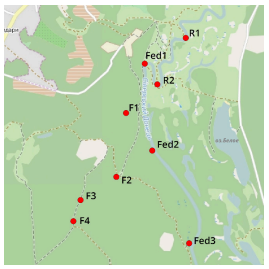
Aug 26, 2019

Method of inventory and monitoring of bat fauna in forests by using mist nets



DOI
dx.doi.org/10.17504/protocols.io.6q5hdy6

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OPEN ACCESS

DOI: https://dx.doi.org/10.17504/protocols.io.6q5hdy6

Protocol Citation: Alona Prylutska, Anton Vlaschenko 2019. Method of inventory and monitoring of bat fauna in forests by using mist nets. **protocols.io https://dx.doi.org/10.17504/protocols.io.6q5hdy6**

Manuscript citation:
1) Vlaschenko A.S. and A.S. Gukasova. 2009. Development of method for the inventory of species composition and population structure of bats. Nature reserves in Ukraine 15(1): 49-57. [in Russian] 2) Vlaschenko A.S. and A.S. Gukasova. 2010. Bat (Chiroptera) fauna and structure of assemblage of projecting protected area "Yaremovskoe" (Kharkov region). Nature reserves in Ukraine 16(2): 64-70. [in Russian with English summary]
3) Gukasova A., Vlaschenko V., Kosenkov G., Kravchenko K. 2011. Fauna and structure of bat (Chiroptera) assemblage of the National park "Smolensk Lakeland", Western Russia. Acta Zoologica Lituanica, 21(2):173-180.

Protocol status: Working
We use this protocol and it's working

Created: August 22, 2019

Last Modified: August 26, 2019

Protocol Integer ID: 27133

Keywords: bats, fauna inventory, monitoring, forest, mist-netting, monitoring of bat fauna, inventory bat fauna, common approaches for summer bat monitoring, bat fauna, summer bat monitoring, bat species, team in inventory bat fauna, bat survey, cheaper technique for bat survey, homilsha forest, oksky nature reserve, nature reserve, captures from roost, kharkiv region, species, voronezh nature resrve, detectors mist net, national park, fragmentary data about species richness, following monitoring, information about population structure, nature, brynsky forest, smolensk lakeland

Abstract

The most common approaches for summer bat monitoring in Europe are acoustic recording and captures from roosts. However, these methods provide only fragmentary data about species richness and abundance, without information about population structure. In order to obtain complex information about sex and age structure, in 2008 we developed method wich implies mist netting for a primary inventory and following monitoring of bat fauna in forests.
In short period of time (20 days) we revealed all bat species known for the territory of the National Park "Homilsha forests" (Kharkiv region, Ukraine).
The method described here was sucesfully used by our team in inventory bat fauna in Kharkiv region, Ivano-Frankivsk region, Chornobyl Exclusion Zone (Ukraine), Nature reserve "Brynsky forest", National park "Smolensk lakeland", Oksky Nature reserve, Voronezh Nature Resrve (Russia).
Compare to bat detectors mist nets are cheaper technique for bat surveys, but need more time input.

Troubleshooting

1 Choose the period for bats captures. We consider July as the most effective period for mist-netting when young individuals start to fly, but the autumn migration has not started yet.

2 Select study plot, about 400-500 ha with different habitats (e.g. lake,river shores, forest edges and closed forest roads). Choose 9 capture points (the distance between capture sites should be no less than 600 and could be up to 3000 m).

3 Use nylon mist nets (12 × 3 m, mesh size 15 mm). Install the net from sunset till 10–30 min before
sunrise. Stay near to the net during all night, bacause bats can escape from the net. Keep bats in textile bags near the net throughout the night.

4 Conduct two rounds of mist-netting at each capture site (two nights at every point). First 9 capture nights at 9 points, and then second round of the same 9 points. It will be 18 captures totally.

5 Record species, sex, age and identified breeding status of adult individuals of both sexes.
All animals after biometrical process release as soon as possible (at dark time, of cause).