



## **Amur Leopard & Tiger Project:      Summary of Activities 2012**

### **Introduction**

Over the past few years it has become apparent that there is considerable overlap in the veterinary support requirements for the conservation of the Amur leopard and Amur tiger in the Russian Far East. Although there are differences in degree, the infectious disease risks faced by both cats have been demonstrated to be similar (see Goodrich, Lewis et al 2012), necessary local disease diagnostic requirements are almost identical and the training requirements of Russian biologists and vets dealing with either cat are largely the same. Many of the staff concerned are involved with both cats anyway. Whilst it remains the case that a reintroduction programme is only necessary for the Amur leopard, tigers are present in both the existing habitat of the leopard and in the proposed area for reintroduction. As a result, veterinary concerns for the two cats overlap even within a programme designed for just one.

In response to this somewhat predictable situation and to direct requests from conservation organisations in the region, WVI has extended its activities in Russia to providing support for both species in a far more integrated manner. Our approach in Russia into the future will therefore be balanced in supporting efforts to conserve both these rare cats equally. This is a logical and exciting development for WVI and is only possible because of the trust built up over the past 6 years between us and all the many organisations and people in the Russian Far East concerned with the conservation of their large cats. To be effective and make a real difference, a long term involvement and commitment is essential – and that is exactly what WVI will do given continued support from our sponsors.



A captive Amur leopard at the Wildlife Heritage Foundation, Kent, UK

WVI activities in this programme during 2012 have been wide ranging both within the UK and in the Russian Far East, although no trapping season was possible this year. However, the minor bureaucratic reasons for this are unlikely to persist into the future, and further trapping, medical evaluation and radiocollaring of both leopard and tiger is anticipated in 2013.

## Activities in the UK

### **The role of WVI:**

Dr John Lewis continues to act as veterinary consultant to both *in situ* and *ex situ* activities for Amur leopard conservation. That being the case, WVI is uniquely placed to appreciate the veterinary issues of the Amur leopard both within the European zoo programme (EEP) and in the wild. This will become critical when the first reintroductions are made. (See previous project reports for further details). Dr Lewis also acts as the veterinary advisor to the Amur tiger EEP.

### **Amur leopard Veterinary Database:**

Minor glitches in the database were ironed out at the beginning of 2012 and details from nearly 700 captive and wild leopards have now been entered. Analyses of the causes of mortality in captive animals, the results of screening tests (individuals and within the population) and status of samples stored for future use are now retrievable at the click of a mouse! Further automated analyses will be programmed in the future for ease of use.

### **UK presentations:**

In 2012 presentations about the veterinary aspects of Amur leopard conservation were given to Cambridge University Veterinary Zoological Society, Marwell Zoo and the Wildlife Heritage Foundation. WVI considers such talks as essential in encouraging and enthusing the next generation of wildlife vets in the UK, and to keep animal care staff in participating zoos apprised of what is going on in the field and of the relevance of their own work. More presentations are planned for early 2013.

A series of short reports on the health of the captive Amur leopard population and the veterinary activities in Russia were presented to the European Association of Zoos and Aquaria in Innsbruck, Austria.

### **Research:**

UK based research into the veterinary issues of Amur leopards and tigers has continued through 2012.

Ticks collected and preserved by the WCS-Russia team over the past 10 years from tiger, bears, leopard, lynx and other species have been tested for the presence of potential tick-borne pathogens that could affect tiger and leopard. Ticks collected from the ground in Primorsky Krai have also been tested. This is a very useful and non-invasive way of determining whether potential pathogens are present in the Russian Far East without having to capture more animals. The work was conducted by Lindsay Thomas in part fulfilment of her MSc in Veterinary Science at Bristol University. Lindsay's work revealed the presence of at least two types of blood parasite transmissible by ticks, and has added useful data to the overall assessment of what infectious disease threats the large cats face in Russia. Further studies on ticks are planned for 2013.



Ticks collected from tigers in the Sikhote-Alin area of Primorsky Krai

Serum samples collected from domestic dogs and cats by Misha Goncharuk in the villages around Lasovsky (one of the proposed reintroduction areas for leopards) were imported into the UK in late 2012 and are being analysed by Glasgow University Veterinary School. Although preliminary results were obtained in Russian laboratories last year, Glasgow University is able to employ the latest techniques suitable for such analyses. Not only are we seeking the results, but it is also necessary to validate tests available in Russia.

## **Activities in Russia**

John Lewis visited the Russian Far East during October 2012, largely to contribute to training programmes for field staff and develop local capacity to detect and study disease in wildlife.

### **Workshop, Terney, October 2012 – “Dealing with Conflict Situations”**

“Inspection Tiger” is no longer responsible for resolving tiger-human conflict situations in Russia. This role has been transferred to the Provincial Wildlife Departments of Khabarovskiy and Primorsky Krai which have identified new teams of field biologists for the purpose. A workshop was hosted by WCS-Russia between the 8<sup>th</sup> and the 10<sup>th</sup> October 2012 to introduce these teams to the methods used to resolve conflicts. John Lewis provided training in anaesthesia & anaesthetic problem resolution/prevention. Unfortunately, no animals were available for demonstrating the practical aspects of anaesthesia on this occasion, but WVI has committed to return in the spring of 2013 to continue the training provided that a) each team has identified a vet to work with them and b) captive tigers and bears are available to allow practical experience under safe conditions. This offer was well received!

### **Meeting at Russian Academy of Sciences Institute for Biology & Soil Science, Vladivostok**

On the 12<sup>th</sup> October a meeting was convened by WCS-Russia at the offices of the IBSS in Vladivostok, bringing together a wide range of parties now interested in wildlife disease to establish a forum for the exchange of information and develop concrete proposals and mechanisms for work and collaboration in the near future.

Those attending included the IBSS, WVI, Zoological Society of London, WCS-Russia, WWF-Russia, the Primorsky State Academy of Agriculture, State Veterinary Services, representatives of private veterinary laboratories and practices in Vladivostok and the new Primorsky Aquarium.

The future of wildlife disease surveillance & how to get relevant tests done was discussed, a review of progress at the PSAA wildlife pathology laboratory was considered, and cooperation with newly available laboratories in the RFE explored.

The necessity of developing a single post mortem sampling strategy for tigers and leopards examined at the PSAA wildlife pathology laboratory was stressed. There are many interests to be served when a wild tiger or leopard is examined post mortem, including those of wildlife pathologists, geneticists, forensic investigators, state veterinarians, etc., and there is no reason why suitable samples cannot be made available to all. This has not happened in the past, but protocols are now being written. The long term storage of samples was also discussed.

(Shortly after this meeting, John Lewis, Dale Miquelle and Misha Goncharuk visited the new Primorsky Aquarium with its new laboratory facilities. The aquarium falls under the jurisdiction of the Russian Academy of Sciences, and its director, Dr Dmitry Pitruk, was open to suggestions of cooperative diagnostic work in the future.)

**This is highly significant progress.** The various interested parties have hitherto operated rather in isolation, but now there seems to be a genuine desire to coordinate and cooperate which bodes well for the future. In years to come it is planned to hold similar meetings regularly both to review progress and to increase the quality of disease testing in the RFE.

## The Workshop in Terney



Formal workshop session



How to make up an anaesthetic dart



Discussing use of the dart gun

## Visit to Inspection Tiger’s “Rare Animals Rehabilitation Centre” in southern Primorsky Krai:

John Lewis was asked by a potential donor and WCS-Russia to visit and assess the viability of a new rehabilitation centre at a remote location in the south of Primorsky Krai run by the head of Inspection tiger, Victor Gapanov. (*The exact location of this centre has not been identified in this document for reasons of privacy – crucial to the appropriate rehabilitation of large carnivores like tiger and leopard*). One young wild female tiger had been found in very poor condition in late February 2012 (estimated age 4 months), given immediate first aid and placed in the rehabilitation centre. Provided that the rehabilitation process is successful, the intention is that the tiger will be released at a remote location when she reaches approximately 18 months of age (approximately the time at which a young tiger would disperse from its mother in the wild).

The facility was designed to minimise unnecessary contact with humans during the animal’s captivity, to give the tiger a large fenced area on the edge of natural tiger habitat, and to assess the tiger’s locomotion and hunting ability largely by CCTV. When seen, albeit briefly and in the distance, this tiger appeared to be in good condition without any sign of a previous lameness, and appropriately wary of people. Immediately before the visit it had killed and eaten a roe deer in its enclosure.

Although not perfect, this centre is a reasonable attempt at conducting tiger rehabilitation professionally. The progress was discussed with Victor Gapanov, other members of the team responsible for the centre and Dr Misha Alshanetski – the senior veterinarian at Moscow Zoo, and help offered if needed.

The rehabilitation of common species generally has little to do with conservation. However, with animals as rare as the Amur tiger, every individual is important and rehabilitation becomes a necessary tool on occasions . Russia needs a well designed tiger rehabilitation centre, and this is a very good effort deserving our support.



“Rare Animals Rehabilitation Centre”, Primorsky Krai

## **Meeting with Sergei Naydenko & Victor Lukarevsky 17-Oct-12**

Another meeting was held with Sergei Naydenko and Victor Lukarevsky from the Ussurisk Zapovednik leopard breeding centre (see report 2011). The changes to the centre's construction advised by John Lewis in October 2011 have now been accepted and will apparently be instigated in 2013. Provided these changes are carried out to the satisfaction of the Amur Leopard EEP Species Committee, this development should facilitate transfer of leopards from the EEP into the centre for the purposes of breeding for release. Leopards bred at this centre could be reintroduced not only in Ussurisk but also in Lasovsky before the proposed facility at that location can be built. Cooperation between the two centres has improved markedly, and so we are one important step closer towards the reintroduction of the Amur leopard!

## **Wildlife disease survey support**

Supported by ZSL and supervised in part by John Lewis, Misha Gonchuruk has been carrying out disease surveys in prey species and domestic animals in and around the Lasovsky Zapovednik in South-East Primorsky for several years. This is important work given that Lasovsky is the preferred reintroduction area for Amur leopards. Misha has now been joined by another young Russian veterinary graduate, Nadia Sulikhan, who has started disease surveys in domestic animals in South-West Primorsky around existing leopard habitat, supported by WCS-Russia. Both Misha and Nadia are studying for their doctorates, and their official supervisor in Russia is Dr Olga Uphyrkina at the Institute of Biology & Soil Sciences in Vladivostok.

Three days of intensive discussions were held between Dr John Lewis, Misha Goncharuk, Nadia Sulikhan, Dr Olga Uphyrkina and Martin Gilbert of WCS (*who has recently started a PhD at Glasgow University on Canine Distemper in the Russian Far East*) to develop further the academic framework that underpins the setting of disease screening priorities and sampling strategies. This was an extremely useful process building on and updating the theoretical disease risk assessment drawn up by John Lewis in 2007. All relevant references and information collected by John over the past 5 years was made available to all participants.

Once again this is indicative of significant progress in bringing together Russian vets, local scientists and foreign specialists to develop disease risk analyses specific to the Russian Far East. The recruitment of another young Russian vet to wildlife disease investigation and the involvement and contribution of Dr Olga Uphyrkina from IBSS are particularly welcome.

## **Recent Publications**

Three scientific articles concerning disease issues relevant to the conservation of Amur leopards and tigers were published in 2012 (see below). Although WVI contributed to all three through the input of John Lewis, of far greater significance is the involvement of Russian vets and biologists as contributing authors. This is undoubtedly indicative of a greater level of engagement with the wider veterinary community, raising the profile, status and standards of local specialists.

**Goodrich J. M., K.S. Quigley, J.C.M. Lewis, A.A. Astafiev, E.V. Slabi, D.G. Miquelle, E.N. Smirnov, L.L. Kerley, D.L. Armstrong & H.B. Quigley (2012)**  
Serosurvey of Free-ranging Amur Tigers in the Russian Far East  
J. Wildlife Diseases, 48 (1), 186-189

**Goodrich J. M., Lewis, J.C.M., Quigley, K.S., Roelke, M., Astafiev, A.A., Slabii, E.V. Miquelle, D.G., Smirnov, E.N., Kerley, L.L., Armstrong, D.L., Seryodkin, I.V., Quigley, H.B. & Hornocker, M.G. (2012)**  
Infectious diseases of Amur tigers and Far Eastern leopards. Pp 19 – 26 in:  
Diseases and parasites of wildlife in Siberia and the Russian Far East: monograph, I.V.Seryodkin & D.G. Miquelle, editors. Vladivostok: Dalnauka, 2012. 224p. ISBN 978-5-8044-1315-7

**Goncharuk, M.S., Kerley, L.L., Christie, S., Lewis, J.C.M., Borisenko, M. E., Naydenko, S.V., Rozhnov, V.V. (2012)**  
Program to study infectious diseases in mammals of southeast Primorskii Krai. Pp 63 – 67 in:  
Diseases and parasites of wildlife in Siberia and the Russian Far East: monograph, I.V.Seryodkin & D.G. Miquelle, editors. Vladivostok: Dalnauka, 2012. 224p. ISBN 978-5-8044-1315-7

### **Concluding remarks**

There appears to be the beginnings of a momentum towards involving Russian vets not only in wildlife disease issues in the region, but also in the development of local diagnostic capacity, in the resolution of human-tiger conflict, and in the development of rehabilitation capacity. The general improvement in coordination between a range of local Russian organisations and individuals in disease investigation is especially welcome.

Modern wildlife conservation necessarily relies on pooling expertise and resources from different organisations and even countries, and in no field is that more true than veterinary medicine. Developing networks is essential and we believe that this is happening in the Russian Far East. WVI will continue to facilitate the process until our involvement is no longer necessary. However, that may be a long road!



***We would like to thank our sponsors for their generous and continued support of this project:***

ALTA  
Barbara Meyer  
Colchester Zoo's "Action for the Wild" programme  
JAK Marketing  
Folly Farm Adventure Park and Zoo  
The Friends of Paradise Wildlife Park  
Marwell Zoological Park  
Wildlife Heritage Foundation  
Virbac UK