

## **Project Update: October 2013**

### **Abstract**

In July 2013, six locations in Russia and one in Ukraine were surveyed by mist-netting. Four teams (15 persons) worked by the same methodology. The bat capture effort was 68 mist-netting points and 639 mist-netting hours at total. 1376 individuals of 12 bat species were caught. Two young (♀&♀) *N. lasiopterus* were caught in different locations: Voronezhsky State Biosphere Nature Reserve, Voronezh region, Russia, and Yakovetskoe location, Chernobyl Exclusion Zone, Kiev region, Ukraine. The tissue samples for future genetic analyses were taken. The *N. lasiopterus* frequency of occurrence is very low, one individual per 600 bats of other species. The new records and all known information on distribution of *N. lasiopterus* confirm that the species is associated with huge areas of natural wetland of woodland habitats. The project will be continued in 2014.

### **Introduction**

The main aim of the whole project is to gather strong arguments for changing of IUCN status of *N. lasiopterus*. We aimed to evaluate the species to more height category that it has now. The field activity of 2013 year was target to check (to inventory) locations of *N. lasiopterus* inhabiting that were known in past in European Russia.

Initially, we set the objectives to inventory four locations in European part of Russia, but later we got additional support to the project from The Youth Activity Fund of The Explorers Club (USA) and added the other location in Russian. The activity of the project was closely relating to the other our ongoing project: "Monitoring of summer bat population in nature woodland area of Ukraine and Russian" (MSBP project), supported by The Bat Conservation International (USA) in 2013. We planned our activity basing on the IUCN Guide recommendation: "A taxon is presumed "extinct" when exhaustive surveys in known and/or expected habitat, at appropriate times (diurnal, seasonal, annual), and throughout its historic range have failed to record an individual." We chose only one short period of year – July, month where bat mist-netting is more effective (Gukasova, Vlaschenko, 2011). The July is month where bat breeding assemblages are more stable also. On the one hand we could do the inventory in July only but on the other hand we need 10 days as minimum for each location. We formed three field teams (15 people in total) and objective of each one was to check two locations in Russia, and the other team worked in frame of MSBP project (four people).

We needed in huge preparing work, because of we planned to use the same methods and approach for bat mist-netting. The mist-nets will be installed for all night long, each night we were planned to use 1-3 mist-nets. In each location the mist-nets must be disposed in several typical habitats of bat hunting and flying activity. We could not plan how many bats we could to catch, but we were planning to accumulate as minimum as 50 mist-netting hours. We hoped to catch as minimum 200-300 bats on each locality. We contacted with Reserves where we are planning to work, for selection of indeed locations where *N. lasiopterus* was recorded (captured, found, etc.). We trained students and young-naturalists,

and worked together on maps and satellites pictures. On each locality we selected area of 600-1000 ha where we will work.

We had two months for preparing of the expedition. On the one hand this period is enough for preparing, but on the other hand it was a very intensive period. We did several difficult activities at the same time, from signing of the agreements between Kharkov National University and the Russian Reserves to buying of a lot of field expedition minutiae. Expedition teams were gone to a way in a week's time from 25 June to 2 July 2013.

At the begging of the project activity we had too others objectives: 1) Field training on bat radiotelemetry in Hungary by teaching of Dr. P. Estok; and 2) Deep study of roost ecology of *N. lasiopterus* by radiotelemetry in Russian. There is known breeding center in Samara bend the Volga River (Samara region). Unfortunately we had problems with administration of Zhyguly Reserve which includes the Samara bend. Director of the Reserve wanted salary from the money of grand of Rufford SGNC. Such shocking requirements could not be used to perform under any reasons. Our Russian partners Dr. D. Smirnov and V. Vekhnik changed their plans about collaboration in the Rufford SGNC project; they did some telemetry research by themselves. We got a denial in collaboration in February 2013. We received a positive decision from The Youth Activity Fund in April 2013. Than we changed our planning in April and started to prepare for expeditions. We also did not manage the training course of bat radiotelemetry with Dr. P. Estok in 2013.

### Teams and field work progress

Here is the team composition and target areas in Table 1. The project research team was excellent, and the most success was that we involved many young people – students and young naturalists (Tab. 1). Kseniia Kravchenko took part in expedition to Voronezhsky Reserve at the first part of July and returned to Ukraine to participate in expedition to Chernobyl Zone. The other participant Ilga Sokolova took part only in expedition to “Smolensk Lakeland” National Park (MSBP project). She wanted to get experience in bat field research opportunities.

**Table 1.** Team composition, target areas, local partners and timing of field activity in 2013.

Team composition	Target area	Local partners	Time of field work
Anton Vlaschenko <sup>1</sup> , Ph.D., 31, the team leader; Kseniia Kravchenko <sup>1, 5</sup> , MSc. 23; Dmitry Kononenko <sup>3</sup> , 16; Tetiana Kalchenko <sup>4</sup> , Postgrad.St. 23.	Voronezhsky State Biosphere Nature Reserve, 51°54'N, 39°34'E Voronezh region, Russia	Elena A. Starodubtseva, Ph.D., Vice director on Scientific work; Natnlia B. Romashova, Ph.D., Chef of Scientific department; Alexander Myshyn, Ms., Research worker theriologists	25 June – 12 July

	Oksky State Biosphere Nature Reserve, 54°44' N, 40°54' E Ryazan region, Russia	Vladimir Yu. Ivanchev, Ph.D., Vice director on Scientific work; Elena Yu. Ivancheva, Ph.D., Senior Research worker	13 July – 28 July
Alona Gukasova <sup>1,2</sup> , MSc., Postgrad.St., 24, the team leader; Oleg Prilutsky <sup>1,4</sup> , MSc., Postgrad.St., 25; Alexey Parphilov <sup>3</sup> , 16; Elena Rodenko <sup>3</sup> , 14; Ilga Sokolova <sup>7</sup> , Ph.D., 30.	“Bryansky les” State Biosphere Nature Reserve, 52°26' N, 33°52' E Bryansk region, Russia	Elena Yu. Sitnikova, Vice director on Scientific work	02 July – 13 July
	*“Smolensk Lakeland” National Park 55°30' N, 31°58' E Smolensk region, Russia	Alexander S. Kochergin, Ph.D., Director	13 July – 28 July
Alexander Klochko <sup>4</sup> , St., 19, the team leader; Anna Suvorova, St., 20; Vitaly Gukov, St., 18.	vicinity of Krasnye Baky town, 57°14' N, 45°11' E Nizhniy Novgorod region, Russia	no	02 July – 10 July
	vicinity of Borok village, 57°40' N, 31°21' E Novgorod region, Russia	no	16 July – 26 July
Sergey P. Gashchak <sup>6</sup> , Ph.D., 51, the team leader; Kseniia Kravchenko <sup>1,5</sup> , MSc. 23; Alexander V. Naglov <sup>4</sup> , Ph.D., 51, Egor Yatsuk <sup>1</sup> , MSc. 27.	*Yakovetskoe location, Chernobyl exclusion zone 51°23' N, 29°37' E Kiev region, Ukraine	the same Sergey P. Gashchak	15 July – 02 August

1 – Interdepartmental research laboratory “Study of biodiversity and development of nature reserve management” (Ukraine); 2 – Kharkiv Zoo (Ukraine); 3 – N.P. Ewald Young Biologists Club of Kharkov Zoo (Ukraine); 4 – Kharkov National University (Ukraine); 5 – Wroclaw University (Poland); 6 – International Radioecology Laboratory of Chernobyl Center for Nuclear Safety, Radioactive Waste and Radioecology (Ukraine); 7 – Astrakhan State Reserve (Russia);

\* – activity in frame of MSBP project.



Pic. 1. Alexander Klochko's team in Novgorod region. From the left to the right: Vitaly Gukov, Anna Suvorova, and Alexander Klochko.



Pic. 2. Alona Gukasova's team in "Bryansky les" Reserve. From the left to the right: Alexey Parphilov, Elena Rodenko, and Alona Gukasova. Photo by Oleg Prilytsky



Pic. 3. The dawn after bat catching, Oksky Reserve. From the left to the right: Dmitry Kononenko, Tetiana Kalchenko. Photo by Anton Vlaschenko



Pic. 4. Anton Vlaschenko on the bank of the Chistoe lake, Voronezhsky reserve (location where *N. lasiopterus* was caught). Photo by Kseniia Kravchenko

## Results

In this report we integrate the results of two projects not by accident. We have two records of *N. lasiopterus* this summer (Tab. 2), one of them in the frame of this project and the other one by MSBP project. The first one was done in Voronezhsky reserve and it is the first record of the species in that locality for last 50 years. There were several records of *N. lasiopterus* in Voronezhsky Reserve, all of them are not far from the central homestead: 16 June 1936, 28 May 1941, 3<sup>rd</sup> May 1961 and beginning of May 1962. At total 14 individuals were captured. We did not capture the bat species in location that was known in past, but we recorded *N. lasiopterus* in new location, 6 km away from the know one. We can assume that there is breeding group of *N. lasiopterus* on the territory of Voronezhsky Reserve woodlands, because it is (6 km) not distance for such mobile bat species (Popa-Lisseanu et al., 2009).

The other record of *N. lasiopterus* in 2013 was done in Chernobyl Exclusion Zone in the same point where in 2009 (Vlaschenko et al., 2010). It is the real success! It was the second record

of the species for all territory of Ukraine. The young female was caught this year and the young male was in 2009, it could confirm that breeding group of *N. lasiopterus* exists here. Nevertheless *N. lasiopterus* has not been found in this location in 2010 when more than 400 bats were caught.

The research team of Dr. Smirnov caught 5 young *N. lasiopterus* in Samara bend in July. They telemetered one young individual for two weeks and found one hollow in lime tree (Smirnov, pers. comm.).

We did not find *N. lasiopterus* in Oksky Reserve and in “Bryansky les” Reserve. There were not old records of the species, 1987 two individuals in Oksky (Ivancheva & Ivanchev, 2000) and one in 1983 in “Bryansky les” Reserve (Sitnikova et al., 2009). At the same time these chance records of single individuals. The location (vicinity of Krasnye Baky town in Nizhniy Novgorod region) where big number colony of *N. lasiopterus* was recorded (Tab. 2) there is no this species now. In this location low abundance and not rich diversity of species were to determine. 80 years have passed from the moment of *N. lasiopterus* record, and forest cutting drastically changed the forest habitat.

The northernmost location was vicinity of Borok village in Novgorod region. We got information about record of *N. lasiopterus* in that location from Ukrainian ornithologist Victor Busel. He took part in the expedition of Russian ornithologists in the beginning of 1990<sup>th</sup> and they caught likely-*N. lasiopterus* by bird-net. On the one hand it is very north location for this species and we were not sure is it possible. But on the other hand this location is on the border of the Rdeysko-Polistovsky mire complex. It is the biggest marsh (more than 250 000 ha) in the Europe, preserved in its natural state till today (<http://en.polistovsky.ru/>). We hypothesized that *N. lasiopterus* could inhabit there, because the species is associated with huge areas of natural wetland (Popa-Lisseanu et al., 2009) of woodland (Estok, 2011) habitats. Unfortunately there was caught no bats in the vicinity of Borok village. There was still raining and cold weather during 10 days of expedition. It should be noted that sharp temperature drop in the second part of July this year equally impacted negatively on the bat mist-netting success in Smolensk and Novgorod regions and Chernobyl Zone (Tab. 2).

**Table 2.** Results of field work on the frame of the project in 2013 year.

Location	MN* points/ number of MN/ MN efforts (hours)	Total number of captured bats	Bat species list	Details of <i>N. lasiopterus</i> record
Voronezhsky State Biosphere Nature Reserve	11 / 14 / 88	639	<i>M. brandtii</i> , <i>M. daubentonii</i> , <i>M. dasycneme</i> , <b><i>N. lasiopterus</i></b> , <i>N. noctula</i> , <i>N. leisleri</i> , <i>E. serotinus</i> , <i>P. nathusii</i> , <i>P. pygmaeus</i> , <i>V. murinus</i> , <i>Pl. auritus</i>	♀ sad was captured on Chistoe lake 51°54'00" N, 39°33'34" E Old pine forest inside the Reserve woodland

Oksky State Biosphere Nature Reserve	13 / 19 / 100	435	<i>M. brandtii, M. mystacinus, M. daubentonii, M. dasycneme, N. noctula, N. leisleri, P. nathusii, P. pygmaeus, V. murinus, Pl. auritus</i>	-
“Bryansky les” State Biosphere Nature Reserve	9 / 14 / 88	155	<i>M. brandtii, M. mystacinus, M. daubentonii, N. noctula, N. leisleri, P. nathusii, P. pygmaeus, V. murinus, Pl. auritus</i>	-
“Smolensk Lakeland” National Park	11 / 22 / 118	52	<i>M. brandtii, M. daubentonii, N. noctula, P. nathusii, P. pygmaeus, V. murinus</i>	-
vicinity of Krasnye Baky town, Nizhniy Novgorod region	9 / 12 / 60	31	<i>M. dasycneme, N. noctula, V. murinus</i>	-
vicinity of Borok village, Novgorod region	6 / 8 / 45	0	-	-
Yakovetskoe location, Chernobyl Exclusion Zone	9 / 18 / 140	64	<b><i>N. lasiopterus</i></b> , <i>N. noctula, N. leisleri, P. nathusii, P. pygmaeus, V. murinus, Pl. auritus</i>	♀ sad was captured on little wooden bridge on the Ilya river 51°23'48 N, 29°37'00 E It is the same point where the species was captured in 2009 (Vlaschenko et al. 2010)
Total	<b>68 / 107 / 639</b>	<b>1376</b>	-	-

\* - MN – mist-nets



Pic. 5. *N. lasiopterus* from Voronezhsky Reserve.  
Photo by Kseniia Kravchenko



Pic. 6. *N. lasiopterus* from Chernobyl Zone Photo  
by Egor Yatsuk

### The media and internet coverage

The bat research results of our team were broadly covered on web-sites of visited Reserves and in one case was taken up and disseminated by the local press.

The information about record of *N. lasiopterus* in Voronezh Reserve:

[http://www.zapovednik-vrn.ru/news/news\\_140.html](http://www.zapovednik-vrn.ru/news/news_140.html)

Duplicates of this news:

[http://www.voronezh-media.ru/news\\_out.php?id=41718](http://www.voronezh-media.ru/news_out.php?id=41718)

<http://ecosocial.ru/news/ecology-in-regions/13/08/gigantskaya-vechernitsa-v-voronezhskoi-oblasti>

<http://news36.ru/161656>

<http://vrn.kp.ru/online/news/1487335>

Unfortunately they have not mentioned not only the Rufford Foundation but names of people from the research team. We will change that and will prepare and send new full press release.

The information about bat research in “Bryansky les” Reserve:

<http://www.bryansky-les.ru/news/744/>

The information about bat research in “Smolensk Lakeland” National Park:

[http://www.poozerie.ru/news/news\\_414.html](http://www.poozerie.ru/news/news_414.html)

The information about the expeditions and participation of on the young naturalists of Ewald Young Biologists Club of Kharkov Zoo on web-site of Kharkov Zoo:

<http://www.zoo.kharkov.ua/node/5527>

The summary of the expeditions on our Bat Group web-site:

<http://www.bat-kharkov.in.ua/letnie-ekspedicii-speczialistov-po-rukokryilyim.html>

## Conclusions

- 1) At the results of 2013 year we have inventoried the most locations (5) where *N. lasiopterus* was recorded in past in the North part of European Russia. We confirm two locations where breeding micro-population exists in forest-steppe and forest natural zones of Russia and Ukraine (Voronezhsky State Biosphere Nature Reserve, Voronezh region, Russia, and Yakovetskoe location, Chernobyl Exclusion Zone, Kiev region, Ukraine).
- 2) Two young female of *N. lasiopterus* were caught in 2013, the tissue samples for genetic analyses were taken.
- 3) The *N. lasiopterus* frequency of occurrence is very low, one individual per near 600 bats of other species.
- 4) The new records and all know information on *N. lasiopterus* confirm that the species associated with huge areas of natural wetland of woodland habitats.
- 5) Two objectives left unsolved in 2013 and the project will be continued in 2014.

## Literature

- Estok P. (2011). Present status of a rare bat species, *Nyctalus lasiopterus* (Schreber, 1780), in Hungary. *Hystrix It. J. Mamm. (n.s.)*. **22**, 99-104.
- Gukasova A., Vlaschenko A. (2011). Effectiveness of mist-netting of bats (Chiroptera, Mammalia) during the non-hibernation period in oak forests of Eastern Ukraine. *Acta Zoologica Cracoviensia*. **54A** (1-2), 77-93.
- Ivancheva E. Yu. & Ivanchev V.P. (2000). The bats of Ryazan Region. *Plecotus et al.* **3**, 85-93.
- Popa-Lisseanu A.G., Bontadina F. & Ibanez C. (2009). Giant noctula bats face conflicting constraints between roosting and foraging in a fragmented and heterogeneous landscape. *J. Zool. (Lond.)*. **278**, 126-133.
- Sitnikova E.F., Kruskop S.V. & Mishta A.V. (2009). Material on the bat fauna of Bryansk Region. *Plecotus et al.* **11-12**, 32-49.
- Vlaschenko A., Gashchak S., Gukasova A. & Naglov A. (2010). New record and current status of *Nyctalus lasiopterus* in Ukraine (Chiroptera: Vespertilionidae). *Lynx, n. s. (Praha)*. **41**, 209-216.