Short Information **28.05.2015**

Catastrophic mass die-off of Saiga antelopes in Central Kazakhstan

Since the 10th of May, a mass die-off of Saiga antelopes (*Saiga tatarica tatarica*) has been observed in the Betpak-Dala population in Central Kazakhstan. The first animals have been detected in Amangeldy district of Kostanay region, but soon further affected groups have been found not far from the first location, but also in other regions (Aktiubinsk and Akmola). To date, more than 120,000 animals have died.

The Association for the Conservation of Biodiversity of Kazakhstan (ACBK) has been at the first die-off site on 10th of May in order to monitor and investigate the calving of saiga. Female Saiga antelopes gather every year by mid of May in large herds to give birth to their calves. ACBK is interested in getting evidence about the success of the calving and assessing the condition of the calves and adults. Unfortunately, already on 11th the ACBK team confirmed the mass die-off, although at that time just a few hundred animals had died. The number of dead animals increased significantly during the following days, with the peak die-off happening on 15th and 16th of May. Already on 18th the complete saiga aggregation of more than 60000 animals was dead.

In Aktiubinsk region, almost 4000 animals have been found dead, in Akmola region 8500. In both regions, the die-off started later than in Kostanay region. A further die-off location in Kostanay region resulted in about 48000 dead saiga. All figures are provided by the responsible Ministry of Agriculture of the Republic of Kazakhstan.

Already shortly after the first dead animals had been observed, the local administration together with national governmental agencies organised a collection and burying of saiga carcasses. This happened in parallel with investigations about the cause for the die-off by veterinary services (local, regional and national). When burying the carcasses, they are counted. Among the dead animals are females and some males, which have been together with the calving females. But also calves die, maybe infected through the milk of their mother.

Such die-offs have been observed regularly in recent years, however, on much smaller scale. In 2010, about 12000 animals of the Ural population died in Western-Kazakhstan region. As likely cause for their death has been a too lush, moist pasture, which caused digestive problems (tympania) related with the development of toxins, which finally led to their death. A similar, but smaller die-off has been observed at the same place in 2011. In 2012, about 1000 animals of the Betpak-Dala population, further 900 in autumn 2013.

ACBK has been at all die-off sites and conducted investigations of the environment. It also supported the mission of Prof. Richard Kock from the Royal Veterinary College in London (RVC) to Kazakhstan in 2011, in order to review the findings of the die-off in Western Kazakhstan. Since 2012, ACBK has been cooperating with the Research Institute for Problems of Biological Safety (RIPBS), which was in charge of implementing a research programme on saiga health status and disease. The work included monitoring and investigation of the calving from 2012 to 2014 including taking blood samples of calves and investigating dead animals and also the sampling of animals in autumn, when more than 100 saiga were caught each year to get blood samples. This activity was furthermore used to deploy for the first time satellite collars to the Ural population and re-deploy collars in the Ustyurt and Betpak-Dala population. The Royal Veterinary College London was also a partner in this work, providing expertise and training as well as fieldwork support for the organisations from Kazakhstan.

Unfortunately, the veterinary services have been too late at the die-off site for all mentioned cases, which prevented them from taking samples of organs and blood from fresh carcasses.

The material, which they got, did not allow any detailed analyses and drawing definite, profound conclusions. Officially, pasteurellosis has been published as the reason for all die-off cases.

In 2015, ACBK was in contact with both partners RVC and RIPBS from the very beginning of the die-off, leading to a field mission of veterinary specialists from the RIPBS, who arrived at the site on 15th May. ACBK supported them in their efforts to obtain the needed samples. Both ACBK and RIPBS stayed at the die-off site until the end of the die-off on 19th.

The affected saiga show a clear weakness, even depression, and are not able to walk normally, partly even loose the coordination of their legs. They have diarrhoea and fluids coming from their mouth. At some point, they are not any more able to stand up, have difficulties to breath, and finally die. All these stages last only for a few hours. All symptoms have been thoroughly documented.

In order to support the investigation of this die-off case, the Ministry of Agriculture has asked the Conventions on Migratory Species (CMS) to send international experts to Kazakhstan, in order to get additional expertise into the country. On 22nd May, Prof. Richard Kock from RVC arrived in Astana and started together with ACBK a field mission to the die-off site in Akmola region, accompanied by the vice minister Nysanbayev. Sergey Khomenko from FAO and veterinarians from RIPBS joined the mission on 24th. The international and national experts were able to observe sick animals and investigate fresh carcasses, including taking the necessary samples. The international experts again gave useful advice for the veterinarians from Kazakhstan. The mission ended on 26th May. On 27th, the participants took part in the meeting of the ministerial working group, which has been established to discuss the saiga mass die-off.

The saiga die-off syndrome seems to be very special according to the involved experts. By now, they were only able to limit the potential causes to a list of known syndromes (haemolytic septicaemia, a bacteria that also affects buffalo; epizootic hemorrhagic disease, a viral disease transmitted by mosquitoes; or clostridia bacteria), but it might well be also something new, which has not been described so far. The laboratory analyses at RIPBS are underway and their outcomes will allow drawing reasonable conclusions in about 3 weeks. The situation in 2015 is different from previous years, since from the first day of the die-off the symptoms and progress of the event has been thoroughly documented by ACBK and veterinarians from RIPBS and RVC were at the site in time to conduct necropsies of fresh carcasses and obtain the needed samples. Therefore, the chance is big to really determine the reason for this dramatic die-off in Saiga antelopes.

ACBK has been involved in saiga conservation for almost ten years. One of the main projects is the Altyn Dala Conservation Initiative (ADCI), focussing on the Betpak-Dala population of saiga.

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