Wader migration in Babushkina Bay, Russian Far East, June - August 1995

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Wader counts were carried out from mid-June to mid-August 1995 during an international expedition to Babushkina Bay, Russian Far East. The most numerous species were Red-necked Phalarope *Phalaropus lobatus* (5,000), Red-necked Stint *Calidris ruficollis* (1,000), Dunlin *Calidris alpina* (150), Lesser Sand Plover *Charadrius mongolus* (70) and Terek Sandpiper *Xenus cinereus* (55). Possible prey species in the tidal sandflats included annelids and crustaceans.

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INTRODUCTION

The North Pacific region represents a relatively small portion of the holarctic landmass, but it is one of the world's most important breeding areas for shorebirds (Gill *et al.* 1995). At least 67 migrating species or subspecies occur in the Russian Far East. The Sea of Okhotsk is the most important region for migrant waders in the Russian Far East during southward passage. However, chronology of migration of sexes and ages in most of the species is poorly understood, and only a preliminary inventory of wetlands of importance for waders was only carried out recently for the Russian Far East (Tomkovich 1996). Therefore one of the working groups of an international expedition to Babushkina Bay, Russian Far East, focused on the migration of shorebirds. The expedition consisted of teams from the Eastern Palearctic Wetland Research Centre, Magadan, Russia, and the University of Osnabrueck, Germany.

STUDY AREA

The study area was situated in the Babushkina Bay (59°13' N; 153°27' E), 150 km east of Magadan (Figure 1). It covered swampy as well as rocky coastal tundra surrounding a lagoon. This unique tundra belt extended up to 3 km inland. Pine *Pinus pumila* and alder *Alnus fruticosa* underbrush mark the transition to hills and mountains. The lagoon was separated from the open sea by a long and narrow spit except at the south-western end. Wide sand and gravel banks lay between the three lagoon supplying rivers (Meldek, Srednjaja and Buksendja). At low tide, sandy tidal flats in the lagoon emerged from the water. In mid-June the tidal flats were totally ice-covered; the last ice thawed in July. Usually higher high tides (average tidal range 2.5 m) alternated with lower high tides (average tidal range 0.2 m). The lower high tides normally did not even cover the tidal flats. The spit and the tidal flats appeared to be the most important staging areas for waders.

METHODS

Ground counts of waders, especially on the tidal flats (1 km^2) and the shores of the spit (9 km), were made at least once per five-day period over 63 days from 14 June to 15 August. The last regular count on the tidal flats took place on 13 August and on the spit on 11 August. Some additional observations near

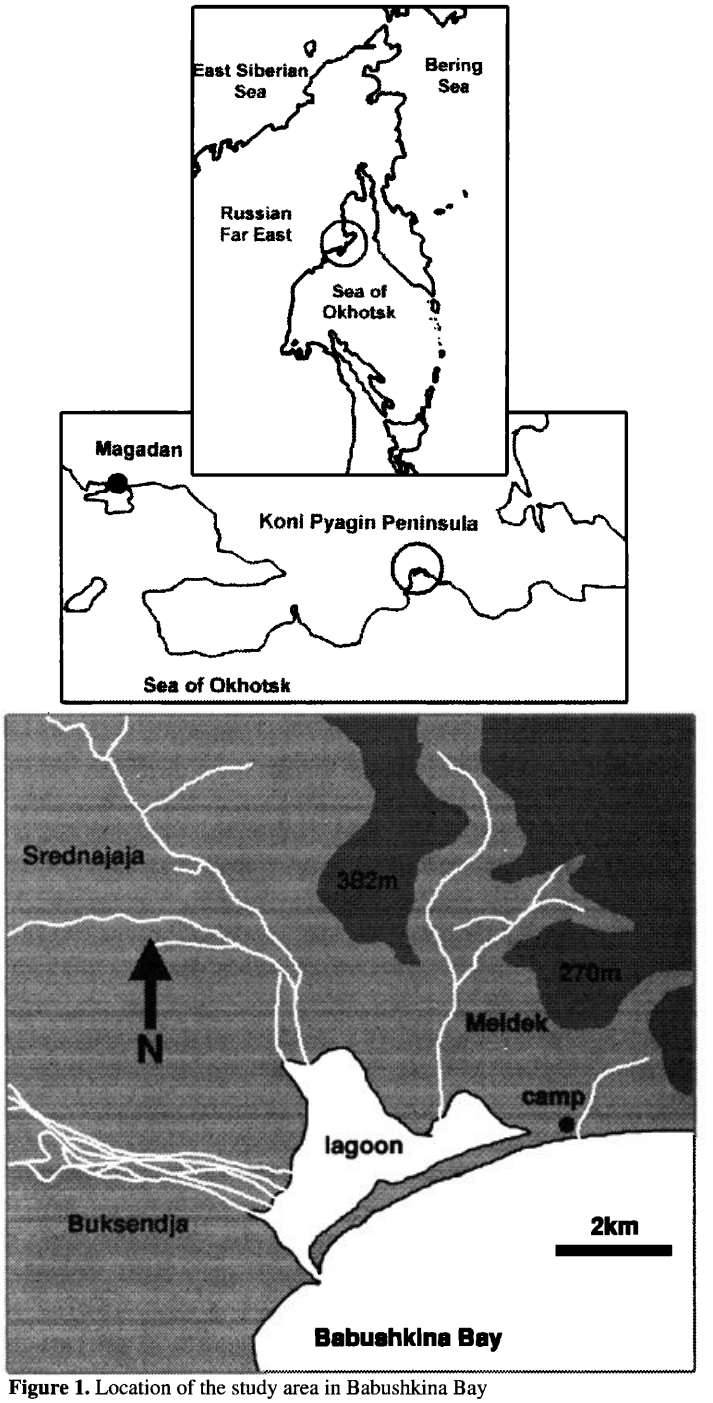

Figure 1. Location of the study area in Babushkina Bay

the camp were made later. On 10 and 12 August, 15 soil samples were taken to find out possible prey species on the tidal flats. A rigid plastic tube was inserted into the water and pushed through the substrate. The substrate within the tube was stirred and the invertebrates were removed using a fine sieve. The process was continued until no more items were found. The invertebrates were stored in 70 % alcohol for identification later. The density of individuals was not recorded.

SPECIES ACCOUNTS

Pacific Golden Plover *Pluvialis fulva*
Small groups with a maximum of 23 (10 August) were seen from 9 July to 12 August. The birds appeared mainly in the tundra.

Grey (Black-bellied) Plover *Pluvialis squatarola*
Three adults were seen roosting on the spit on 19 July.

Lesser Sand Plover *Charadrius mongolus*
The first peak of birds was observed from early to mid July with a maximum of 46 on 12 July. Unfortunately, there is no information about the age or sex of these birds. Between 13 July and 8 August only individuals or small groups of up to 12 were counted. From 9 August onwards, bigger flocks appeared in the study area, with a maximum of 70 birds on 10 August. Most birds were males and juveniles, and only very few females were seen (Figure 2). The birds occurred mainly on the spit or in the tidal flats.

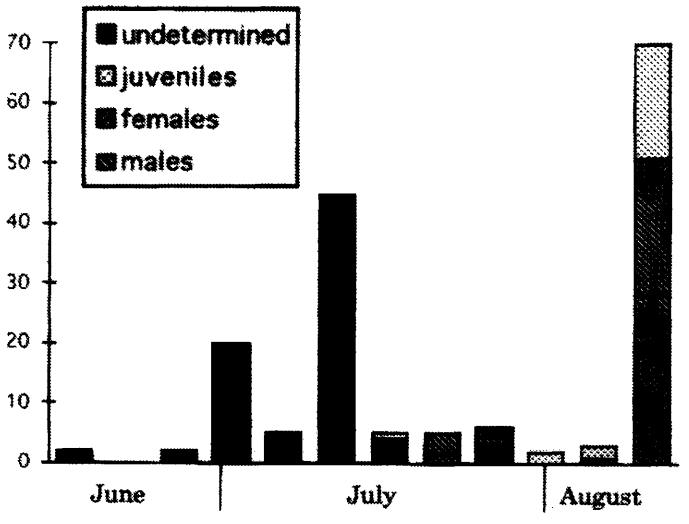

Figure 2. Dynamics of migration of Lesser Sand Plover *Charadrius mongolus* in Babushkina Bay 1995 (maximum per five-day period)

Black-tailed Godwit *Limosa limosa*
One adult was seen on 1 August and four juveniles on 10 and 12 August, all birds were on the tidal flats.

Bar-tailed Godwit *Limosa lapponica*
Two individuals were seen at the lagoon and at Buksendja on 25 and 26 July. Further birds appeared irregularly from the end of July to 13 August, with a maximum of 23 on 12 August. The first juveniles were seen on 10 August. Usually the birds stayed on the tidal flats. From 10 August onwards, only juveniles were observed.

Little Curlew *Numenius minutus*
No staging birds were observed. Migrating groups seen were 6 individuals on 21 July, 12 individuals on 9 August, 85 individuals on 10 August and 134 individuals on 12 August.

Whimbrel *Numenius phaeopus*
The first Whimbrel was seen on 27 July on the tidal flats. Up to 8 August only individuals or small groups with a maximum of four birds were recorded. In the week from 9 - 15 August, the number of passing and roosting birds increased with a maximum of 238 migrating and 40 roosting birds seen on 10 August.

Far Eastern Curlew *Numenius madagascariensis*
From mid-June up to the end of July single individuals or pairs were seen at irregular intervals. A breeding pair was located in the peat marshes of the Srednjaja valley.

Spotted Redshank *Tringa erythropus*
A group of five individuals was on the spit on 11 July and one single bird was observed between Srednjaja and Buksendja on 14 July.

Greenshank *Tringa nebularia*
Throughout the whole observation period, single birds and small groups (a maximum of 13 birds on 10 August) occurred irregularly in the study area. The first juvenile birds were seen on 8 August.

Green Sandpiper *Tringa ochropus*
Two individuals were observed in different locations at the delta of the Meldek river on 31 July and another at Buksendja on 1 August.

Wood Sandpiper *Tringa glareola*
From 3 August onwards, single birds and small groups were seen in all parts of the study area. On 4 August, a maximum of 58 birds was counted. Most birds stayed near shallow freshwater pools or rivers in the marsh area.

Terek Sandpiper *Xenus cinereus*
The first bird was seen on 3 July and the maximum of 55 was counted on 11 July. Until the end of the observation period, individuals and groups of up to 47 birds appeared mainly on the gravel beaches of the spit. The dynamics of migration are shown in Figure 3.

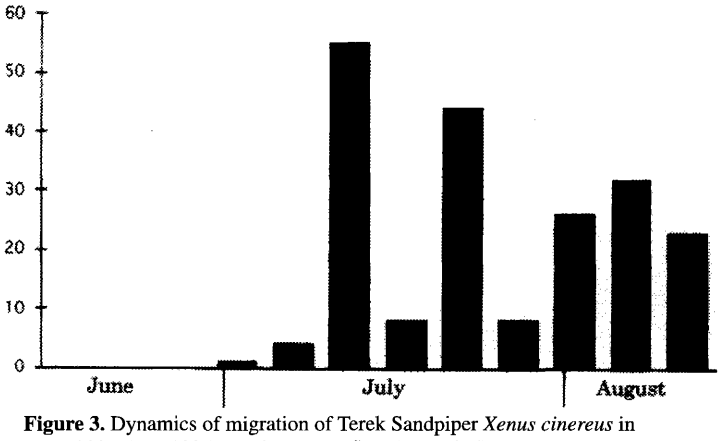

Figure 3. Dynamics of migration of Terek Sandpiper *Xenus cinereus* in Babushkina Bay 1995 (maximum per five-day period)

Common Sandpiper *Actitis hypoleucos*
Very small groups or single birds were observed from 17 July to 10 August with the maximum count (11) on 26 July. The first juvenile was seen on 2 August.

Grey-tailed Tattler *Heteroscelus brevipes*
From 10 July onwards, Grey-tailed Tattlers appeared in the study area. Single individuals and groups up to a maximum of 29 (8 August) were counted mainly in the saltmarshes.

Ruddy Turnstone *Arenaria interpres*
Scattered individuals or groups up to three were observed mostly on the stoney beaches of the spit from 12 to 27 July.

Red-necked Phalarope *Phalaropus lobatus*
This was the most numerous shorebird in Babushkina Bay. Birds foraged primarily on the surface of the Okhotsk Sea. About 1,000 adult birds were observed from 8 to 12 July on the open sea outside Babushkina Bay. On 2 August the first juvenile birds were seen and, on 5 August, about 5000 juveniles were feeding in the nearshore areas, where floating plankton concentrated on the surface. On 15 August, 650 juveniles were again close to the shore. In August small flocks also foraged on the lagoon and the tidal flats. Breeding birds were seen in the freshwater marshes around Babushkina Bay.

Pintail Snipe *Gallinago stenura*
Four birds were found scattered in the dense grass of the spit from 5 to 13 August.

Red Knot *Calidris canutus*
Single birds were seen from mid-July to mid-August. On 1 August, up to 22 individuals were feeding on the tidal flats. The first juvenile bird was seen on 8 August.

Great Knot *Calidris tenuirostris*
Small groups (up to 19 on 10 July) were seen from 16 June to 12 August mostly on the spit and the tidal flats. The first juvenile bird was seen on 31 July. One flock of four was found at a height of 100 m in a rocky area with scrub pine trees *Pinus pumila* on 11 August. On 21 July, 200 Great Knots were seen flying along the coastline to the west.

Sanderling *Calidris alba*
There were four records of single adult birds on the spit between 13 July and 3 August.

Red-necked Stint *Calidris ruficollis*
This was the most numerous wader species on the tidal flats, with a maximum of at least 1,000 individuals on 12 August (Figure 4). Larger numbers of adult Red-necked Stints arrived in late July (up to 195 on 27 July), whereas juveniles did not occur until 3 August. On 12 August, juveniles formed 96% of the total.

Little Stint *Calidris minuta*
From 11 to 13 July three adult Little Stints were observed on the spit and on 14 July, one adult on the shore near the tidal flats.

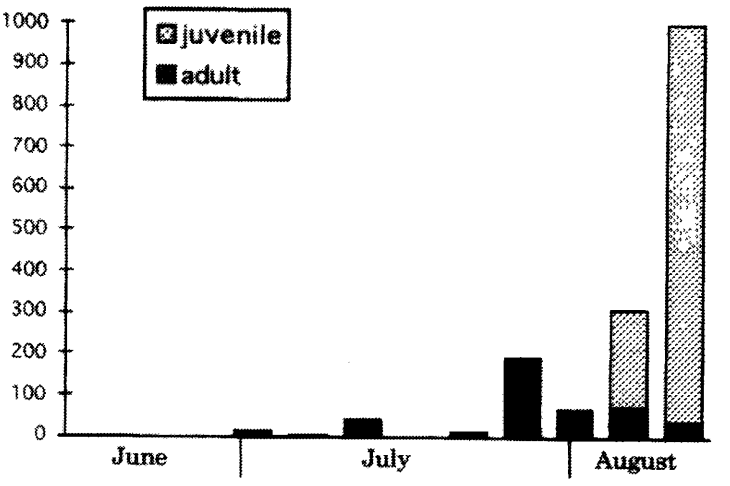

Figure 4. Dynamics of migration of Red-necked Stint *Calidris ruficollis* in Babushkina Bay 1995 (maximum per five-day period).

Temmincks Stint *Calidris temminckii*
Very small numbers were seen from 2 to 12 August. On 10 August, a maximum of seven birds was observed feeding in the tidal flats and the delta of the Srednjaja. The first juvenile bird was seen on 8 August.

Long-toed Stint *Calidris subminuta*
Over the whole period, Long-toed Stints occurred as single birds or in scattered groups (up to eight individuals on 8 August) on the marshy edges in the northern parts of the lagoon. Some breeding pairs were also found in this area.

Bairds' Sandpiper *Calidris bairdii*
One adult in breeding plumage was seen on 31 July in the Meldek delta.

Sharp-tailed Sandpiper *Calidris acuminata*
Two single juvenile individuals were seen on 9 and 10 August in dense vegetation on the spit and in the saltmarshes.

Dunlin *Calidris alpina*
The maximum number of 117 adults and 33 juveniles was counted on 8 August on the tidal flats (Figure 5). The first juveniles were seen on the tidal flats on 27 July, and their number increased to mid-August with up to 71 seen on 13 August. Breeding birds were found in wet grassland around the lagoon. These birds belong to the subspecies *C. a.*

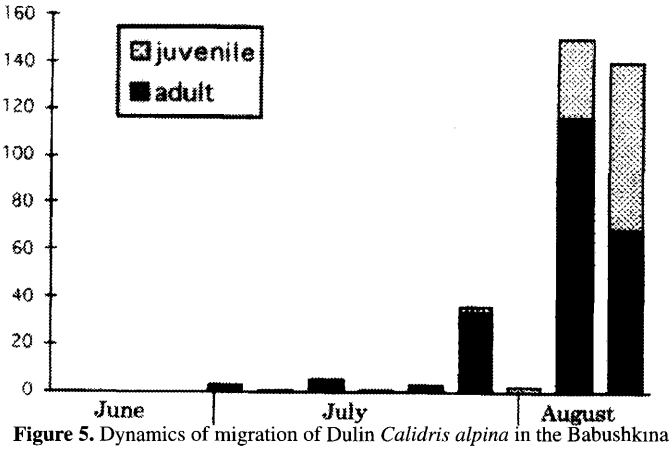

Figure 5. Dynamics of migration of Dulin *Calidris alpina* in the Babushkina Bay 1995 (maximum five-day period).

kistchinski (Tomkovich 1986; Gill *et al.* 1995).

Broad-billed Sandpiper *Limicola falcinellus*
One adult Broad-billed Sandpiper was observed at the tidal flats feeding with Dunlins on 27 July.

SOIL SAMPLES

The invertebrate fauna of the soil samples was dominated by crustaceans of many species. The possible prey species found in the samples are listed in Table 1.

Plathelminthes	
	Turbellaria
Annelida	
	Polychaeta
	Spionidae
	Nerine sp. (cf. *cirratulus*)
	Arenicolidae
	Abarenicola sp. (cf. *claparedii*)
Crustacea	
	Ostracoda
	Copepoda
	Malacostraca
	Lampropidae
	Lamprops sp. (cf. *beringi*)
	Gammaridae
	Anisogammarus (*Eogammarus*) *aestuariorum*
	A. (*E.*) *tiuschovi*
	Lagunogammarus setosus
	Talitridae
	Allorchestes moskvitini
	Mysidae
	Archaemysis sp. (cf. *grebnitzkii*)

Table 1 Possible prey species for waders in the tidal flats of Babushkina Bay.

DISCUSSION

Babushkina Bay is already known as a wetland of some importance for migratory waders based on the observations of Kistchinski (1968) but Black-tailed Godwit, Sanderling, Little Stint, Baird's Sandpiper and Sharp-tailed Sandpiper are not on his list for the Magadan Region. However, the Common Snipe *Gallinago gallinago* was not found in this study although this species has a broad breeding distribution in the Magadan Region (Tomkovich, pers. comm.).

The study area seems to be important only for Red-necked Phalarope (foraging on the sea), while the waders in the lagoon stopped very briefly and it is possible that many species did not stop at all. A probable reason is the sandy substrate of the tidal flats and the low density of annelids. Most high wader concentrations in the Sea of Okhotsk are on mudflats (Tomkovich, pers. comm.).

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