Important staging place for waders during seasonal migration in the Sea of Okhotsk region

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We have summarized all data on known places of concentration of waders during the preparation of a monograph on seasonal migrations of waders in the Sea of Okhotsk region. To do this, we have compiled the materials of our own research since 1978, all the published sources, and some unpublished data from other researchers. Spring migration of waders in the Sea of Okhotsk Region is very fast. Most of the coasts of the sea are still covered with ice at this time. Significant concentrations of waders are known mainly for the western coast of Kamchatka. Significantly higher number of important staging place for waders in the region is known for southward migration. The main stops located on lagoons and estuaries of west coast of Kamchatka, north-east coast of Sakhalin and Bays nearby of the Amur River mouth. So in Penzhina River Estuary (Kamchatka) 40,000 Dunlins is the peak count and 190,000 is the minimum total estimation. In Khayryuzova-Belogolovaya River estuary peak counts are 21,000 for Black-tailed Godwits and 20,000 for Great Knots. In Moroshechnaya River estuary the peak count for Black-tailed Godwits was 7,000. In Bolshaya Vorovskaya River Lagoon the peak count for Mongolian Plover was 1.300. In Odoptu Bay (Sakhalin) the peak count for Dunlin was 26,000 and for Red-necked Stint – 22,000. In Konstantina Bay (Khabarovsk region) peak count was 15,000 for Great Knot, in Ulbanskiy Bay – 26,000 also for Great Knot. We know other staging cites with smaller number of waders. But some of them also have international importance. And many parts of the Sea of Okhotsk coasts remain unexplored to the present time.

Theme: migration ecology
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Tracking of Latham's Snipe provides new evidence of Papua New Guinea as a key staging site on migration.

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Latham's Snipe is one of two *Gallinago* species confirmed in Papua New Guinea, the other being Swinhoe's Snipe. Both species are essentially identical in the field, and extreme care and perseverance is required to differentiate them based on observations alone. As a consequence, where the species overlap, sight-based records are often unable to be verified and the distribution of each species in overlap zones is difficult to determine. This is the case for Papua New Guinea, where Swinhoe's Snipe is considered the dominant species, and the majority of accepted records for Latham's Snipe stem from coastal locations near the capital of Port Moresby. Between 2016 and 2020, light-level geolocators and satellite transmitters were deployed to obtain migration information for the species. Two geolocator retrievals in south-eastern Australia indicated use of Papua New Guinea on northward and / or southward migration, although the resolution of the data were insufficient to determine stopover locations. Three satellite transmitter deployments (two in Canberra, Australia, and one in Hokkaido, Japan) have provided high resolution location information, and the first conclusive evidence of staging by Latham's Snipe in the Papua New Guinean highlands (between 1500-2500m ASL). The two Canberra-tagged snipe used modified wetlands and agricultural areas near human habitation in the highlands, while the Hokkaido-tagged snipe stopped on the Papuan coast near the border with Papua New Guinea. While these represent only a small sample size, they nevertheless demonstrate that Latham's Snipe distribution is significantly broader than officially documented. These findings also highlight the importance of this region for migrating snipe. Targeted investigation of the population extent, habitat use and priority areas for conservation in New Guinea is urgently required.

Bolshaya Vorovskaya River Lagoon, West Kamchatka as staging place for waders

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The Bolshaya Vorovskaya River lagoon is located in the central part of the western coast of Kamchatka. In July-September 2013–2019, we surveyed a relatively small area of the southern part of the 5 km long. In 2014–2018, we made 171 counts of waders at low tide. Over seven years of research, we have registered 36 species of waders, and their maximum number for one count was about 12,000 individuals in 2014, 17,080 – in 2015, 10,530 – in 2016, 7,310 – in 2017 and 14,430-in 2018. The international significance of the lagoon as a staging place for waders during the southward migration was confirmed for 9 species of waders. Spoon-billed Sandpipers observed there regular. Also lagoon is impotent for Mongolian Plover (maximum count reach 10 % of total estimation for *stegmanni* subspecies), Whimbrel (2.3 % of flyway population estimation) Red-necked Stint (1.4 %), Dunlin (1.0 %), Black-tailed Godwit (0.8 %), Great Knot (0.8 %), and Ruddy Turnstone (0.6 %). We also observed the number and direction of waders flying over the lagoon. So, in 2014, we counted more than 32,000 flying past Whimbrels, 28,000 migrated during five hours of one day. This counted number is about half of all Whimbrels for the flyway number according to published estimates. In 2014–2018 we also ringed and flagged 11,300 waders including 31 Spoon-billed Sandpipers. We received more than 300 recoveries and resightings from Japan, Korea, China, Taiwan, Philippine, Thailand, Australia, New Zealand and Oman. Observation of northward migration was conducted during May 2018. In spring waders mainly are flying past or stopped for shot time on the lagoon. This gave us the opportunity to summarize the counted number and get the total number of migrated waders. In total we counted 155,600 waders of 24 species including 124,000 Dunlins, 12,200 Red-necked Stints, 6,500 Great Knots, 3,100 Whimbrels, 2,600 Bar-tailed Godwits, 2,100 Mongolian plovers, 1,500 Black-tailed Godwits, 654 Eastern Curlews. 91 % waders migrated during two days 22 and 23 May.

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Khairusova-Belogolovaya estuary as a key place for long-distance migrating waders in the northern part of the Okhotsk sea.

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EAAF shorebird stopovers in Russia are poorly investigated. Since 2015, we are studying the largest wader stopover in the Okhotsk sea region. This stopover is located on the western coast of the Kamchatka peninsula, in Khairusova-Belogolovaya estuary.

We conduct annual field work here from the end of June till the middle of August to study southward migration of shorebirds. We also conducted Landsat 8 satellite images analysis and literature review. Our work is focused on the most numerous waders: Great Knots, Black- and Bar-tailed Godwits, and also on long-distant migrants Red Knots and Far-eastern Curlews. Since 2016 we started banding shorebirds, mainly Great Knots, with engraved leg flags.

We found that our study area is the largest mudflats on the Western coast of Kamchatka peninsula, 45-50 sq. km. These habitats host the largest wader`s stopover of the Northern part of the Okhotsk sea. For many species of shorebirds, this is the first stopover during the southward migration.

In total, we counted up to 28,000 of waders on the peak of migration of 32 species in our study area. Maximum counts of these birds were 23 000 for Great Knot, 9000 for Black-tailed Godwit and 4500 for Bar-tailed Godwit as well as up to 300 Red Knots and up to 500 Far-eastern Curlews.

Totally in 2016-2019 we banded 929 Great Knots with engraved leg flags. We received large number of resights from the whole wintering range of Great Knot as from the main Australian wintering grounds to less known United Arab Emirates and India wintering area.

Today, this important staging area does not have any protection status in Russia, neither it is included in the lists of key places for migrating waders. Management actions should be taken to protect Khairusova-Belogolovaya estuary. This high-quality stopover at the beginning of the southward migration is critical for the survival of shorebirds, and hence, it is an important part of bird protection through the whole EAAF.

Theme: migration ecology

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