

Status Assessment of the Population of Striped Hyena *Hyaena hyaena* in Tajikistan



Cumulative Report for the Period 2016 - 2019



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Picture on the first page: Hyena from the community-based conservancy NGO „Obi Safed”

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Introduction

The striped hyena *Hyaena hyaena* is one of the four species of the hyena family Hyaenidae. Currently, the status of the population of hyenas in Tajikistan is not adequately known. The latest publication on hyenas by Abdusalyamov et al. (2008) mentioned that the last time the authors saw the species in 2005 in the Syr Darya valley in northern Tajikistan, and in 2008 they detected tracks of three hyenas and signs of hyena presence in the Gissar Valley. Another hyena had been found around the year 2000 as road kill at the road M41 near the Panj River, at border between Khatlon and GBAO regions (Toimastov, pers. comm. 2009).

Since 2007, there has been no reliable data on hyenas from the country. Tajik zoologists conducted multiple surveys to study the status of the population, but they could not find any signs of presence. For example, camera trap surveys (2013-2015) by the Institute of Zoology and Parasitology of the Academy of Sciences of the Republic of Tajikistan and the Institute of Forests in the Strictly Protected Area Tigrovaya Balka did not yield any positive results as no hyena was photographed on any of camera traps and during installation no signs of hyena presence have been seen, although historically the striped hyena was widely inhabiting the tugai (riparian forest) and drylands of Tigrovaya Balka and its surroundings.



Pic. 2-3 Photos from the Museum of the Institute of Zoology of the Tajik Academy of Sciences. These hyenas were collected on Sep 3, 1963 in the mountain range Kok-Tau, a spur of the Hissar mountain range. [Abdusalyamov et al., 2008].

In 2014 a video clip titled “Hyena in Tajikistan (from where? How comes?). Uyali, attack on livestock is repulsed.” appeared in the internet. On the video clip two or three dead striped hyenas were shown, allegedly killed by herders’ dogs. This video clip created a lot of interest among Tajik scientists and wildlife enthusiasts. But because of the lack of financial and human capacity there was no way to conduct detailed surveys across the historical range of striped hyena in Tajikistan.



Pic.4-5 Screenshots from the video clip. (https://www.youtube.com/watch?v=uCxai_TtOIU)

On his private initiative a nature enthusiast in coordination with experts from the Nature and Biodiversity Conservation Union of Tajikistan together with the Association of Nature Conservation Organizations of Tajikistan started an investigation. They detected the place where those striped hyenas were killed. They met local community representatives, who confirmed the presence of hyena in the areas they live, particularly surrounding the Aktau mountain range, and was shown signs of hyena presence.

These first signs triggered the above-mentioned organizations to initiate a first project for surveying and data collection across parts of the historical range of striped hyena in Tajikistan. Thanks to the support of Partner organizations: Zoological Society for the Conservation of Species and Populations ZGAP / Nature and Biodiversity Conservation Union NABU / Zoo Neunkirchen / Private Donors during 2017-2019 we collected new valuable data on the status of the population of striped hyena in Tajikistan.

Goals and objectives

The immediate goal of the initial stage of the Striped Hyena Project was to confirm the presence of the species in parts of its historical range in Tajikistan, and in particular in the spurs of the Aktau mountain range. The results should serve as a basis for the initiation of further conservation action.

Objectives:

- Determine the presence of striped hyena;
- Through camera trapping determine the abundance and distribution of the striped hyena;
- Identify major threats to the survival of the hyena population;
- Simultaneously identify associated species;
- Identify and propose the necessary measures to preserve striped hyena;
- Take initial steps to preserve the detected population of the striped hyena.

Study area

The surveyed territory is located less than hundred km to the south from Dushanbe, along the eastern slope of the Aktau mountain range. The surveyed territory is delimited in the west by the Esamol range, in the North by the Bukajatar range; in the east it is limited by the spurs of the Jetymtau mountain, and it includes the basin of the Eshmasoy stream. In the south, the territory is limited by the Khojakala channel. It includes the villages (kishlaks) Yangiyer, Navdi, Buston, Eshma (which is included in the Gozimalik District; in general, there are three villages with the name Eshma in this area). The administrative center is Obi-Kiik.

The relief consists primarily of loess hills, rugged by ravines. The height of the hills is not more than 1,500 m a.s.l., elevating them by up to almost 1,000 m above the ravines. The climate is dry, hot, rainfall varies with altitude. The average of annual temperature is 15-16°C. The dry period is 4.5-5 months. The area has more or less saline groundwater, with few springs, many of which dry up in summer. Winters are short and snowless.

Herbaceous plants are dominated by flax *Linum corumbulosum*, caper prickly *Capparis spinosa*, camel thorn *Alhagi* spp., rang sedge *Carex pachystylis* and bluegrass *Poa bulbosa*. The large umbelliferous plant *Ferula* is found in the foothills of Esamol and Gardaniushti. Pistachio *Pistacea vera*, almond *Amygdalys bucharica*, hawthorn *Crataegus* spp. and *Celtis caucasica* are found among tree species.

Urial *Ovis vignei* (possibly extinct in most or all of the immediate study area, but present in the Aktau Mountains), fox *Vulpes vulpes*, porcupine *Hystrix indica*, boar *Sus scrofa* (possibly disappeared in some

locations), badger *Meles meles*, steppe cat *Felis silvestris ornata*, wolf *Canis lupus* and golden jackal *Canis aureus* are the main representatives of larger mammals.



Pic. 6 Typical landscapes used by striped hyena.

A small part of the territory is occupied by rain-fed arable land. The local communities in these territories grow sesame and flax to produce butter, grows watermelons and melons, potatoes, peas and pistachios. Due to the limited water resources, in most cases rain-fed (non-irrigated) agricultural crops, especially melons, are widely planted on the territory. The ravines below the hills are irrigated lands used for intensive crop production, mainly wheat, cotton and vegetables.

In the eastern part of the territory there are almost no crops and the land is used as pastures. Locals, who are engaged in livestock, graze a part of their livestock year-round near the villages, but the main area is used only as winter pasture, because in summer the availability of water and forage resources is extremely limited. In the same territories, large livestock flocks of transhumant livestock herders move in the spring from the South of Tajikistan to the Northeast, and in the autumn in the opposite direction. Many flocks stay in these areas during the winter.

Methods

Work with literature:

First, we studied all available literature on the striped hyena. According to the literary sources, we obtained information on the shape and location of tracks, on the characteristics of excrements, on the characteristics of the skull structure and on the typical habitats. This allowed us to more specifically search for signs of hyena presence.

Local population survey and field visits:

Our studies of the status of the striped hyena populations began with a survey of the local communities. In the survey, priority was given to hunters and shepherds, as they are most likely to encounter wild animals. In addition to key informants, we also collected information from other local community members, drivers, collectors of pistachios, etc. The survey mainly addressed residents of the villages: Halkadzhar, Mehnat, Eshma, Yangier, Zafarobod, Navdi and Aksu.

According to the survey results, the most suitable places were identified where the hyena was most often encountered. We visited these places together with local community representatives who know the territory well. Field work was carried out to identify signs of hyena presence.

We searched the mountain slopes very detailed and scanned from upper slopes till lower slopes for any signs or trails. We were investigating lairs, although it is a little spooky. One researcher was brave and entered quite deep into a lair, and at one moment he heard growl of an animal, this made him turning back and never repeat such investigation. According to the literature, hyena would not growl but imitate state of death and can spend in such position quite long, once the danger leaves, the hyena returns to a normal state or immediately runs away from the danger. In the active lairs usually dwell a lot of fleas. After checking the lairs it was important to clean all clothes and put them under the sun for ca. 30 minutes. The corpse-heavy air and lumbering with animal corpses in the lairs making a spooky impression.

Other important places, which we were studding, are water springs. The area is generally extremely dry with very limited water resources, most of the water spring are salt and bitumen water with very bitter salty taste. Almost every water spring is full of leeches. Local hunters and herders say that the suffocation by leeches in wildlife and domestic animals is a very common here. We were searching for fresh pug marks of hyena on the wet ground, often it was hidden amongst wolf, jackal, fox, wild boar and livestock tracks.

Camera trapping:

The first photo traps were installed in the region in autumn 2016. Photo traps were installed at places indicated by local community hunters near the assumed hyena habitats: near burrows of wild animals similar to hyena lairs, on trails that had traces similar to those of the hyena, in places where, according to local hunters, hyena was resting. Camera traps were setup just for few nights.

In October 2017, 10 places were found with exact hyena signs, and 8 camera-traps were installed at 8 places (there was one camera at each place). The remaining 2 places were not used as the camera stations, because of the constant presence of pedestrians. This time camera traps were recording during the period of two weeks, and unfortunately two of camera traps were stolen and we could never find them despite the involvement of local people in the search. The fall season is a little tricky for camera trapping because of the high presence of pedestrians (herders, pistachio and wood collectors).

In July 2018 we installed camera traps at 9 places, but this time we stayed close to the camera traps and every morning collected them and installed them again at the next evening. Camera were setup just for few nights. It seemed that the hot and dry period of the year June-August is the best for hyena camera trapping surveys. During this season very few people walk around camera stations.

In March 2019, we installed camera traps at 18 places, each only for a single night. During this season it is rather easy to see the signs of hyena presence. But at the same time during this period of the year many people are walking in the same areas and collect spring herbs, mushrooms, herd livestock or go hiking.

Generally, camera traps were installed on the trails, roads, mountain ridges, narrow canyons, lairs. We used a mixture of fish maw and cotton oil. This liquid we prepared a few days before camera trapping and

put it into the plastic bottles. On each camera station we poured out the liquid, which is very stinky and attracts any wildlife from few meters.



Pic. 7 The field camera trap on the hyena trail.

Most camera traps were installed for a single night or a few nights, there is high risks to leave cameras for a longer period, unfortunately during 2016/2019 study years there were stolen in total 5 camera traps. The only way to study hyena is to put camera trap in the evening and then move from that place for a few miles and early in the morning return and pick up the camera. Through this way we had at least a chance to capture hyenas and not lost any camera traps.

Results

Work with the literature and related observations:

The geographical variability of the hyena, despite the fact that quite a lot of forms have been described, is insignificant. In any case, those "species" and "subspecies" that are described from the limits of the former USSR and from India and Iran are not scientifically approved, and throughout India, if not the whole of western and southern Asia only one form of striped hyena exists. The differences of the hyenas in Tajikistan from others, first of all adjacent, forms are not clarified to the necessary extent, and here we assume that it belongs to the nominal subspecies. In Tajikistan, therefore the Asian striped hyena, *H. h. hyaena* Linnaeus, 1758, exists.

According to Heptner and Sludsky (1972), the hyena paws have bulky pads that are characteristic of all hyenas and strong, but short and dull claws, as they were cut off at the ends. The feet of the front paws are much larger than the hind legs. The pug marks of the forefoot are 10 cm long and 8 cm wide, and those of the hind limbs 8 cm and 6 cm, respectively. When the animal is calm, the mark from the hind leg does not hit the front footprint (like a wolf, jackal, foxes), but usually is a little at the back or on the side from the front footprint. In the usual step, the distance between the marks of the front and hind legs is 55-63 cm. The marks from the front and rear paws usually show the imprints of four claws on each.

Our personal observation confirms mainly what Heptner and Sludsky found. However, by our observation claw marks are often not or poorly visible, and so the pug marks are a bit similar to those of felids. (Pic. 12)



Pic. 8 Pug marks of striped hyena, the claws are visible if the footprint is deep in the ground.

The striped hyena feeds mainly on carrion, eating mainly ungulate corpses at various stages of decomposition and still fresh bones, as well as cartilage, ligaments and bone marrow. Hyenas finely crush the tubular bones and swallow them. But sometimes in their stomach whole bones or large pieces of them are found. In summer, it also eats locusts and reptiles.

Hyena feeds not only on carrion, but also hunts dogs, lizards, rodents, locusts; eats steppe turtles, insects, as well as honey melons, watermelons, wild berries and various fruits.



Pic. 9 Carrion in the den of striped hyena (the skulls are from dogs).

Hyena prefer to co-exist closely with other large carnivores, such as tigers, leopards, wolves, jackals, because these carnivores leave a lot of remnants from their harvested prey, which is very attractive for hyenas.

In the spring hyenas actively eat locusts and turtles and during the winter they dig out turtles from under the ground.

In southwestern Tajikistan, this predator drinks from rivers, water canals, and where there is no fresh water, from water springs usually with salt water. Near those springs hyena usually stays during the hot part of the year. In winter and spring hyenas do not drink regularly and at this time they can be found 15-20 km from the nearest spring. Apparently, they make great transitions to the water.

In the past the striped hyena was living broadly across the tugai forests with lush tree-shrub vegetation. The mountainous ecosystem seems to serve as a secondary ecological niche for them. Reportedly hyena moved to mountainous areas due the development and irrigation of their historical habitats. They occur at altitudes from 300 to 1200 m, but do not go above 1500 m above sea level. In Tajikistan, the distribution range historically covered the southwestern and northern parts of the country. But in recent years the area of their range as well as their numbers greatly declined. According to the Red Book (1988) at the beginning of the 70s there were only about 20 hyenas in the Republic; at present, there is no exact information about the numbers. Also there is no trustworthy information on the presence of a hyena in the northern part of Tajikistan.

Several records of hyena were made from 2000 up to 2008, usually it was killed hyenas. The most recent publication by Abdusalyamov et al. (2008) reported that they found a lair with a fresh signs of hyena but this was only one single case.

Survey of the local population and field work:

As a result of the surveys of the local communities and field surveys, it was possible to obtain data on the presence of hyenas in the spurs of the Aktau range.



Pic.10 Hyena den.

We found the place where the video with two or three died hyenas was filmed. Residents of this corral confirmed that were killed by herder after they attacked livestock.

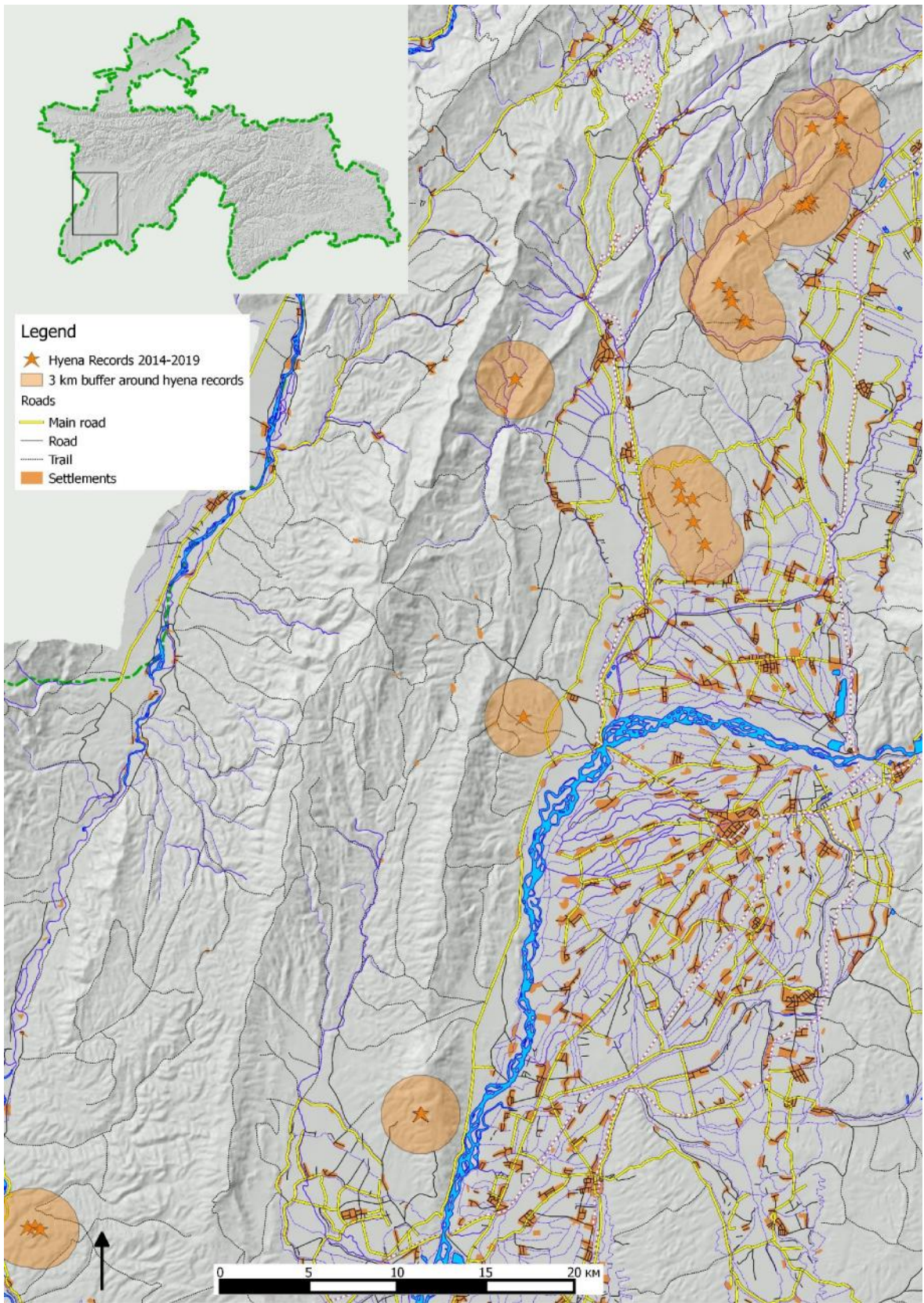


Pic. 11 a) Left side a screenshot from the You Tube video, b) at the right side the picture taken by field researchers.

One of the shepherds (Khoji Bobo from Yangiyer kishlak) pointed out to us the shepherd (Hazrat) from the village of Zafarobod (formerly this village was called Leninism), who caught several hyenas and indicated an approximate place where hyena puppies were caught. Hazrat confirmed that he really caught a young hyena near a den in 2013 (bones of skulls and other animals were scattered nearby) along with his partner Firuz, but then allegedly released the hyena back to the field.



Pic. 12 Part of the field team during the 2019 survey.



Pic.13 Map of our hyena records including reports by local people, presence signs and camera trap photos.

Camera trap results:

Photo and video records of striped hyenas

On December 4, 2016, the first ever photographic record of a live hyena in Tajikistan was captured by camera-trap in Babalchasu ravine (only one camera-trap was installed, pic. 18 and 19).

And in 2017, we caught three hyenas (Eshma) in two out of 8 camera traps on 2 locations working in total for 41 nights camera nights. 24 hyena pictures were taken. On one photo-trap a single hyena was photographed (Fig. 20), and on the second there were 2 hyenas, one behind the other (Fig. 21). 3 of 8 camera traps were stolen and not found any more, this left us with only 5 cameras which provided us with the data.

In Summer 2018, at 4 different places have been used 10 camera traps with the working period of 96 camera trap nights. This time there were captured 3 different hyenas were photographed.

In March 2019, have been used 14 camera traps. 2 different hyenas were captured by cameras in 2 different locations, out of 6 camera stations with in total 43 camera nights and 3 video cameras with the working period of 8 camera nights. 1 of these hyenas was filmed on a video camera. By our opinion, this is a pregnant female. The striped hyena emerged from the den and sniffed out the fish oil for a long time, as well as the infrared light of the camera trap.



Pic.14 Hyena lair.



Pic.15 Hyena is going out from its lair. Dec 2016.



Pic.16 One of the two hyenas moving one after another in Oct 2017.



Pic. 17 Single hyena (third) captured by camera trap in 2017.

All hyenas were photographed at night. This confirms that hyena is very active during the night time. According to the pictures, hyenas are in a satisfactory state, the captured animals look healthy and active. Young individuals were not observed. From the pictures it was not possible to determine age and sex, but all captured individuals are mature adult individuals, most likely one hyena was a pregnant female (pic. 25).



Pic. 18 One of the three hyenas captured by camera trap in 2018, carrying a dead lamb.



Pic. 19 Second of three hyenas, captured by camera trap in 2018, interested in a brush with fish oil and an attractive construction.



Pic. 20 Third hyena captured by camera trap in 2018.



Pic. 21 Pregnant (we believe so...) striped hyena just came out from the den, captured by camera trap in 2019.

Other species

In the range area of striped hyena other species were captured on camera traps, including gray wolf, red fox, wild cat, stone marten, badger, porcupine, and last but not most infrequent golden jackal.



Pic. 21 Gray wolf captured by camera trap.

Discussion

Still today the status of the population of the striped hyena in Tajikistan and southern Central Asia remains not entirely clear. Despite of some records collected during our study period 2016-2019 it is still very difficult to describe the status or estimate their rough number and range area. Our very rough guess, based on photographs, tracks, other signs and reports by local hunters, is that the number of hyenas might be about 30 individuals across their entire historical range in southeastern Tajikistan. To determine a more accurate number, more intensive and long-term surveys are required. At this time, given the high risk of theft of camera traps, it is difficult to carry out adequate surveys, but it is important to try to look for more hidden places and continue search for the hyena in other locations across the historical range.

The reason for the decline of the population of striped hyena can be direct persecution. It is considered by local communities and most urban societies that hyena is a dangerous predator and can kill people, especially small children, it is said that hyena is digging out buried people from under the ground and eat them. For sure in some cases hyena indeed may take away fresh born lambs from the livestock herds. Also hyenas cause damage by feeding on melon crops during the time when melons are sweet and juicy. In the late summer when water is extremely scarce and the melons are ripe, they attract hyena and serve them as an additional water source. This feeding on the melon crops creates additional conflict with farmers and generates a bad image for the local communities.

This is why hyenas will be followed by poachers and killed, or their den will be blocked by stones and hyenas die inside of the den. Another factor of mortality, according to local herders, are their packs of uncontrolled herders dogs, sometimes up to ten dogs at one herders camp. We could not verify if any and how many hyenas are killed by dogs, but there is certainly a high risk.



Pic. 21 Poachers often block the entrance to the dan and make impossible for Hyena go inside or outside.

Another likely reason for decline in the hyena numbers over larger areas is the general change in natural environment by the decrease in the number of wild ungulates, especially of goitered gazelle *Gazella subgutturosa* and urial. The extinction of large predators (Turanian tiger *Panthera tigris virgata* and Persian leopard *Panthera pardus saxicolor*) could be considered as another possible reason for the dramatic decrease in the hyena population. The striped hyena benefits from the presence of large predators since they create a lot of sources of carrion. Wolves most likely play an important role in providing hyena with the carrion. Intensive livestock breeding and carcasses of livestock, which died from disease, serve as important part of the diet of striped hyena.

Water sources are very limited in this region. These water places will be visited by various wildlife species that live in the vicinity. We think that the most suitable time to survey hyena is from end of May till mid of June. This time of the year is quite dry and most herders move to the north, also the herbs collectors do not walk anymore, because all herbs will dry out. This time of the year allows focusing on small areas close to the water springs, which hyena will visit in all cases. We think that during the dry period another large-scale survey is worth to conduct. The survey should take roughly 3 weeks and cover all key areas, but also not yet intensively surveyed areas.

We think that at this stage that the financial and human capacity will not allow to work in the wider landscape, but a few pilot territories could be selected and some conservation actions could be conducted. By better learning the ecology of striped hyena and testing various conservation actions we would learn a lot how to protect this new rediscovered species in the context of Tajikistan.

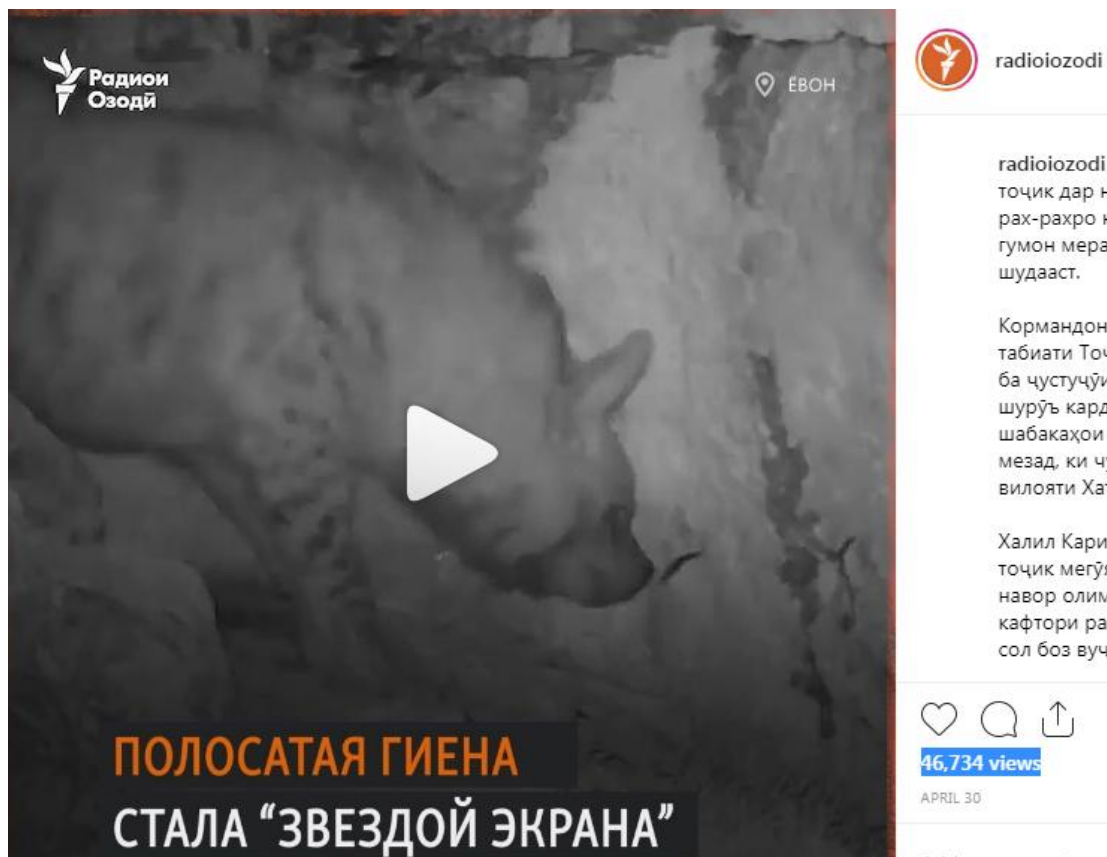
Our key concern is now to make sure that the effective and cost efficient conservation program are established in this region. Taking into consideration that the hyena range is very wide and includes a lot of mountain ranges, valleys, villages, districts it is difficult to determine the exact approach.

After the first detection of hyena in 2016 we brought local people with interest in wildlife conservation together. They established and formally registered the local NGO "Obi Safed". This community-based organization has achieved great results and made a great conservation impact in a very short time with

very limited resources. Without the help and support of the rangers of the NGO “Obi Safed” the hyena surveys most likely would be unsuccessful. It is critical to continue to support Obi Safed and guide them on conservation and management topics. Despite all achievements, this NGO was still not yet able to get officially assigned the rights to manage wildlife and use it sustainably (area-based game management and hunting rights). This barrier affects the motivation of rangers to continue investing their time for conservation, because currently most of the work is on volunteer base and no sustainable incomes so far exist. The project and ANCOT both do everything to assist Obi Safed in getting the rights to manage wildlife. Potential game species include wild boar and in urial sheep.

Potentially a meaningful conservation intervention in order to decrease the conflict would be to establish a couple of crops exclusively for hyenas or establishing some diversion feeding sided, in order to keep hyenas there and reduce movements to farmer’s crops, this similar practices successfully implemented for wild boars in Europe. Such diversion feeding might even be used for involving tourists in hyena observations and thus create some income for Obi Safed. Furthermore, the landscape in spring has some touristic potential when the pastures are lush green, wildflowers, steppe tortoises and other reptiles can be found and various birds can be observed.

After the survey 2019 and the amazing movie of striped hyena movie was captured and published in the Media – Obi Safer received a big recognition from the highest levels of Tajikistan. The Committee of the Environmental Protection requested all interested donors to help to protect the striped hyena in Tajikistan.



Pic. 22 Radio Ozodi has reported about hyena. Over 46.000 followers have seen this news.

Conclusions

1. The presence of striped hyena in Tajikistan is confirmed:
 - a. The population size might be roughly about 30 individuals across the historical range in southeastern Tajikistan;
 - b. We collected data on dens, which are used by striped hyena;
 - c. We collected data on its habitat use and ecological niche;
 - d. We learnt to identify the pugmarks;
 - e. We collected data on the primary diet of striped hyena.
2. Several location of presence of striped hyena across the historical range in Tajikistan identified.
3. Conflicts with farmers, shepherds and the local population have been identified, the reasons are determined:
 - a. Misunderstanding about hyenas – local communities think of them as tough predators, which actively attack livestock and kill children;
 - b. There might be small depredation on fresh born lambs by hyena, but some lambs they pick up might have died naturally;
 - c. There is some depredation on melons and water melons by hyenas.
4. Human caused mortality is mainly by shooting, trapping with leg-hold traps, possibly also blocking of dens when the hyenas are inside and from herders' dogs. So far no indication of poisoning was found.
5. First actions have been identified and partly already implemented that could positively affect the state of the population of the endangered striped hyena:
 - a. Village hunters mobilized into a conservation group;
 - b. Based on this group a community-based NGO "Obi Safed" established;
 - c. Village hunters turned into conservancy rangers;
 - d. First needed equipment provided, such a field clothing, binoculars;
 - e. First steps initiated to establish a wildlife management area, with the rights to prevent poaching and to hunt;
 - f. First steps made to develop ecological tourism - several tourism destinations created and currently advertised at international tourism market.

Future steps and recommendations

1. As a rare animal, hyenas should be preserved through sustainable and long-term projects with the involvement of the local communities and in particular traditional hunters.
2. To create interest among the local population in the protection of hyenas, the local public organization of traditional hunters Obi Safed should be further developed and expanded. The rights to protect and use wild animals need to be assigned to the local NGO; with the inclusion of strict hyena protection and restoration in their Management Plan. This shall provide protection, implementation of measures for the conservation of hyenas and the restoration of populations of other wild animals, in particular, urial and wild boar. According to the Management Plan, any solid hunting ground shall be obliged to invest 30% of its income in conservation measures for the conservation of wild animals, including non-hunting species. For example, revenues from sustainable hunting tourism on Bukhara urial in a given area could easily cover all the costs of protecting the hyena and compensate losses of domestic livestock, killed by hyenas and other wild animals. For successful restoration of hyenas and urial, the local community-based NGO should be incentivized by a sustainable harvest quota for urials within the framework of hunting tourism.
3. Conduct annual records of hyenas by photo-traps and other field methods of observing and recording wild animals.

4. Conduct a multiple meetings with communities living and interacting with striped hyena, learn from them and understand their views. Convince local herders and farmers not to kill striped hyena, but to protect them. This should be done by:
 - creating awareness about the positive role of hyenas and the options of preventing conflict;
 - by assisting them with conflict resolution;
 - involving them into the conservation project, creating ownership and allowing them to benefit (involvement of key stakeholders from communities as a rangers, wildlife managers, participation in wildlife surveys, benefits from ecological tourism, benefits from sustainable hunting).
5. Better understand the significance of hyenas being killed by herders' dogs. It would be desirable reducing the number of herding dogs, which also negatively impact on other wildlife management. But any attempts in this regard need to take account the real or perceived protective functions of herders' dogs. These could be maintained by keeping dogs, which are better suited for protection, but in lower numbers. Work with herders is required to find and implement solutions accepted by them.
6. One idea is to establish a few feeding stations for hyena and try to teach hyena to feed there. This should act as distraction from livestock and melon fields. At the same time it would allow showing them to the tourists. Revenues from tourisms would go towards salaries for conservancy rangers and by this turn hyena from a vermin species into a useful animal, which could create some tourism-based livelihoods for local communities.
7. Set up around key areas informative sheets with information about the conservation status of striped hyena and contact data of project experts to be contacted in cases of conflict.
8. New funding is required to accomplish points 1-6.

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