SATELLITE TRACKING OF NORTHERN PINTAIL SPRING MIGRATION FROM CALIFORNIA, USA: THE ROUTE TO CHUKOTKA, RUSSIA

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We trapped Northern Pintails (*Anas acuta*) wintering in the Central Valley of California during January 2000, and fit a sample of 25 adult females with back-mounted satellite-tracked radio-transmitters, also known as Platform Transmitter Terminals (PTTs) (25 g; Model PTT100, Microwave Telemetry, Columbia, Maryland, USA). We modified a PTT attachment method developed by S. A. Petrie (1996) for waterfowl, in which the PTT is positioned dorsally between the wings and attached snuggly with a Teflon ribbon harness (Teflon available from Advanced Telemetry Systems, Inc., Isanti, Minnesota, USA).

We obtained location data (decimal latitude/longitude) from the Argos satellite system of the French Space Agency via a preferential tariff agreement with the U. S. Department of Commerce's National Oceanic and Atmospheric Administration. We programmed each PTT to provide a location every third day after we released the ducks back into the wild at the point of capture.

One of our PTT-marked pintails, bird number 17553, ultimately migrated to eastern Russia to an area along the Kanchalan River (fig. 1). Initially, this duck spent about one month in the Central Valley (38.8–39.4°N, 121.5–121.8°W) after release, and then migrated to the Pit River in northeast California west of Alturas (41.4°N, 120.7°W), on 20 February. The next move was on 8 April to the Warner Valley (42.1°N, 119.9°W) in south central Oregon. On 3 May 2001, we recorded her in Alaska on the Coghill River Delta (61.0°N, 147.9°W) and the Kenai Peninsula (60.7°N, 150.9°W). On 6 May, we recorded the duck on Kukaklek Lake at the base of the Alaska Peninsula (59.2°N, 155.4°W), and 3 days later on the Nushagak River near Dillignham (59.0°N, 158.2°W). We noted her on the Yukon-Kuskokwim Delta near Kipnuk (60.0°N, 163.8°W) and Toksook Bay (60.4° N, 165.0° W) through 24 May, and then on 3 June 2001, we recorded 17553 in Russia. First landfall was near Mys Nizkiy (64.9°N, 179.4°E), and then ultimately she settled along the Kanchalan River (in the vicinity of 65.6°N, 178.9°E), where she spent the summer. On 2 September, №17553 moved to a new Russian location farther east at or near Mys Povorotnyy (65.2°N, 179.6°W) just southeast of Ozero Koynatkhun. On 5 September 2001, we recorded her over the Bering Sea (64.0°N, 176.7°W), then, on 9 September 2001, she was back in Alaska on the Yukon-Kuskokwim Delta near Kotlik at the Pastolik River mouth (62.9°N, 163.5°W). We continued to record this bird on the Delta until

31 October 2001. At that time, she either perished or the PTT stopped functioning. This date seemed to us to be quite late for pintails to still be in Alaska. Our other pintail hens, which still had functioning PTTs, had departed Alaska by 15 October, and one was shot on the Kenai Peninsula on 10 October on her way south from the Yukon-Kuskokwim Delta.

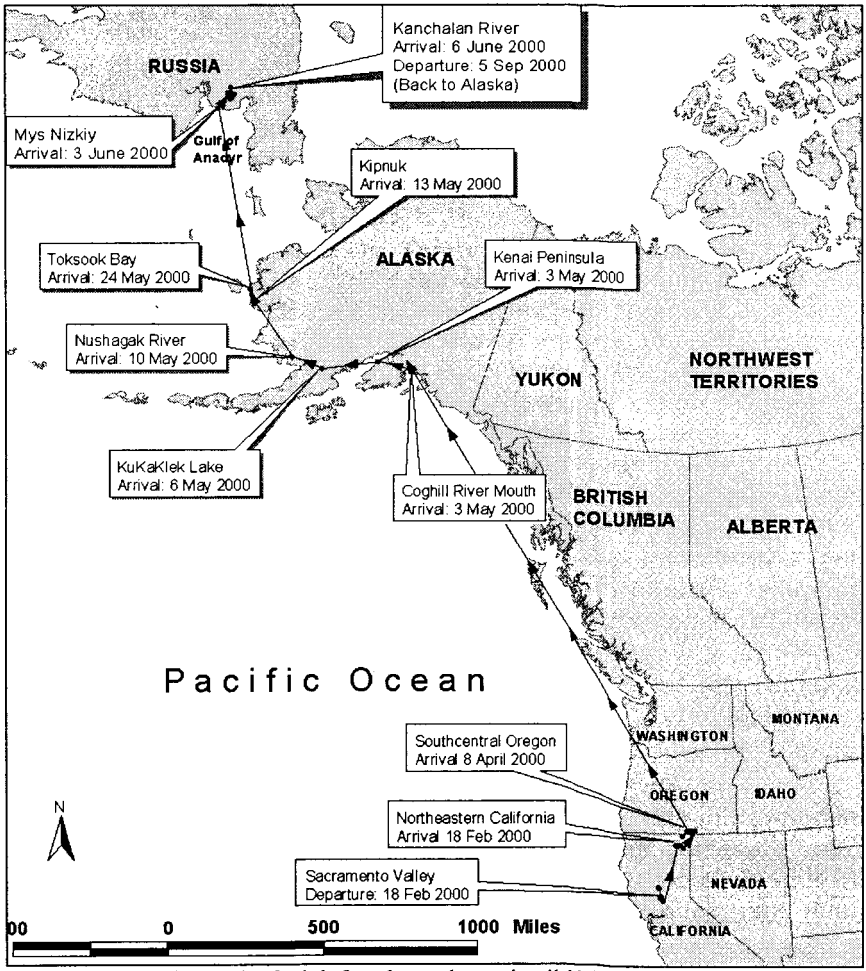

Fig. 1. The migration path of adult female northern pintail №17553 from the Sacramento Valley in California USA to Alaska, then to the Kanchalan River area of Russia, and back to Alaska USA

Рис. 1. Путь миграции взрослой самки шилохвости (№17553) из долины р. Сакраменто в Калифорнии через Аляску в долину р. Канчалан в России и обратно на Аляску

C. J. Henny (1973), using ringing data from pintails banded in North America during winter, determined that when the southern prairies of Canada and the northern Great Plains in the USA suffer drought, there was a noticeable increase in the number of ring recoveries in Russia during spring, principally in the Anadyr and Kanchalan River areas. He speculated the increase occurred because pintails continued northward beyond the dry prairies. This "Prairie Pothole Region, " historically has been the most productive breeding range of the pintail if wetland conditions are excellent. However, during drought, the area is bypassed by pintails (Smith, 1970; Derksen, Eldridge, 1980), and this occurred in spring 2000. C. J. Henny (1973) further determined that the degree to which recoveries increased in Russia over the average was greater for pintails ringed in the midcontinent area of North America (Central and Mississippi Flyways) than from those ringed on the West Coast (Pacific Flyway). He reasoned that this occurred because the Pacific Flyway must contain a large number of pintails that migrate directly to eastern Russia annually, irrespective of prairie conditions. C. J. Henny (1973) did not suggest a route for these birds, but pintail №17553 provides an example. This bird did not migrate through the prairie region; instead she flew to Alaska directly over the Pacific Ocean, then to Russia a week later.

Table 1

Period of time spent by Northern Pintails in Russia and their locations tracked by satellite transmitters in 2001

Таблица 1

Время и места локаций сигналов спутниковых передатчиков, которыми были помечены шилохвости в Калифорнии весной 2001 г.

Pintail PTT № птицы	Dates Даты локации	Latitude Longitude Координаты	Description of Location** Место локации
#17004	6June – 15 Sep	64.08 N 177.00 E	Russia, South of Anadyrskiy Liman
	Arrived 16 Sep	61.50 N 165.60 W	Alaska, Yukon-Kuskokwim Delta at Chevak
#17041	2 June – 30 July	67.45 N 175.75 W	Russia, Gora Valyanay, Vel'May River
	31 July – 10 Sep	67.00 N 175.00 W	Russia, Neshkan
	Arrived 11 Sep	62.40 N 165.00 W	Alaska, Yukon-Kuskokwim Delta at
#17552	5–9 June*	64.00 N 177.35 E	Russia, South of Anadyrskiy Liman

* (lost contact after June 9th)

**Specifically, "South of Anadyrskiy Liman" is east of the Velikaya River, south of the Goristaya River, and west of Laguna Tymna; "Gora Valyanay, Vel'May River" is northwest of Kolyuchinskaya Guba and west of Laguna Pyngopilgyn on the north side of the Chukotka Penninsula; "Neshkan" is on the north side of the Chukotka Penninsula on the spit of land separating Laguna Neskynpilgyn from the ocean east of Kolyuchinskaya Guba.

According to the data collected in 2001 3 pintails reached Russia in spring (55 marked originally). Following the path of the pintail in 2000, all 3 pintails in 2001 migrated first to southwest Alaska via transoceanic pathways from southern Oregon (Malheur National Wildlife Refuge, Chewaucan Marsh [private], and Warner Valley [private]). Then they moved on to Russia from there. None of these 3 pintails used the Kanchalan River area. Instead they arrived at Russian locations north and south of the Kanchalan (see table 1). Specific migration pathways can be viewed on the Pinsat web site at www. werc. usgs. gov/pinsat. Visitors to the site should click on the Past Season Summary hot link for 2001. "

Our study extends through the year 2003. As data accumulate over that period, we will be able to determine, with some confidence, the proportion of wintering pintails in California's Central Valley that ultimately migrates to Russia. Of those that do, we will determine the proportions that arrive via direct flights to Alaska, in contrast to those that pass through the midcontinent prairie regions first.

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СПУТНИКОВОЕ СЛЕЖЕНИЕ ЗА ВЕСЕННЕЙ МИГРАЦИЕЙ ШИЛОХВОСТИ ИЗ КАЛИФОРНИИ ДО ЧУКОТКИ

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В январе 2000 г. 25 шилохвостей были помечены спутниковыми передатчиками в Калифорнии. Передатчики (Microwave Telemetry) весом 25 г помещались на спине птиц между крыльями и крепились тефлоновой лентой. Точки локации передавались каждые три дня через спутниковую систему АРГОС.

Одна из самок шилохвостей (№ 17553) покинула место зимовки в конце февраля. Ее местоположение было зафиксировано затем 3 мая на Аляске, а 24 мая – в России. Эта птица провела лето в бассейне р. Канчалан и 2 сентября переместилась на восток в район оз. Коюнатхун. 5 сентября птица была зарегистрирована над Беринговым морем и 9 сентября – в низовьях Юкона-Кускоквима на Аляске, где передатчик прекратил работу 31 октября.

В 2001 г. три из 55 шилохвостей, помеченных спутниковыми передатчиками, достигли Чукотки. Две из них провели лето к югу от Анадырского лимана, а одна – на северо-восточной Чукотке, близ лагуны Нешканпильген.

Полученные данные позволили показать, что часть шилохвостей, зимующих в США, совершает перелет на места гнездования в России не через область прерий, как это считалось ранее, а вдоль побережья Тихого океана. Работы будут продолжаться до 2003 г. включительно.