter species in the same river system.

In 1998, there were only 8 game-wardens actually on location in BSNP, compared to 19 in the previous year. There are few resources to ensure that park posts are fully staffed throughout the year and game-wardens are very poorly paid. Bahuaja-Sonene National Park has been recently created and has thus far received little attention and publicity, compared to Manu National Park for instance, which has been established for over 25 years and which is now widely recognised. The latter is in part due to the fact that the Manu Cocha Cashu research station has facilitated the production of numerous, well respected papers which have been published internationally. Between 6000 and 7000 tourists currently visit BSNP annually but concentrate mainly in Tambopata and Lago Sandoval.

The Palma Real observations of the Giant Otter group gave rise to several important questions: Given the conditions of the Palma Real river and the presence of a relatively large Giant Otter family unit, what minimum stretch of river does such a group claim as its territory? Are there more groups on the Palma Real? Does a resident family unit migrate up- or down-river periodically, relocating den sites in order to make maximum use of fish resources? If so, what is the relationship between fish density and migration, and the movement of Giant Otters? Does otter migration take place between river systems, so that the Palma Real becomes a corridor, connecting Giant Otter populations in the Heath area and those of the Tambopata region? What happens during the wet season when the river water level rises by several metres, turbidity increases, and fish are presumably much harder to catch? And finally, to what extent do the presence and activities of 'castañeros', game-wardens, scientists and tourists influence the presence of Giant Otters and the locations of their den sites on small rivers such as the Palma Real? While investigation on larger rivers and the importance of oxbow lakes for Giant Otters was a focus of former research (SCHENCK, 1996), it is planned to concentrate future research on small streams and quebradas.

From March 1999 onwards, Jessica Groenendijk and Frank Hajek will represent the Frankfurt Zoological Society in Peru, as coordinators of the FZS Giant Otter Conservation Project. The main objectives are to (1) further Giant Otter conservation in Peru, through capacitating, education, promotion and networking initiatives; (2) assist government institutions with habitat and Giant Otter management; (3) carry out scientific research in order to complement existing results; (4) catalyse and contribute towards the development of a national distribution map for the species.

Public awareness activities

In the area surrounding Pacaya-Samiria National Reserve in northern Peru, 1500 copies of the drawing book for Peruvian children, "Pepe, el Lobo de Río" (Pepe, the Giant Otter), funded by GTZ/TÖB Germany, were distributed. Together with the Peruvian NGO, Pro Naturaleza, a drawing competition was organised in order to further stimulate the involvement of children and hence their understanding and appreciation of their natural surroundings. This competition was very well received as indicated by a high response rate (876 participants). Pro Naturaleza and National Reserve authorities have requested the continuation of this project.

At the Giant Otter Symposium in Lima, the following educational and promotional materials were distributed: 1000 Giant Otter posters with a conservation message (designed and produced by the Frankfurt Zoological Society), 500 Giant Otter technical posters (designed and produced by INRENA), 500 booklets "Lobo del Río - un gigante bajo presión gigantesca" (designed and produced by Frankfurt Zoological Society) and 80 educational slide packs for use in tourist lodges, schools and gamewarden posts.

A photographic exhibition illustrating the habitat of and current threats to the Giant Otter was held at the symposium. This material was donated to INRENA. A proposal was made to establish a 'Friends of the Giant Otter' communication network and newsletter in Peru; this will be one of the key activities of the project in 1999.

Acknowledgements - The project is financed by the Frankfurt Zoological Society, Help for threatened Wildlife. We like to thank the Peruvian authorities INRENA for all support and the administration of the National Parks for the possibility to realise the field work. Special thanks also to ProNaturaleza and LUFTHANSA for cooperation and support.

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RESUMEN : Reporte de actividades y salida de campo del Proyecto Nutria Gigante en Perú - 1998

La nutria gigante (*pteronura brasiliensis*) es la mayor de las 13 especies de nutrias. Es endémica de selvas y humedales de américa del sur. Ha sido considerado por el grupo de especialistas en nutrias de la uicn como la nutria más amenazada en el mundo desde 1978. La especie es considerada “vulnerable” por la uicn y aparece en el apéndice i de citas desde 1973. En 1998 se realizó en el inrena (instituto nacional de recursos naturales), en lima, el 1er. Simposio para la conservación de la nutria gigante, se realizó una salida de campo para evaluar áreas en los alrededores de puerto maldonado en el se de Perú, y se continuó con actividades de educación ambiental y conciencia pública. El objetivo de las tareas de campo fue evaluar tres áreas de gran importancia para la supervivencia de las nutrias gigantes en el se de Perú: i) lago sandoval, a unos 14 km de la ciudad de puerto maldonado. Se han realizado estudios sobre nutrias gigantes allí entre 1990 y 1992; ii) lago valencia, no han habido reportes allí de estas nutrias en los últimos 10 años. Avistajes recientes sugieren la recolonización de este, el lago mas grande del se de Perú; iii) río palma real, reportes sugieren la presencia de una población de nutrias que pueden representar un lazo importante entre poblaciones conocidas de los ríos tambopata y heath. El entrenamiento de un grupo de técnicos y biólogos en métodos de investigación de nutrias gigantes, también formó parte de las actividades de campo. El lago sandoval es un destino turístico perfecto. Durante nuestra visita observamos una sola nutria gigante, a partir de octubre un grupo grande de nutrias volvió a aparecer en este lago. La mala explotación turística del lugar, estudiada entre 1990 y 1992, perturba a las nutrias, provocando que estos animales sean tímidos ante el hombre. En 1998 la situación se había agravado. A pedido del inrena se realizaron las siguientes recomendaciones para un manejo más efectivo del área: delimitación de áreas restringidas a las actividades humanas, construcción de torres y plataformas de observación, restricción de la distancia a la que los botes pueden acercarse a las nutrias, obligación de los turistas de ir acompañados por un guía, producción de posters, folletos, etc. Y de carteles para los puntos de observación, sobre la biología de la especie y explicando la necesidad de seguir reglas, restricciones al número de botes presentes en el lago, las zonas de nado y el número de visitantes, prohibición de realizar pesca, diseño de un sistema de multas si fuera necesario, y cobro de una cuota de ingreso para mejoras si se desea. El plan permite continuar con las actividades realizadas hasta el momento, pero de forma más controlada. El éxito del mismo debe evaluarse en función del comportamiento y el éxito reproductivo de las nutrias. La supervivencia de estas en el lago sandoval implica que existe una piedra de paso entre poblaciones cercanas y que la localidad de mas fácil acceso en todo Perú para la observación de nutrias gigantes sigue estando en buenas condiciones. El lago valencia esta localizado a 24 km en línea recta del lago sandoval en el otro margen del río madre de dios. Parece sufrir mayores disturbios humanos que este último. A mediados de 1998 hubieron rumores de la presencia de nutrias gigantes en la zona tras 10 años sin registros. En julio un grupo de dos adultos y tres crías fue filmado en el lago valencia. Cuando visitamos el área, pudimos confirmar estas observaciones. La recolonización de este lago es un importante factor para la unión de poblaciones aisladas del se de Perú.. El río palma real está incluido en su tramo superior y medio en áreas protegidas de la zona. Al este de este río corre el río heath, y al oeste la quebrada briolo. La presencia de nutrias gigantes en ambos cursos fue confirmada en 1992. Durante nuestra salida de campo el objetivo en esta zona fue averiguar si existen nutrias gigantes en el río palma real, en cuyo caso, este podría actuar como vinculo entre los otros dos ríos mencionados, y por lo tanto como corredor para las poblaciones de tambopata/sandoval y heath. Tanto nutrias gigantes como lobitos de río (*lontra longicaudis*) fueron registrados, durante nuestra campaña, en el río palma real. Durante el simposio, en lima, 1000 posters de nutrias gigantes con un mensaje conservacionista, 500 posters técnicos, 500 librillos sobre el estado de las nutrias gigantes, y 80 juegos de slides para actividades de educación fueron distribuidos. En un área en los alrededores de la reserva nacional pacaya-samiria, en el norte de Perú, se repartieron 1500 copias de un libro de dibujos para niños sobre nutrias gigantes, y se organizó una competencia de dibujo para estimular el involucramiento de los niños y su entendimiento y apreciación de su entorno natural.

SHORT NOTICE

CURATIVE PROPERTY OF OTTER BLOOD - A BELIEF

NAGULU Vangla, VASUDEVA RAO Vaidyula, SRINIVASULU Chelmala

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While gathering information on the ethno-biology of the tribals in Andhra Pradesh, we had been documenting beliefs and myths regarding the use of animal parts and products for ethno-medicinal purposes. In the course of our interviews with tribals and traditional practitioners of Ayurveda, we came across an incidence of the use of otter blood as a cure for epilepsy.

It is believed that the blood of the otter when consumed cures epilepsy permanently. Usually the blood is to be taken fresh in small quantities at least for three times. As the otters are difficult to be found a slightly modified procedure is followed. When an otter is caught, it is sacrificed and the blood is collected into a clean utensil. A cotton cloth is then dipped into it to soak the blood, air dried and stored for further use. When in need, a small piece is then torn and dipped into a glass of water for the dried blood to become dissolved in it. This is then consumed by the patient. As the blood has been stored and diluted by dissolving in water, one is required to take three such doses a day for three days contrary to one dose each day for three days in the case of the fresh blood.

As far as the identity of the species is concerned we believe it may be *Lutra perspicillata* as its distribution overlaps areas where such beliefs persist.

RESUMEN

Propiedades curativas de la sangre de nutrias - Una creencia

Durante el desarrollo de un estudio etnobiológico de las tribus en Andhra Pradesh, hemos documentado creencias y mitos sobre el uso de partes de animales y productos con propósitos etnomedicinales. Durante entrevistas con tribus y practicantes tradicionalistas de Ayurveda, detectamos el uso de sangre de nutrias como cura para la epilepsia. Se cree que su consumo cura permanentemente esta enfermedad. Generalmente la sangre debe ser consumida en pequeñas cantidades al menos tres veces una vez al día. Como las nutrias son difíciles de encontrar se utiliza un procedimiento modificado. Cuando una es capturada, se la sacrifica y se almacena su sangre en un recipiente limpio. Un trozo de algodón se sumerge en este para empapararlo de sangre, se lo seca al aire y se lo almacena para ser utilizado. Cuando es necesario, un trozo del algodón es introducido en un recipiente con agua para que la sangre seca se disuelva en aquella, y luego es consumida por el paciente. Como la sangre ha sido diluida se requiere que el paciente ingiera tres dosis al día durante tres días. La especie probablemente utilizada es *Lutra perspicillata*, ya que la distribución de esta se superpone con las áreas donde tales creencias persisten.

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NEW BOOKS

MUSTELIDS IN BELARUS

Evolutionary ecology, demography and interspecific relationships
SIDOROVICH, Vadim E.

1997, Minsk, Zolotoy uley publisher, 263 pp. Format A4, 33 photographs in colour

The text is in Russian and for each item there are extended English summaries, which cover 10-90%, on average about 50% of the Russian text. All tables and figures are given in English.

Information on the nine mustelid species (*Lutra lutra*, *Mustela lutreola*, *M. vison*, *M. putorius*, *M. erminea*, *M. nivalis*, *Meles meles*, *Martes martes*, *M. foina*) is presented in the book.

Chapter 1 describes methods and sample sizes for the study of spatial structure of populations of mustelids, their diets and interspecific relationships, as well as methods to study mustelid carcasses. Drawings of mustelid helminths from Europe are accompanied by identification keys.

Chapter 2 gives an analysis of intrapopulation variation and interpopulation metric and non-metric differences in otters.

Chapter 3 deals with mustelid habitat diversity and density in Belarus, the distribution of mustelids as a function of habitat carrying capacity, and the factors of habitat carrying capacity.

Chapter 4 deals extensively with the diet of the riparian mustelids, i.e. otter, European mink, American mink and polecat. There is a special item related dietary overlap and resource competition in the riparian mustelid guild. Other subjects treated in greater detail are: comparative analyses of feeding habits of pine marten and polecat; habitat separation of the generalist mustelids in forests; the high dietary similarity and habitat separation of stoat and weasel; ecological separation in the mustelid guild preying on small mammals; the feeding similarity of stone marten and polecat in villages; and the feeding habits of the badger in mixed forests of Belarus.

Chapter 5 gives the current state of studies of the trophic structure of the vertebrate predator community and status of mustelids in the predator relationships. It contains tables with data of vertebrate prey and diet similarity tree diagrams for carnivores and birds of prey.

Chapter 6 presents results on demography of the semiaquatic mustelids. Reproductive regulation and decline, structure of overexploited population, and cases of extinction are described in the chapter. This part gives an analysis of the non-cyclic breeding of otters in relation to prey abundance and availability, the demography of overexploited populations of otters, the plasticity and decline of reproduction in the American mink, the variation in structure of exploited American mink populations, and a discussion of hypotheses and original ideas on the disappearance of the European mink.

Chapter 7 deals with the helminth diversity in populations of otter, European mink, polecat, and pine marten.

Chapter 8 gives analyses of mustelid populations in relation to habitat pollution, treats the Chernobyl fallout, heavy metals, organochlorine pesticides, and pollutant concentrations in the European mink and rivers with implications for the decline of its population in Belarus.

Chapter 9 gives tables with comparative analyses of trace element concentrations in mustelids in connection with their phylogenetic similarity.

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MAMIFEROS DEL ECUADOR

Diego Tirira S.

This book is a synthesis of the knowledge accumulated by a team of mammalogists, presented in a single tome all the available information about Ecuadorian Mammals. It includes: an introduction to mammals; a historical summary of the mammalogy in Ecuador; a discussion of the diversity and characteristics of all orders and families; a checklist of scientific and common names; and information on the geographical distribution of the 369 species known to occur in Ecuador. A guide to the tracks of terrestrial mammals, and drawings and color photos of about 40% of the species. This book is a pioneering work and the most inclusive treatise on Ecuadorian mammals that has been published to date.

The price for the book is 30 US\$ plus postage.

For further information please contact:

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Ecuador

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<http://mamiferos.cjb.net/>

PROCEEDINGS OF THE 16th MUSTELID COLLOQUIUM

9th - 12th October 1997, Århus, Denmark

Aksel Bo MADSEN, Tommy ASFERG, Morten ELMEROS, Kirsten ZALUSKI (eds.)
NERI Technical Report No. 262

In the book several aspects of otter biology such as habitat use and home range, reproductive timing, territoriality, otters and fish farms, urolithiasis, age determination etc. are covered. In addition contributions cover various aspects of stone and pine marten, mink, weasel, stoat, polecat and badger biology.

For further information please contact:

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DK-8410 Ronde
DENMARK

CONGRESS ANNOUNCEMENTS

VIII. INTERNATIONAL OTTER COLLOQUIUM

Valdivia City, Chile
January 2001

Dear friends:

I am happy to confirm the date and place for the next International Otter Colloquium. The meeting will be in Valdivia City, Chile, using facilities of the Universidad Austral de Chile. The meeting will begin in the third week of January 2001, this is summer in Chile and we hope we will have a wonderful weather. There will be two field trips, and there will be offers for before and after meeting tourist trips.

So please start saving money.

We are also trying to organize a Latin American otter workshop especially for *Lontra longicaudis*, *Lontra felina* and *Lontra provocax* biologists in Chile in April 2000. The interested people should send e-mails to:

Gonzalo Medina-Vogel
IUCN Otter Specialist Group
Coordinator
Latino America
Email: gmedina@uach.cl

18th MUSTELID COLLOQUIUM

September 16th- September 19th, 1999, Schloss Zeilern, AUSTRIA

The program will present contributions including the whole field of investigations in Mustelids (morphology, genetics, physiology, ethology, ecology, hunting, trapping,...). Oral presentations should deal with planned projects or "work in progress", posters should present already finished studies.

For further information please contact:

Dr. Johanna Sieber, KLIVV Savoyenstr. 1a, A-1160 Wien, AUSTRIA
Fax.: +43 1 486 21 21 28, e-mail J.SIEBER@KLIVV.OEAW.AC.AT

CALL FOR HELP

Dear otter-friends:

We have been monitoring the distribution of the southern river otter, *Lutra (Lontra) provocax*, in North-western Argentinean Patagonia - especially in Nahuel Huapi National Park- since 1982.

As part of this effort, we made an intensive sign-survey of the Park in 1982, then in 1995, and the next will be the "millennium survey", in March-April 2000. We are seeking some funds - no big deal, really: approximately 2.000 U\$\$, for covering the costs of this important survey.

Does anyone of you have any suggestions as to organisations or institutions, which might help with this money?

Thank you very much,

Claudio Chehébar

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Administración de Parques Nacionales
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“VIRTUAL OTTERS“

Dear otterlovers,

Our website <http://www.aqualutra.nl> has some new features, although it is still under construction. There is a nice animation of a running otter and there are some beautiful photo's made by a well known Scottish photographer Niall Benvie.

The site will be translated into English and German in the near future. In the meantime this is the way to catch up with your Dutch!

When you are around, please visit us! Besides otters we have a lot of other animals living in European wetlands. Get in touch with us through our e-mail address or give us a ring at ++31-(0)511-431214.

Any comments you can send to: info@aqualutra.nl. Thanks!

<http://www.Worldanimal.net>

This is a global information network for animal protection organisations.

<http://www.Seaotters.org>

<http://www.Otternet.com>

<http://www.otter.org>

OTTER POETRY

 Otter, otter, churning in the bight
 Who turned on in otter eye, the look of fright
 Playful, frolicsome
 Full of fun, handsome
 Buoy him up, hold up a beckoning light
 Across waterways, he always free ranged
 Till man crossed his path and fishing nets arranged
 For a crime not his, otter is now arraigned
 Trapped, in sheer survival instinct cuts the net loose
 Fishing net, easy to mend and reuse, once thread rearranged
 But a thread broken, in Nature's net, the web of life is a noose
 A rule true, for trutta, teal or tiger, the otter or moose.

(Inspired by William Blake's poem)

by :

Prof. J. V. Ramana Rao (Retd.)

Wildlife Biology Section

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