this as an excuse for doing his 'Superman' impressions upon city roof-tops! To finish, due to popular demand, Mike Moser re-opened discussions of the role of the WSG in conservation: research versus education and socio-economic roles. Rest assured, there is still plenty of research to be done, and WSG aims to continue its role of stimulating and coordinating international wader research efforts.

Overall, it was a thoroughly enjoyable weekend. It was particularly valuable to talk to wader workers worldwide, although I was slightly disappointed by the relatively low numbers of British participants. Perhaps the conference was advertised too late or maybe the workshop idea put some people off. However, it was well worth attending and a credit to the organisers - well done, and see you in Poland!!

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ABSTRACTS OF TALKS AND POSTERS AT THE WSG ANNUAL CONFERENCE, OATRIDGE AGRICULTURAL COLLEGE, SCOTLAND, 14 SEPTEMBER 1986

As announced elsewhere in this *Bulletin*, the talks and discussions given during the Workshop on the Conservation of International Flyway Populations of Waders are being published early in 1987 jointly by the Wader Study Group and the International Waterfowl Research Bureau (IWRB) as a Supplement to *WSG Bulletin* 49 and *IWRB Special Publication* No. 7. These papers and their abstracts are currently in preparation and will be published later.

Salinas and their use by waders in the Algarve, southern Portugal

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In March, April and May 1986 a group of undergraduate students from the University of the Algarve undertook preliminary studies of the biotic, chemical and physical characteristics of salinas/salt-pans in relation to their use by passage, wintering and breeding waders.

Regular counts of birds were made, the nests of breeding species were recorded, and information was collected on the depth, salinity, pH, temperature and concentration of the water, the presence of algae and saltmarsh vegetation, and potential prey species.

Three breeding and twelve non-breeding species of wader were recorded, and peak counts for three of the latter occurred as follows: Redshank *Tringa totanus* in March, Black-tailed Godwit *Limosa limosa* in late March/early April, and Dunlin *Calidris alpina* during the middle of April. Some species, *e.g.* Dunlin, showed a marked tendency to use the salinas only at high tide, but others, *e.g.* Kentish Plover *Calidris alexandrinus*, were present throughout the tidal cycle.

Dunlin on the salinas appeared to feed mostly on the gastropod mollusc *Hydrobia*, the Kentish Plover also took sand-hoppers and insects, and the main food item of the Black-winged Stilt *Himantopus himantopus* was the abundant brine-shrimp *Artemia salina*.

The characteristics shared by those salinas having the greatest numbers and species diversity seemed to be:

a) Overall depth of less than 15 cm, or an extensive shallow shoreline provided by low banks subdividing the salina,
b) Salinity of less than 35°/oo, i.e. less than that of sea-water, and
c) Oxygen level of over 15 ppm.

These conditions were mostly to be found in the type of salina known as a "tejo" - the first stage in the evaporation process.

Oystercatchers breeding in Aberdeen

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Since 1966 Oystercatchers *Haematopus ostralegus* have been known to breed within Aberdeen city where they have utilised the flat, pebble-covered roofs of modern buildings, but here as elsewhere this behaviour was dismissed as no more than an unusual breeding site.

After a preliminary survey in 1985 we decided to attempt a survey in 1986 to establish the extent of breeding within Aberdeen City. Breeding was found to be widespread throughout the city and was not confined to flat roofs of office blocks. Breeding was also proved on the roofs of houses, schools and hotels, in fact any flat roof covered in small stones appears to be suitable. Here the birds built a 'flamingo-style' mound into which they excavated a 'nest scrape'. Nests were also found on areas of undeveloped ground in what could only be described as 'unconventional' sites.

All these sites showed a close association with areas of mown grass lawns. On these areas of grassland Oystercatchers appear to feed mainly on earthworms where with their long bills they are apparently exploiting a previously little exploited food resource.

A total of 109 pairs were located, of which 97 laid eggs: 74 on roofs and 23 pairs on the ground. Chicks on roofs were fed mainly on earthworms carried up to the roof by both parents, while chicks on the ground appeared to feed themselves. Fledging success was difficult to assess due to the habitat, but from the behaviour of the adults it seemed that most pairs reared at least one chick.

This habit of breeding on roofs is now firmly established within Aberdeen and is showing signs of spreading to other areas, i.e. elsewhere in Scotland, Edinburgh, Inverness, Elgin, Lossiemouth, Stonehaven and Inverurie have all either had nesting proved or strongly suspected. In Tromso, North Norway, in 1985 we saw a bird on a roof giving high alarm and chasing Herring Gulls. It is clear that this habit is here to stay and is no longer to be thought of as a novelty. It remains only to wait and see if this habit will spread into other cities to the extent it has in Aberdeen.

The importance of Sierra Leone to waders on the East Atlantic flyway

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We report studies of Palaearctic wader species at coastal sites in Sierra Leone, 1981-84. Sierra Leone possesses four major sites (i.e. holding 10 000 birds), the Scarcies Estuary, Sierra Leone River, Yawri Bay and Sherbro River. Together these sies contain *c.* 250 km of mud or mud-sand foreshore, with a muddy intertidal zone in excess of 16 000 ha, excluding extensive intertidal sand which is less used by waders. The Scarcies hosts up to 10 000+ Black-tailed Godwit *Limosa lapponica*, while the Sherbro River is Sierra Leone's top site for Knot *Calidris canutus*. We give detailed estimates of the wintering populations of each species at the Sierra Leone River and Yawri Bay. We estimate that coastal Sierra Leone holds a total wintering population of 180 000 Palaearctic waders. Most species are winter visitors, arriving August-December and remaining until April-May, with adults present for *c.*8 months. Several species show passage peaks, mainly in autumn, probably representing birds going to southern Sierra Leone or small sites in neighbouring countries to the southeast. Sierra Leone does not appear to be on a major passage route. Individuals of several species oversummer in Sierra Leone: mainly first-summer birds which do not assume breeding plumage.

Wader populations in Sierra Leone are under no immediate threat. Hunting and disturbance have negligible effects on waders. Extensive mangrove clearance has occurred at one site but this appears to have had little effect on the waders and mudflats, and has increased the population sizes of some species wintering in the rice paddies which replace the mangroves.

The ICBP/IWRB Campaign for the Conservation of Migratory Birds

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ICBP is devoted entirely to the conservation of birds and their habitats. Founded in 1922, it pioneered the cause of nature conservation worldwide. Since then, ICBP has grown into a federation of over 300 member organisations representing some 10 million people in 100 countries.

ICBP's founders, prominent bird enthusiasts in Europe and America, were among the first to realise that only international efforts could protect birds along their migration routes. Today, a professional team of conservation experts carries out ICBP's mission around the world.

Based on the achievements and wealth of experience gained during the last 60 years, in 1983 ICBP started to design and implement through its network a streamlined and co-ordinated campaign spanning the world's major migratory flyways. Individual framework plans will eventually be prepared for each of three main regions: the Americas, western Eurasia/Africa, and eastern Asia/Australia. Each plan will propose those activities and projects that are required to maintain and protect migratory bird populations in their breeding, wintering and stop-over places. A conservation demonstration plan for the African/Palearctic flyway system was initiated in 1984 in close co-operation with the IWRB.

Secondary moult of Golden Plover populations wintering on the Firth of Forth, Scotland

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Samples of wintering Golden Plovers were caught at two sites 8 km apart on the Firth of Forth. As found in previous studies most adults had a number of secondaries which had not been moulted in the previous autumn. Most birds had replaced secondary feathers one and eleven, but the central feathers were replaced less frequently.

There was a significant difference between the pattern of feather replacement at the two sites. At one site the pattern was similar to that previously found in the Netherlands. At the other site the pattern was similar to that found in a previous study in Denmark.

A sample of 71 birds caught in late February contained many birds which were already moulting into summer plumage. Those with less than 25% summer plumage had shorter wings than those with more than 25% summer plumage. The latter group were thought most likely to be males, with females which have shorter wings moulting into summer plumage later. The 'male' group had, on average, moulted all secondaries every other year. The 'female' group had, on average, moulted the central secondaries only every three or four years. Differences in the proportions of secondaries moulted between the two sites on the Forth were thought to be due to different proportions of sexes in the two populations. Possible reasons for these sex differences were discussed.