harvest age ratio in winter range combined with our ring recovery rate estimates for ringed in European Russia woodcocks. We used Brownie et al. (1985) recovery rate parameterizations that were implemented in Program MARK (Cooch and White, 2018) because we were especially interested in estimates associated with hunter recoveries, and in calculation of harvest vulnerability of first-year relative to adult woodcocks. We estimated differential vulnerability of age classes to harvest using data from ringed birds and applied that to harvest age ratios. First-years were 1,7 times more vulnerable to harvest than adults, as it was determined from harvest age for wintering woodcocks during 1994–2016. Hence it appears that harvest age ratio is strongly biased in favor of first-years. The trend of age ratio for wintering woodcocks was considered declining in main wintering range since 1985.

Two published traditional hunting indices of abundance were analyzed. The ICP represents the number of woodcock shot per unit of effort during winter season in France, and the ICA represents the number of woodcock flushed per unit of effort. It is shown that ratio shot: flushed has strong negative long-term trend. Hence it appears that ICP does not provide a reasonable index of abundance.

THE CORRELATION OF THE SMALL AND MEDIUM-SIZED PREDATOR'S NUMBER WITH A NUMBERS OF SMALL MAMMALS IN SOUTHERN KARELIA

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There are stronger or weaker relations between numbers of predators and their main prey. In our early papers (Yakimova, 2007, 2012), which analyzed these patterns for South Karelia, it was shown that the dependence of the number of small and medium-sized predators on the abundance of mouse-shaped rodents is not clearly defined. Analysis of changes in the

number of predators and prey has revealed a weak positive correlation between the number of mouse-like rodents and that of ermines, foxes and polecats. When comparing the dynamics of abundance and species composition of rodents and insectivores in South and Middle Karelia (Yakimova, 2018), some differences were established, related to the nature of the prevailing biotopes in the study area. Numbers of shrews is consistently higher than the number of rodents in Middle Karelia, whereas in South Karelia there is a system of two groups of small mammals which leads to the dominance of either shrews or rodents (Ivanter et al., 2003; Ivanter, Yakimova, 2010). In Middle Karelia there is clear synchrony in the fluctuations of the number of Common shrew and Bank vole. This phenomenon has not been observed in other areas of Karelia (Ivanter et al., 2003; Kutenkov, 2006). The correlational analysis of the data on the number of ermine, martens, foxes and a polecats with the number of small mammals in Middle Karelia showed that there are no reliable links between the abundance of predator species studied and the abundance of both groups (rodents and shrews) and of the population of small mammals in general. This fact can be explained by the peculiarities of population dynamics of small mammals in Karelia, as well as the fact that mouse-like rodents are not the only prey for mentioned above predators.

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ABOUT THE SPRING SEX RATIO IN DUCKS IN THE "KIVACH" RESERVE (KARELIA)

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The sex ratio is an important demographic index. For ducks, there are quite a few publications on this topic, since spring hunting for drakes