

Third in a series of *Feature Articles*

(Printed with permission)

Satellite-tracking Helps to Discover Stopover Sites of the Threatened Oriental White Stork (*Ciconia boyciana*)Willem Van den Bossche¹, Peter Berthold², Yuri Darman³, Vladimir Andronov⁴, Mikhail Parilov⁴, Ulrich Querner².¹Belgische Natuur- en Vogelreservaten vzw, BirdLife Belgium, Kon. St. Mariastraat 105, B-1030 Brussels, Belgium.²Vogelwarte Radolfzell, Schloss Möggingen, Schlossallee 2, D-78315 Möggingen, Germany.³WWF Russia, Pologaya Str. 68-411, 690090 Vladivostok, Russia.⁴Khingana Nature Reserve, Dorozhny Pereulok 6, 676740 Arkhara, Russia.

The Oriental White Stork has unfortunately become a very rare species, with an estimated population of 2,500 to 3,000 individuals. This low population level is caused by the loss of breeding habitat, shrinkage of the breeding range, loss of wintering habitat and persecution along the migration route and on wintering grounds. The Oriental White Stork is a migratory species, migrating about 3,000 km from the breeding grounds in the Amur region in China and Russia to the main wintering ground in the Yangtse basin in China.

The individual migration pattern, choice and behavior at stopover sites and the behavior on wintering and summering grounds has only fragmentarily been studied until now. Therefore, Russian scientists and researchers of the Max Planck Research Centre Vogelwarte Radolfzell tagged Oriental White Storks breeding in the Amur region in Russia, in a first attempt to describe these unknown aspects of the migratory behavior.

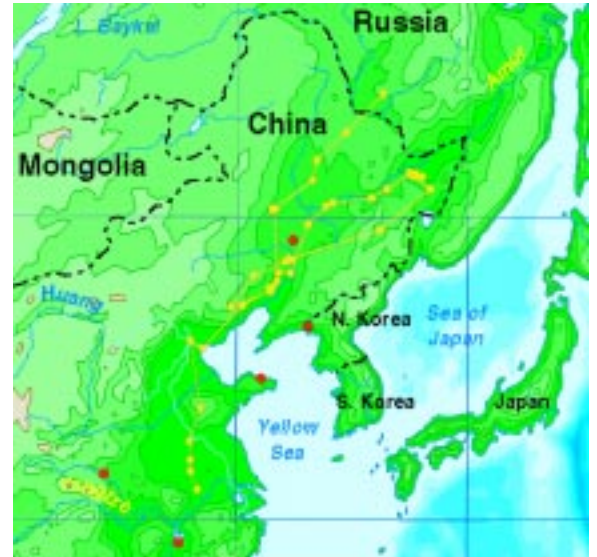
In the summers of 1998, 1999 and 2000, we equipped a total of six Oriental White Stork nestlings with 35 gram solar powered Microwave PTT-100 transmitters. We tracked all six storks on autumn migration and two of them on spring migration.

All tagged storks chose a wintering site situated southwest of the Amur region but they did not fly in a straight line from the breeding to the wintering site. Three tagged storks left the breeding grounds already in August and one in October and all storks stayed for a long time in the Amur, Nen Jiang and Songhua Jiang floodplain. The tagged storks started to migrate again in the second half of October and arrived between 2 and 21 November on the wintering grounds in the Yangtse basin.

To cover the 2,000 to 2,500 km in real distance from the breeding to their wintering ground the storks needed 49 to 89 days. Exceptional was the long migration period of no. 27187—it needed 103 days to cover 1,300 km. During this migration period the storks flew more than 50 km a day during 13 to 29 days, respectively. On autumn migration all tagged storks stopped their migratory flight for several days. The storks chose to fly towards different stopover sites, often not in the direct flyway from the breeding to the wintering grounds.

Stopover periods differed from 1 to 41 days. No.s 8883, 8885 and 27186 made a few stops for a mean period of 9 to 11 days. No. 27187 made two longer stops of 41 and 31 days. No. 27186 migrated in spring only 1000 km but without any stops. No. 8885 made six stops in spring for a total of 24 days.

The three tagged storks that reached the wintering area stayed at different sites in the Yangtse basin at the Han Shui River, Chao Lake, Hongze Lake and Poyang Lake in the Hubei, Anhui, Jiangsu and Jiangxi province, respectively. The tagged storks moved for several tens to hundreds of km during the winter period, which could mean that their main food supply, fish, is insufficient at these locations. The young storks left the



Route of Oriental Stork from the breeding grounds in the Amur region to the wintering grounds in the Yangtse basin. Red dots show where the birds died.



Oriental White Stork fitted with a 35 gram solar PTT



Photos courtesy of Willem Van den Bossche

Continued on page 4

Vogelwarte Radolfzell (Germany) and Willem Van den Bossche (BirdLife Belgium) have been studying the migration of White Storks from Europe to Africa since 1990! You can find some results of this satellite tracking program at <http://www.ooievaars.vlaanderen.be>