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Estimating waterbird harvest in Russia

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According to national hunting legislation, nearly 80 species of waterbirds are game species in Russia. They mostly belong to the groups of geese, ducks, waders, rails and crakes. Sport hunting of waterbirds is widespread and popular activity in Russia which covers long autumn season (including late summer and early winter) and, in some regions, short spring season for shooting of duck drakes and geese. By official data for 2011-2013, the total hunting bag size of geese, ducks and Coot in Russia was around 3.1-3.5 million birds [1].

Waterbird bag data collection has been introduced in Russia since early 2000th and is still under further development and improvement. Currently this program consists of three separate surveys including 1) compiling of hunter's bag reports; 2) questionnaire and 3) species identification by photographs. First survey is an officially endorsed procedure while two others are research projects yet.

National Hunting Rules request that hunters report their waterbird bag sizes to the local authorities which in turn are responsible for compiling of rough data. Since many hunters cannot recognize reliably all waterbird species, this information is integrated at the level of the groups, such as "geese", "ducks" and "waders". Additionally, information from hunters is not always full and accurate because some people do not care about timely and proper reporting their bags. The State Center of Game Animals and Habitats (SCGAH) receives summarized data from local authorities for verification and compiling national estimates. We also correct this information with according to missing hunter's reports. However these results remain very general estimates and therefore require further clarification in terms of bag size and species composition. Two additional surveys are being developed by SCGAH since 2013 to meet these requirements.

Questionnaire of hunters covers spring hunting season and still includes only one species, Mallard. It is a special request to hunters about reports of numbers of shot Mallard males (drakes). Being voluntary this survey provides quite reliable information. During 2013-2016 we collected more than 5,000 reports from hunters from about 60 administrative regions of Russia where spring hunting of drakes was available. Based on hunting success of these voluntary respondents in relation to Mallard, the most frequently shot species, we are exploring opportunities to correct official statistics for spring hunting in Russia.

A new method of species differentiation of bagged waterbirds by photographs includes collection, examination and analysis of the digital pictures of hunted birds [2]. By the request, local game managers and hunters take pictures of shot waterbirds and pass them to the SCGAH. These photos are then being checked and examined in the office for identification of waterbird species. Sex and age determination is mostly carried out on ducks hunted in autumn. When abundant materials are available, it is possible to evaluate proportions of different species in the hunting bag.

Over the spring and autumn hunting seasons in 2013-2015, we collected above 3,300 photographs with waterbird hunting bag from nearly 60 administrative regions across Russia. Materials of 2016 are still being collected. Totally, 8,768 waterbirds were identified by species, including 1,870 specimens from spring seasons (duck males and geese) and 6,897 specimens from autumn season. The list of harvested waterbirds included one species of swans (Mute Swan), 4 species of geese, 22 species of ducks, 4 species of rails and crakes, and 8 species of waders. Spring bag consisted of 21 species, from which the Mallard, Greater White-fronted Goose and Garganey were the most harvested species. Autumn hunting bag included 35 waterbird species with highest numbers of the Mallard, Common Teal and Goldeneye. Among waders, Ruff was the most hunted species.

The sex was identified in 2,728 ducks shot in autumn, and the male/female ratio was as follows: 1,455 males (53.3%) and 1,273 females (46.7%). Among 1,368 autumn hunted ducks, at least 632 birds (46.2%) were young.

As quite simple and feasible procedure, collection of digital pictures with shot waterbirds is being integrated into hunting management across the country. Conducting of three surveys altogether can help to improve the estimation of waterbird harvest in Russia and hunting impact on populations.

- [1] Solokha A. (2016). Assessment of waterfowl resources and hunting use in Russia, Herald of Russian State Agrarian Correspondence University, vol 20 (25) (in press.). (in Russian) [2] Solokha A. & K. Gorokhovsy (2015). Survey of duck hunting bag in Russia by photographs // 4th Pan-
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