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JESS INTERIM REPORT: SECOND SURVEY  
OF PALEARCTIC MIGRANT BIRDS IN  
SOMALIA'S MIDDLE AND LOWER JUBBA VALLEY

JESS Report No. 25

Prepared by:

David Pearson, Ph.D.  
Associates in Rural Development, Inc.  
110 Main Street, Fourth Floor  
P.O. Box 1397  
Burlington, VT 05402  
U.S.A.  
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## ACRONYMS

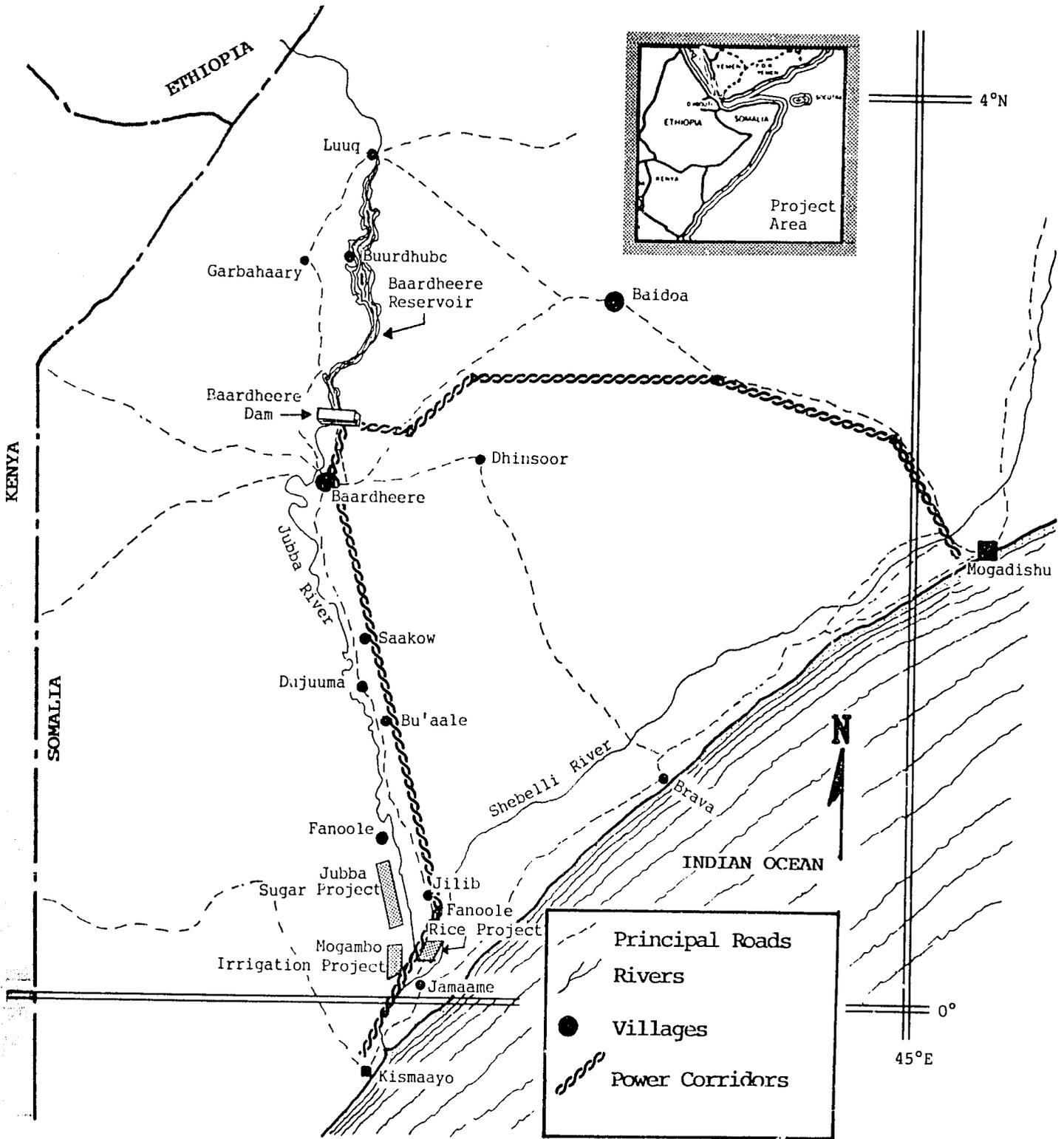
AID Agency for International Development, Washington, DC  
ARD Associates in Rural Development, Inc.  
GSDR Government of the Somali Democratic Republic  
JESS Jubba Environmental and Socioeconomic Studies  
JUDAS Jubba Development Analytical Studies  
MJVD Ministry of Jubba Valley Development, GSDR  
USAID U.S. Agency for International Development, Somalia

## PREFACE

The Juba Environmental and Socioeconomic Studies (JESS) are a three-year program of river-basin investigations in southern Somalia. JESS is part of a larger project, Juba Development Analytical Studies (JuDAS), which is a cooperative effort of the U.S. Agency for International Development (USAID) and Ministry of Juba Valley Development (MJVD) of the Government of the Somali Democratic Republic (GSDR). Technical assistance and project management for JESS are being provided by Associates in Rural Development, Inc. (ARD), of Burlington, Vermont, under AID contract number AFR-0134-C-00-5047-00.

This interim report is one of many that will be produced during Phase II of JESS, a two-year period of intensive field studies. It was prepared by Dr. David Pearson, an ornithologist based in Nairobi, Kenya, and describes his observations of birds in the Jubba Valley (see Figure 1 on the following page) between 1 and 15 November 1987.

Figure 1. Area of the Baardheere Dam Project and the Jubba Valley Development



## I. SUMMARY

Between 5 and 12 November 1987, a survey of Palearctic migratory birds was conducted along the Jubba River floodplain and peripheral woodlands from Kismaayo at the coast of southern Somalia up river to Fanoole Barrage.

Approximately 20,000 migrant wading birds were estimated inland in the valley below Jilib. About half of these were on irrigated rice projects at Fanoole and Mogambo, with the rest at Dhesheeg Waamo or scattered among the remaining small dhesheegs and muddy pools in cultivated lands. The primary species were the wood sandpiper (*Tringa glareola*) and the ruff (*Philomachus pugnax*). Few wading birds were seen on the deeper flooded areas along Fanoole Barrage. Wading birds were generally more numerous and encountered lower in the valley than during a previous survey in March 1987.

Eleven Palearctic land bird species were encountered frequently. Numerous nightingales (*Luscinia megarhynchos*) and smaller numbers of sprosser (*L. luscinia*) observed in floodplain thickets from Jamaame southward were mainly in passage. Spotted flycatchers (*Muscicapa striata*), Eurasian cuckoos (*Cuculus canorus*), red-backed shrikes (*Lanius collurio*) and northern wheatears (*Oenanthe oenanthe*) found mainly on the floodplain were also in passage. Pied wheatears (*O. pleschanka*), Isabelline wheatears (*O. isabellinus*), yellow wagtails (*Motacilla flava*), Eurasian swallows (*Hirundo rustica*) and blue-cheeked bee-eaters (*Merops persicus*) were probably newly returned passage birds.

A variety of other passage land birds was recorded, but in very small numbers. Wintering rufous bush chats (*Cercotrichas galactotes*) and Upcher's warblers (*Hippolais languida*) had not yet returned to the peripheral bushlands.

## II. INTRODUCTION

This interim report is part of Phase II of JESS, which includes a series of field studies that are being conducted over a two-year period until March 1988.<sup>1</sup> Phase II focuses mainly on primary data collection in Somalia's Jubba Valley. Phase III will consist of analyses of Phase II data and other secondary studies. At the end of Phase III, JESS will deliver the following to USAID and MJVD:

- socioeconomic and environmental assessments of the Jubba Valley that fit into a process for developing a master plan for valley development;
- a realistic, long-term system for environmental and socioeconomic monitoring by MJVD; and
- river-basin planning and development guidelines for Somalia.

Existing studies of Somali birds indicate that approximately 380 species of birds are known in southern Somalia's Jubba Valley.<sup>2</sup> These include approximately 20 forest species confirmed in Somalia for this region alone and some 30 species of large water birds. The list also includes over 60 species of Palearctic migrants that winter in or pass through the valley and have breeding origins in northern or western Asia. A previous JESS ornithological survey in the lower Jubba Valley added 14 new records for the valley.<sup>3</sup>

The proposed siting of Baardheere Dam on the upper Jubba River and associated agricultural development projects in the lower Jubba Valley will lead to changes in bird habitats and population densities. In view of the international conservation aspect of migratory bird protection, JESS has included two ornithological surveys of the lower Jubba Valley. The first survey was completed by the author in March 1987. This report summarizes results of the second survey commissioned in early November 1987 (see Appendix D for the Scope of Work).

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<sup>1</sup>See PHASE I REVIEW AND PHASE II WORK PLAN FOR THE JESS PROJECT, ARD, Burlington, VT, 31 July 1986.

<sup>2</sup>See J. S. Ash and J. E. Miskell, BIRDS OF SOMALIA, Scopus Special Supplement, 1983.

<sup>3</sup>See David Pearson, JESS INTERIM REPORT: SURVEY OF PALEARCTIC MIGRANT BIRDS IN SOMALIA'S MIDDLE AND LOWER JUBBA VALLEY, JESS Report No. 19, ARD, Burlington, VT, October 1987.

The purpose of the March survey was to determine the importance of the area as a wintering ground for Palearctic migrants. The main group of migrants present were waders and passerines with breeding origins in northern and western Asia, respectively. A heavy passerine migration is known to occur during November through eastern Kenya and there is then more habitat available to wading birds on the Jubba floodplain than in March. Thus, this second survey in November was planned to coincide with the southward Palearctic migration.

### III. METHODOLOGY

Surveys of migrant water birds were carried out from Kismaayo up to Fanoole as follows.

First, the largely flooded Fanoole and Mogambo Rice Projects were visited and surveyed extensively. Approximate estimates of wading bird numbers were obtained by recording abundances on paddies at different stages of flooding and rice growth and multiplying up densities.

Then, as many areas of natural inland flooding as possible were located, and complete counts or sample counts of wading birds and other water birds were made. Sites included:

- small, shallow pans or cultivated land which had been filled by rain and/or the river between May and August;
- larger, deeper dhesheeg areas (over 50 hectares) at Jamaame and Kamsuma;
- deeply flooded pools and dhesheegs among woodlands, associated with the river at and up to a few kilometers north of Fanoole Barrage;
- the extensive Dhesheeg Waamo, which was dry at the eastern end, but still had over 50,000 hectares flooded, with dense vegetation at borders and open muddy shoreline areas where livestock had been watered regularly; and
- the coastal mudflats near Kismaayo.

Because of rain during the field visit, roads were impassable above Fanoole Barrage and it was not possible to visit Shoonto nor Bu'aale.

Palaearctic passerines and other land birds were again observed in thicket and woodland habitat along the river, on the floodplain and in the peripheral bushlands, mainly during the early morning and late afternoon. Where possible, sites visited during March were checked again on this trip. As a result of the rains between May and August as well as heavy river flooding, an abundance of lush green habitat was present in the lower Jubba Valley, especially on the floodplain, from the edge of the forested areas above Fanoole south to Jamaame. The peripheral bushlands were also greener and thicker than in March, especially around small wet or recently dried flood pools. The Deyr rains were a constant part of this survey, with rainfall at nearly every site visited. Substantial downpours were encountered at

Jilib, Fanoole and Jamaame, which resulted in a rapid greening of these areas during the period in the field and probably served to ground some overflying migrants. However, south of Jamaame, toward the coast and around Dhesheeg Waamo, the bushland was relatively dry.

#### IV. RESULTS

During the eight-day survey, 43 more bird species were recorded in the lower Jubba Valley, in addition to the 270 species recorded in March (Pearson 1987), for a JESS study total of 313 species in the lower Jubba Valley. These new additions include 13 species previously unrecorded in the Jubba Valley and five new species records for Somalia (Ash and Miskell 1983). A total of 67 Palearctic species were observed during this survey, including 19 species not recorded in March. The individual occurrence and status of Palearctic species in November are detailed in the annotated list in Appendix A. A list of all additional species recorded during the November survey is given in Appendix B. Appendix C contains the complete checklist for all bird species recorded during the two surveys.

##### A. Palearctic Water Birds

A few migrant ducks had returned. Parties of up to 40 garganey (*Anas quequedula*) were noted at Jamaame and Dhesheeg Waamo and two shovelers (*A. clypeata*) were seen. A black stork (*Ciconia nigra*) at Fanoole Rice Project was a new species record for Somalia. Otherwise, Palearctic water birds were all waders (*Scolopacidae* and *Charadriidae*). Their occurrence and abundance are outlined below.

##### 1. Irrigated Rice Projects

At Fanoole, a high percentage of the paddies were flooded and had rice growing. Wading birds were thinly scattered in the main, but were concentrated particularly on newly churned up, muddy paddies and more open areas with short rice. Most paddies contained only one or two birds, but some had over 100. Multiplying up densities gave a conservative estimate of about 3,000 wading birds on the whole project. Over two-thirds of these were wood sandpipers (*Tringa glareola*) and most of the remainder were ruffs (*Philomachus pugnax*).

The Mogambo Irrigation Project was about 50 percent flooded. Again, wading birds were scattered, but as many as 200 to 300 birds were found on some of the more open, muddy paddies. A crude estimate for the whole area gave some 8,000 birds, with wood sandpipers and ruffs in almost equal numbers and together accounting for over 80 percent of all birds. Other major species were little stint (*Calidris minuta*), marsh sandpiper (*Tringa stagnatilis*) and ringed plover (*Charadris hiaticula*).

## 2. Natural Flood Areas

The dhesheegs and pools at and just north of Fanoole Barrage were deep and provided little muddy habitat. In contrast to March, this area supported few wading birds. Other flooded areas north to Bu'aale were inaccessible, but it is unlikely that sites such as the Shoonto dhesheeg would provide much habitat for wading birds at this stage of the flood cycle.

A number of small, drying pools on cultivated areas near Jilib typically supported about 100 to 200 wading birds each. The main species were wood sandpipers and ruffs, with smaller numbers of little stints, curlew sandpipers (*Calidris ferruginea*) and greenshanks (*Tringanebularia*). Similar sites near Jamaame and larger dhesheegs at Kamsuma and Jamaame held a similar assortment of species, but numbers were never large. The number of small wading bird sites was limited and clearly decreasing fast as these remaining pools dried up. Assuming, however, that there were a considerable number of such pools which were not observed, an estimate of wading birds present on naturally flooded areas between Jilib and Jamaame would not be less than about 3,000 birds. Wood sandpipers predominated at such sites, followed by ruffs and little stints. Several sightings of Temminck's stints (*Calidris temminckii*) were noteworthy, as was the inland occurrence of terek sandpipers (*Xerus cinereus*) at Jilib and Jamaame.

The flooded part of Dhesheeg Waamo had a perimeter of at least 30 kilometers. Along one kilometer of relatively open shoreline with mud and short grass, 200 wading birds were counted. These included 80 wood sandpipers, 70 ruffs and at least five great snipes (*Gallinago media*), a new species record for Somalia. Such high wader densities were not present along more highly vegetated stretches of the water's edge, but wood sandpipers were observed at most pools, even among reeds and *Acacia nilotica* thicket. There were local reports of other stretches of open shore on the other side of the dhesheeg. A reasonable estimate of wading birds at Dhesheeg Waamo would be over several thousand birds.

## 3. Kismaayo Coastal Mudflats

On 10 November, wading birds were observed moving up to the edge of these flats with the rising tide before flying off to roost. The total number of birds was 4,000 to 5,000, similar to the March count. The species composition was also similar with curlew sandpipers predominant, followed by great sandpipers (*Charadrius leschenaulti*), Mongolian sandpipers (*C. mongolus*), sanderlings (*Calidris alba*), and turnstones (*Arenaria interpres*). Three bar-tailed godwits (*Limosa lapponica*) and

three oyster catchers (*Haematopus ostralegus*) were observed and added to the list of species recorded at this site in March.

#### 4. Summary

Numbers of migrant wading birds at Fanoole (and probably elsewhere to the north) were much lower than in March because of the lack of shallow muddy habitats. In contrast, numbers were greater from Jilib to Dhesheeg Waamo than along any section of the river in March, and probably exceeded 20,000 birds. As many as half of these were accommodated on two rice projects--Fanoole and Mogambo. The wading bird composition in irrigated areas appeared to be similar to that on naturally flooded areas, with wood sandpipers, followed by ruffs, as the main species (thousands of each), and little stints, marsh sandpipers and ringed plovers in the hundreds.

#### B. Palaearctic Land Birds

Migrant passerines and other land birds were present in greater numbers and variety than was observed in March. In contrast with March, most were found in thicket and woodland on the floodplain rather than in the drier *Acacia* bushland. Most were passage birds in migration.

Nightingales (*Luscinia megarhynchos*) were widespread and locally abundant from Jamaame northward. Most were in thickets of *Acacia nilotica* fairly close to the river. Scores were present around Fanoole Barrage alone. Smaller numbers of sprossers (*L. luscinia*) accompanied nightingales at some sites. Spotted flycatchers (*Muscicapastriata*) were much more common than in March and red-backed shrikes (*Lanius collurio*) were widespread in small numbers. Few migrant warblers were found, but several marsh warblers (*Acrocephalus palustris*), a Basra reed warbler (*A. griseldis*) and a river warbler (*Locustella fluviatilis*) were particularly noteworthy. These species and the sprosser are among the migrants that are characteristic of the heavy movement through southeast Kenya.

Pied wheatears (*Oenanthe pleschanka*) and Isabelline wheatears (*O. isabellinus*) were quite common and practically up to the wintering numbers found in March. In addition, northern wheatears (*O. oenanthe*), probably in passage, were frequent. On the other hand, no rufous bush chats (*Cercotrichas galactotes*) were seen and only a single Upcher's warbler (*Hippolais languida*) was found. These two wintering species had apparently not yet arrived in the Jubba Valley.

Grey wagtails (*Motacilla cinerea*) were seen surprisingly often in towns and villages. This is typically a highland

wintering bird in East Africa and most of the Jubba records were assumed to have referred to passage migrants.

White wagtails (*Motacilla alba*) occurred increasingly throughout the week and, like parties of yellow wagtails (*M. flava*), were more common than in March. The latter species were quite numerous on the rice projects and especially at Dhesheeg Waamo.

Eurasian swallows (*Hirundo rustica*) were more numerous and widespread than in March, many of them perhaps in passage. Other passage birds noted several times were golden orioles (*Oriolus oriolus*), Eurasian cuckoos (*Cuculus canorus*) and Eurasian rollers (*Coracias garrulus*). Blue-cheeked bee-eaters (*Merops persicus*) had arrived and were moving south in parties in the Jilib-Fanoole area.

There was a general lack of migrant birds of prey, even though these birds pass through Kenya in large numbers and variety in early November. A single hobby (*Falco subbuteo*) and a single lesser kestrel (*F. naumanni*?) were the only migrant falcons seen. A honey buzzard (*Pernis apivorus*) in tall trees along the river at Jilib was another new species record for Somalia.

### C. Afro-Tropical Water Birds

Numbers of the larger water birds--storks, ibises, herons, spoonbills and pelicans--were compared broadly with those noted in March. These birds were present in much larger numbers on the lower part of the floodplain. Open-billed storks (*Anastomas lamelligerus*) were particularly abundant and numbered in the thousands. Hundreds of yellow-billed storks (*Mycteria ibis*) and marabou (*Leptoptilos crumeniferus*) and scores of woolly necked storks (*Ciconia episcopus*) were also seen. Thirteen species of herons were recorded and comprise thousands of birds in all. Some 2,000 to 3,000 herons, including 300 squacco herons (*Ardeola ralloides*), were gathered in one small area of a few hectares of *Acacia nilotica* bush and reeds at the edge of Dhesheeg Waamo. Groups of glossy ibis (*Plegadis falcinellus*), sacred ibis (*Threskiornis aethiopica*) and African spoonbills (*Platelea alba*) were common.

A mixed colony of pink-backed pelicans (*Pelicanus rufescens*), marabous and yellow-billed storks was found about 10 kilometers north of Kamsuma, along the Mareerey Road. Over 500 pairs of each species appeared to be involved. Nests were five to 15 meters high in spreading trees in an area of tall thicket. According to a local report, the pelicans arrived first, about July to August, followed by the other two species. Nests

contained chicks, and some young pelicans were already full grown. Nesting was said to be a regular phenomenon at this site.

Parties of white-faced whistling ducks (*Dendrocygna viduata*), together with a few fulvous whistling ducks (*D. bicolor*) were noted many times. Several thousands were present at Dhesheeg Waamo.

## V. CONCLUSIONS

Many thousands of migrant wading birds use the Jubba Valley during November, and presumably more immediately after their arrival during September and October. These birds are concentrated at this time mainly in areas south of Jilib, where a high proportion (more than half) utilize irrigated rice land.

A variety of migrant land birds occurs in the lower Jubba Valley on southward passage, mainly in floodplain thickets and woodlands. The nightingale is particularly numerous in November, but the species characteristic of the heavy movement through southeast Kenya are represented only in small numbers or not at all. No significant passage of birds of prey seems to occur.

The planned construction of Baardheere Dam might lead to a reduction in the small flooded areas used by wading birds south of Jilib, but the more important sites--the irrigated rice projects and Dhesheeg Waamo--would presumably not be affected. It is unlikely that the dam would adversely affect elements of habitat on which the southward passage depends.

## APPENDIX A

### Annotated List of Palearctic Migrants

- Black stork, *Ciconia nigra*. One at Fanoole rice scheme on 5 November. New for Somalia.
- Garganey, *Anas querquedula*. About 40 at Jamaame on 9 November. Small parties at Dhesheeg Waamo on 10 November.
- Shoveler, *Anas clypeata*. Two at Jamaame on 9 November.
- Eurasian marsh harrier, *Circus aeruginosus*. One at Mogambo rice scheme on 8 November.
- Pallid harrier, *Circus macrourus*. One at Mogambo rice scheme on 8 November.
- Booted eagle, *Hieraaetus pennatus*. One at Jamaame on 11 November.
- Honey buzzard, *Pernis apivorus*. One in trees along river at Jilib, 6 November. New for Somalia.
- Osprey, *Pandion haliaetus*. One at Jamaame on 9 November.
- Hobby, *Falco subbuteo*. One near rainstorm at Kamsuma on 7 November.
- Lesser kestrel, *Falco naumanni*. One near storm at Fanoole on 6 November.
- Oyster catcher, *Kaematopus ostralegus*. Three at Kismaayo flats on 10 and 11 November.
- Caspian plover, *Charadrius asiaticus*. About 10 on rough ground outside Kismaayo on 11 November.
- Kentish plover, *Charadrius alexandrinus*. Four at Kismaayo tidal flats on 10 November.
- Little ringed plover, *Charadrius dubius*. Small parties of up to 20 common on mud pans and edges of dhesheegs.
- Ringed plover, *Charadrius hiaticula*. Common inland on natural floods and rice schemes. Hundreds at Mogambo rice scheme. Present at Kismaayo on tidal flats.
- Greater sandplover, *Charadrius leschenaultii*. Confined to coast. Hundreds at Kismaayo flats.

- Mongolian sandplover, *Charadrius mongolus*. Confined to coast. Hundreds at Kismaayo flats.
- Grey plover, *Pluvialis squatarola*. Confined to coast. Scores at Kismaayo flats.
- Curlew, *Numenius arquata*. Three at Kismaayo on 10 November.
- Whimbrel, *Numenius phaeopus*. More than 15 at Kismaayo on 10 November.
- Wood sandpiper, *Tringa glareola*. Very abundant and widespread on wetlands. The most numerous wader on rice schemes and natural floods. Thousands at Fanoole and Mogambo rice schemes, and at Dhesheeg Waamo.
- Greenshank, *Tringa nebularia*. Widespread in ones and twos in wet pans and in larger numbers on the two rice schemes. Tens on Kismaayo flats.
- Green sandpiper, *Tringa ochropus*. One at Jilib on 5 November; a few at Mogambo rice scheme on 7 and 8 November.
- Marsh sandpiper, *Tringa stagnatilis*. Common and widespread on inland wetlands. In ones and twos and small groups on pans and dhesheegs. Hundreds at Mogambo rice scheme.
- Redshank, *Tringa totanus*. Five at Kismaayo tidal flats on 10 November.
- Terek sandpiper, *Xenus cinereus*. Over 50 at Kismaayo tidal flats. Inland, two at Jamaame on 9 November and two at Jilib on 11 November.
- Common sandpiper, *Actitis hypoleucos*. Very common and widespread in small numbers. More than 50 together at Fanoole Barrage.
- Common snipe, *Gallinago gallinago*. Scores present at Dhesheeg Waamo on 10 November. Otherwise, in small numbers at Jamaame and on rice schemes.
- Great snipe, *Gallinago media*. More than five at Dhesheeg Waamo on 10 November. New for Somalia.
- Sanderling, *Calidris alba*. Confined to coast. Hundreds at Kismaayo flats.
- Curlew sandpiper, *Calidris ferruginea*. Widespread, but in small numbers, at inland sites. Over 2,000 at Kismaayo flats.

- Little stint, *Calidris minuta*. Widespread and abundant at muddy inland sites, with hundreds on rice scheme irrigation and at Dhesheeg Waamo.
- Temminck's stint, *Calidris temminckii*. One at Dhesheeg Waamo on 10 November.
- Black-tailed godwit, *Limosa limosa*. One at Dhesheeg Waamo on 10 November.
- Bar-tailed godwit, *Limosa lapponica*. Three at Kismaayo flats on 10-11 November.
- Ruff, *Philomachus pugnax*. Widespread and abundant on wetlands. Thousands at Mogambo, and over 1,000 at Dhesheeg Waamo.
- Turnstone, *Arenaria interpres*. Hundreds at Kismaayo flats.
- Lesser black-backed gull, *Larus fuscus*. A few at Kismaayo.
- Herring gull, *Larus argentatus*. Two at Kismaayo.
- Whiskered tern, *Chlidonias hybrideus*. Two in non-breeding plumage on small dhesheeg at Jamaame--presumed Palearctic race.
- White-winged black tern, *Chlidonias leucopterus*. A few hundred seen at Fanoole and Mogambo rice schemes. Party of about 20 at Jamaame.
- Gull-billed tern, *Celochidon nilotica*. A few tens in Jamaame area and Kismaayo.
- Eurasian cuckoo, *Cuculus canorus*. Frequent. Singles at Jilib on 5 November, Kamsuma on 8 November and Goob Weyn on 11 November. Three at Mogambo on 8 November.
- Eurasian bee-eater, *Merops apiaster*. Two on wires on Jilib-Fanoole road on 6 November.
- Blue-cheeked bee-eater, *Merops persicus*. Scores along Jilib-Fanoole road on 5-6 and 11-12 November. Parties moving south.
- Eurasian roller, *Coracias garrulus*. Uncommon. Three at Jilib-Fanoole on 6 November. One at Jilib on 7 November. Three south of Jilib on 9 November.
- Eurasian swallow, *Hirundo rustica*. Common and widespread in scores and hundreds, especially on floodplain.

- Golden oriole, *Oriolus oriolus*. One at Jilib on 5 November and three there, in trees along the river, on 6 November. Two at Goob Weyn in *Acacia tortilis* woodland on 11 November.
- Nightingale, *Luscinia megarhynchos*. Very common on floodplain, mainly in *Acacia nilotica* thickets, with smaller numbers also in peripheral bushlands. Also from Jamaame area north. Scores around Fanoole Barrage on 7 November. Frequently in song. The most abundant migrant songbird.
- Sprosser, *Luscinia luscinia*. A few in thicket near river at Jilib on 5, 6 and 12 November. More than 30 around Fanoole Barrage on 7 November. One near Jamaame on 9 November. Some in song. Always much outnumbered by nightingales.
- Rock thrush, *Monticola saxatilis*. One at Jilib on 7 November.
- Isabelline wheatear, *Oenanthe isabellinus*. Confined to flatter open areas of Jamaame and Dhesheeg Waamo. Common near Kismaayo and Goob Weyn.
- Northern wheatear, *Oenanthe oenanthe*. Frequent and widespread, mainly on floodplain cultivation. A few at Jilib, Jamaame and near coast at Goob Weyn and Kismaayo.
- Pied wheatear, *Oenanthe pleschanka*. Frequent and widespread in open bush and on cultivation, on floodplain and peripheral areas. From Dhesheeg Waamo and Jamaame north to Fanoole. None on coast.
- Basra reed warbler, *Acrocephalus griseldis*. One along ditch at Mogambo rice scheme on 7 November.
- Marsh warbler, *Acrocephalus palustris*. Uncommon. Two at Jilib on 5 November. Two at Fanoole Barrage and two or three after rain at Mogambo rice scheme on 7 November. One at Jamaame on 8 November. One at Kamsuma on 9 November.
- Upcher's warbler, *Hippolais languida*. Only one seen--at Goob Weyn--on 11 November.
- Olivaceous warbler, *Hippolais pallida*. Uncommon. One at Fanoole Barrage on 7 November. One at Jamaame on 8 November and more than two at Kismaayo on 11 November.
- River warbler, *Locustella fluviatilis*. One in *Acacia nilotica* thicket among rank grass by river at Jilib on 12 November. New for Somalia.
- Barred warbler, *Sylvianisoria*. A number in *Salvadora persica* thickets in *Acacia tortilis* woodland at Goob Weyn on 11 November. At least 10 birds in one small area.

Spotted flycatcher, *Muscicapa striata*. Quite common and widespread from coast up to Jilib, mainly on floodplain. Mostly singly, but more than 20 in patch of *Acacia tortilis* woodland at Jamaame.

Red-throated pipit, *Anthus cervinus*. Two at Dhesheeg Waamo on 10 November. Two at Jilib on 11 November.

Yellow wagtail, *Motacilla flava*. Common and sometimes numerous at wet sites on floodplain. Scattered birds on the two rice schemes. Hundreds at Dhesheeg Waamo.

White wagtail, *Motacilla alba*. Frequent. Usually single in towns and near water. Seen at Jilib, Fanoole Barrage and Jamaame area. Mainly 8-11 November and probably just arriving.

Grey wagtail, *Motacilla cinerea*. Frequent, in towns, usually near water. Mainly singly, but four together at Jamaame on 8 November.

Red-backed shrike, *Lanius collurio*. Widespread and frequently seen in ones and twos, perched on bushes and thicket on floodplain. Recorded from Goob Weyn north to Fanoole Barrage.

APPENDIX B

Additional Species Recorded During November Survey

J	White Pelican	<i>Pelicanus onocrotalus</i>
	Dwarf Bittern	<i>Ixobrychus sturmi</i>
	Night Heron	<i>Nycticorax nycticorax</i>
J ** P	Black Stork	<i>Ciconia nigra</i>
	Fulvous Whistling Duck	<i>Dendrocygna bicolor</i>
J * P	Shoveler	<i>Anas clypeata</i>
J ** P	Honey Buzzard	<i>Pernis apivorus</i>
*	Bat Hawk	<i>Macheiranphus alcinus</i>
	Osprey	<i>Pandion haliaetus</i>
J **	African Hobby	<i>Falco cuvieri</i>
J *	Lesser Kestrel	<i>Falco naumanni</i>
J P	Hobby	<i>Falco subbuteo</i>
	Harlequin Quail	<i>Coturnix delegorgei</i>
	Oyster Catcher	<i>Haematopus ostralegus</i>
J ** P	Great Snipe	<i>Gallinago media</i>
	Bar-tailed Godwit	<i>Limosa lapponica</i>
	Herring Gull	<i>Larus argentatus</i>
	Lesser Crested Tern	<i>Sterna bergalensis</i>
	Little Tern	<i>Sterna albifrons</i>
	Didric Cuckoo	<i>Chrysococcyx caprius</i>
J	Great Spotted Cuckoo	<i>Clamator glandarius</i>
J P	Eurasian Cuckoo	<i>Cuculus canorus</i>
*	Pel's Fishing Owl	<i>Scotopelia peli</i>
	Pygmy Kingfisher	<i>Ispidina picta</i>
J * P	Eurasian Bee-eater	<i>Merops apiaster</i>
	Hoopoe	<i>Upupa epops</i>
	Cardinal Woodpecker	<i>Dendropicus fuscescens</i>
	Wire-tailed Swallow	<i>Hirundo smithii</i>
	Sprosser	<i>Luscinia luscinia</i>
J * P	Marsh Warbler	<i>Acrocephalus palustris</i>
* P	Basra Reed Warbler	<i>Acrocephalus griseldis</i>
J ** P	River Warbler	<i>Locustella fluviatilis</i>
* P	Barred Warbler	<i>Sylvia nisoria</i>
	Grey Wagtail	<i>Motacilla cinerea</i>
	Golden Pipit	<i>Tmetothylacus tenellus</i>
	Brubru	<i>Nilaus afer</i>
	Red-backed Shrike	<i>Lanius collurio</i>
	Grey-headed Batis	<i>Batis orientalis</i>
	Mouse-colored Perduline	<i>Remiz musculus</i>
	Little Purple-banded Sunbird	<i>Nectarinia bifasciata</i>
	Black-headed Weaver	<i>Ploceus cucullatus</i>
	Fire-fronted Bishop	<i>Euplectes diadematus</i>
	Paradise Whydah	<i>Vidua paradisaea</i>

J = Previously unrecorded in Jubba Valley.

\* = Previously known in Somalia from fewer than 10 records.

\*\* = New Somalia record.

P = Palearctic migrant.

APPENDIX C

Checklist of All Birds Recorded  
During March and November Surveys

This checklist was compiled by Gus Tillman based on observations by David Pearson in March and November 1987. Names are based on Ash and Miskell (1983).

Lower Jubba Valley - Somalia  
March, November 1987

STRUTHIONIDAE - Ostriches

Ostrich Struthio camelus

PODICIPEDIDAE - Grebes

Little Grebe Tachybaptus ruficollis

PELECANIDAE - Pelicans

Pink-backed Pelican Pelecanus rufescens  
White Pelican P. onocrotalus

PHALACROCORACIDAE - Cormorants

Long-tailed Cormorant Phalacrocorax africanus  
Greater Cormorant P. carbo

ANHINGIDAE - Darters

Darter Anhinga rufa

ARDEIDAE - Herons, Bitterns, Egrets

Dwarf Bittern Ixobrychus sturmii  
Grey Heron Ardea cinerea  
Goliath Heron A. goliath  
Black-headed Heron A. melanocephala  
Purple Heron A. purpurea  
Squacco heron Ardeola ralloides  
Cattle Egret Bulbulcus ibis  
Green-backed Heron Butorides striatus  
Great White Heron Egretta alba  
Black Heron E. ardesiaca  
Little Egret E. garzetta  
African Reef Heron E. gularis  
Yellow-billed Egret E. intermedia  
Night Heron Nycticorax nycticorax

SCOPIDAE - Hamerkop

Hamerkop Scopus umbretta

\*\*New Somali record.

## CICONIIDAE - Storks

Open-billed Stork	<u>Anastomus lamelligerus</u>
Abdim's Stork	<u>Ciconia abdimi</u>
Woolly-necked Stork	<u>C. episcopus</u>
Black Stork **	<u>C. nigra</u>
Saddle-billed Stork	<u>Ephippiorhynchus senegalensis</u>
Marabou	<u>Leptoptilos crumeniferus</u>
Yellow-billed Stork	<u>Mycteria ibis</u>

## THRESKIORNITHIDAE - Ibises, Spoonbills

Hadada	<u>Bostrychia hagedash</u>
Glossy Ibis	<u>Plegadis falcinellus</u>
Sacred Ibis	<u>Threskiornis aethiopica</u>
African Spoonbill	<u>Platalea alba</u>

## PHOENICOPTERIDAE - Flamingos

Greater Flamingo	<u>Phoenicopterus ruber</u>
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## ANATIDAE - Ducks, Geese

Fulvous Whistling Duck	<u>Dendrocygna bicolor</u>
White-faced Whistling Duck	<u>D. viduata</u>
Egyptian Goose	<u>Alopochen aegyptiacus</u>
Shoveler	<u>Anas clypeata</u>
Red-billed Teal	<u>A. erythrorhynchos</u>
Garganey	<u>A. querquedula</u>
African Pygmy Goose	<u>Nettion auritus</u>
Knob-billed Duck	<u>Sarkidiornis melanotos</u>

## ACCIPITRIDAE - Birds of Prey

White-backed Vulture	<u>Gyps africanus</u>
Hooded Vulture	<u>Neophron monachus</u>
Eurasian Marsh Harrier	<u>Circus aeruginosus</u>
Pallid Harrier	<u>C. macrourus</u>
Montagu's Harrier	<u>C. pygargus</u>
African Marsh Harrier	<u>C. ranivorus</u>
Harrier Hawk	<u>Polyboroides radiatus</u>
Brown Snake Eagle	<u>Circaetus cinereus</u>
Southern Banded Snake Eagle	<u>C. fasciolatus</u>
Bateleur	<u>Terathopius ecaudatus</u>
Shikra	<u>Accipiter badius</u>
Little Sparrowhawk	<u>A. minullus</u>
African Goshawk	<u>A. tachiro</u>
Tawny Eagle	<u>Aquila rapax</u>
Wahlberg's Eagle	<u>A. wahlbergii</u>
Grashopper Buzzard	<u>Butastur rufipennis</u>
Honey Buzzard**	<u>Fernis apivorus</u>
Booted Eagle	<u>Hieraaetus pennatus</u>
Lizard Buzzard	<u>Kaupifalco monogrammicus</u>
Gabar Goshawk	<u>Melierax gabar</u>

Pale Chanting Goshawk  
 Martial Eagle  
 African Fish Eagle  
 Black Kite  
 Swallow-tailed Kite  
 Black-shouldered Kite  
 Bat Hawk  
 Osprey  
 Lesser Kestrel  
 Hobby  
 African Hobby\*\*  
 Pygmy Falcon

Melierax poliopterus  
Polemaetus bellicosus  
Haliaeetus vocifer  
Milvus migrans  
Chelictinia riccourii  
Elanus caeruleus  
Macheiramphus alcinus  
Pandion haliaetus  
Falco naumanni  
F. subbuteo  
F. cuvieri  
Polihierax semitorquatus

PHASIANIDAE - Quail, Francolin

Harlequin Quail  
 Crested Francolin

Coturnix delegorguei  
Francolinus sephaena

NUMIDIDAE - Guineafowl

Vulturine Guineafowl  
 Kenya Crested Guineafowl

Acryllium vulturinum  
Guttera pucherani

RALLIDAE - Rails, Crakes

Common Moorhen  
 Black Crake

Gallinula chloropus  
Limnocorax flavirostra

OTIDIDAE - Bustards

Buff-crested Bustard  
 White-bellied Bustard

Eupodotis ruficrista  
E. senegalensis

JACANIDAE - Jacanas

Jacana

Actophilornis africanus

ROSTRATULIDAE - Painted Snipe

Painted Snipe

Rostratula benghalensis

HAEMATOPODIDAE - Oystercatchers

Oystercatcher

Haematopus ostralegus

CHARADRIIDAE - Plovers

Kentish Plover  
 Caspian Plover  
 Little Ringed Plover  
 Ringed Plover  
 Great Sandplover  
 White-fronted Sandplover  
 Mongolian Sandplover

Charadrius alexandrinus  
C. asiaticus  
C. dubius  
C. hiaticula  
C. leschenaultii  
C. marginatus  
C. mongolus

Kittlitz's Sandplover  
 Grey Plover  
 Spur-winged Plover  
 Black-headed Plover

C. pecuarius  
Fluvialis squatarola  
Vanellus spinosus  
V. tectus

SCOLOPACIDAE - Sandpipers, Snipes

Common Sandpiper  
 Curlew  
 Whimbrel  
 Spotted Redshank  
 Wood Sandpiper  
 Greenshank  
 Green Sandpiper  
 Marsh Sandpiper  
 Redshank  
 Terek Sandpiper  
 Common Snipe  
 Great Snipe\*\*  
 Sanderling  
 Curlew Sandpiper  
 Little Stint  
 Temminck's Stint  
 Bar-tailed Godwit  
 Black-tailed Godwit  
 Ruff  
 Turnstone

Actitus hypoleucos  
Numenius arquata  
N. phaeopus  
Tringa erythropus  
T. glareola  
T. nebularia  
T. ochropus  
T. stagnatilis  
T. totanus  
Xenus cinereus  
Gallinago gallinago  
G. media  
Calidris alba  
C. ferruginea  
C. minuta  
C. temminckii  
Limosa lapponica  
L. limosa  
Philomachus pugnax  
Arenaria interpres

RECURVIROSTRIDAE - Stilts, Avocets

Black-winged Stilt  
 Avocet

Himantopus himantopus  
Recurvirostra avosetta

DROMADIDAE - Crab Plover

Crab Plover

Dromas ardeola

BURHINIDAE - Thicknees

Spotted Thicknee  
 Water Thicknee

Burhinus capensis  
B. vermiculatus

GLAREOLIDAE - Coursers, Pratincoles

Common Pratincole

Glareola pratincola

LARIDAE - Gulls, Terns

Herring Gull  
 Lesser Black-backed Gull  
 Sooty Gull  
 Black-headed Gull  
 Whiskered Tern  
 White-winged Black Tern

Larus argentatus  
L. fuscus  
L. hemprichii  
L. ridibundus  
Chlidonias hybridus  
C. leucopterus

Gull-billed Tern  
 Little Tern  
 Lesser Crested Tern  
 Crested Tern  
 Caspian Tern

Gelochelidon nilotica  
Sterna albifrons  
S. bengalensis  
S. bergii  
S. caspia

PTEROCLIDIDAE - Sandgrouse

Black-faced Sandgrouse

Pterocles decoratus

COLUMBIDAE - Pigeons, Doves

Namaqua Dove  
 Ring-necked Dove  
 Mourning Dove  
 Red-eyed Dove  
 Laughing Dove  
 Emerald-spotted Wood Dove  
 Tambourine Dove

Oena capensis  
Streptopelia capicola  
S. decipiens  
S. semitorquata  
S. senegalensis  
Turtur chalcospilos  
T. tympanistris

PSITTACIDAE - Parrots

Orange-bellied Parrot

Poicephalus rufiventris

MUSOPHAGIDAE - Turacos

White-bellied Go-away Bird  
 Fischer's Turaco

Corythaixoides leucogaster  
Tauraco fischeri

CUCULIDAE - Cuckoos, Coucals

Didric Cuckoo  
 Klaas' Cuckoo  
 Great Spotted Cuckoo  
 Black and White Cuckoo  
 Eurasian Cuckoo  
 White-breasted Coucal

Chrysococcyx caprius  
C. klaas  
Clamator glandarius  
C. jacobinus  
Cuculus canorus  
Centropus superciliosus

STRIGIDAE - Owls

African Wood Owl  
 Scops Owl  
 Pel's Fishing Owl

Oicocaba woodfordii  
Otus scops  
Scotopelia peli

CAPRIMULGIDAE - Nightjars

Slender-billed Nightjar

Caprimulgus clarus

APODIDAE - Swifts, Spinetails

Little Swift  
 Palm Swift

Apus affinis  
Cypsiurus clarus

## COLIIDAE - Mousebirds

Speckled Mousebird  
Blue-naped Mousebird

Colius striatus  
Urocolius macrourus

## ALCEDINIDAE - Kingfishers

Pied Kingfisher  
Malachite Kingfisher  
Pygmy Kingfisher  
Brown-hooded Kingfisher  
Striped Kingfisher  
Chestnut-bellied Kingfisher

Ceryle rudis  
Alcedo cristata  
Ispidina picta  
Halcyon albiventris  
H. chelicuti  
H. leucocephala

## MEROPIIDAE - Bee-eaters

White-throated Bee-eater  
Eurasian Bee-eater  
Carmine Bee-eater  
Blue-cheeked Bee-eater  
Little Bee-eater  
Madagascar Bee-eater

Merops albicollis  
M. apiaster  
M. nubicus  
M. persicus  
M. pusillus  
M. superciliosus

## CORACIIDAE - Rollers

Lilac-breasted Roller  
Eurasian Roller  
Broad-billed Roller

Coracias caudata  
C. garrulus  
Eurystomus glaucurus

## UPUPIDAE - Hoopoes

Hoopoe

Upupa epops

## PHOENICULIDAE - Wood Hoopoes

Abyssinian Scimitarbill  
Scimitarbill  
Green Wood Hoopoe

Phoeniculus minor  
P. cyanomelas  
P. purpureus

## BUCEROTIDAE - Hornbills

Crowned Hornbill  
Von der Denker's Hornbill  
Red-billed Hornbill  
Grey Hornbill

Tockus albiterminatus  
T. denkeni  
T. erythrorhynchus  
T. nasutus

## CAPITONIDAE - Barbets, Tinkerbirds

Black-throated Barbet  
Brown-breasted Barbet  
Red-fronted Tinkerbird  
d'Arnaud's Barbet

Lybius melanocephalus  
L. melanopterus  
Pogoniulus pusillus  
Trachyphonus darnaidii

## INDICATORIDAE - Honeyguides

Black-throated Honeyguide	<u>Indicator indicator</u>
Lesser Honeyguide	<u>I. minor</u>

## PICIDAE - Woodpeckers

Nubian Woodpecker	<u>Campethera nubica</u>
Cardinal Woodpecker	<u>Dendropicos fuscescens</u>

## ALAUDIDAE - Larks

Chestnut-headed Sparrow Lark	<u>Eremopterix signata</u>
Singing Bush lark	<u>Mirafra cantillans</u>
Red-winged Bush Lark	<u>M. hypermetra</u>
Pink-breasted Lark	<u>M. poecilosterna</u>

## HIRUNDINIDAE - Swallows, Martins

Striped Swallow	<u>Hirundo abyssinica</u>
Ethiopian Swallow	<u>H. aethiopica</u>
Eurasian Swallow	<u>H. rustica</u>
Wire-tailed Swallow	<u>H. smithii</u>
Sand Martin	<u>Riparia riparia</u>

## DICURURIDAE - Drongos

Drongo	<u>Dicurus adsimilis</u>
Square-tailed Drongo	<u>D. ludwigii</u>

## ORIOOLIDAE - Orioles

Black-headed Oriole	<u>Oriolus larvatus</u>
Golden Oriole	<u>O. oriolus</u>

## CORVIDAE - Crows, Ravens

Pied Crow	<u>Corvus albus</u>
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## REMIZIDAE - Penduline Tits

Mouse-coloured Penduline Tit	<u>Remiz musculus</u>
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## TIMALIIDAE - Babbler

Rufous Chatterer	<u>Turdoides rubiginosus</u>
Scaly Babbler	<u>T. squamulatus</u>

## PYCNOTIDAE - Bulbuls

Zanzibar Sombre Greenbul	<u>Andropadus importunus</u>
Yellow-bellied Greenbul	<u>Chlorocichla flaviventris</u>
Nicator	<u>Nicator chloris</u>
Northern Brownbul	<u>Phyllastrephus strepitans</u>
Common Bulbul	<u>Pycnonotus barbatus</u>

## TURDIDAE - Thrushes, Robins

Rufous Bush Chat	<u>Cerotrichas galactotes</u>
White-browed Scrub Robin	<u>C. leucophrys</u>
Eastern Banded Scrub Robin	<u>C. quadrivirgata</u>
Spotted Morning Thrush	<u>Cichladusa guttata</u>
White-browed Robin Chat	<u>Cossypha heuglini</u>
Red-capped Robin Chat	<u>C. natalensis</u>
Sprosser	<u>Luscinia luscinia</u>
Nightingale	<u>L. megarhynchos</u>
Rock Thrush	<u>Monticola saxatilis</u>
Isabelline Wheatear	<u>Oenanthe isabelline</u>
Northern Wheatear	<u>O. oenanthe</u>
Pied Wheatear	<u>O. pleschanka</u>
Bare-eyed Thrush	<u>Turdus tephronotus</u>

## SYLVIIDAE - Warblers

Lesser Swamp Warbler	<u>Acrocephalus gracilirostris</u>
Basra Reed Warbler	<u>A. griseldis</u>
Marsh Warbler	<u>A. palustris</u>
Sedge Warbler	<u>A. schoenobaenus</u>
River Warbler**	<u>Locustella fluviatilis</u>
Black-headed Apalis	<u>Apalis melanocephala</u>
Grey-backed Camaroptera	<u>Camaroptera brachyura</u>
Grey Wren Warbler	<u>C. simplex</u>
Siffling Cisticola	<u>Cisticola brachyptera</u>
Winding Cisticola	<u>C. galactotes</u>
Upcher's Warbler	<u>Hippolais languida</u>
Olivaceous Warbler	<u>H. pallida</u>
Willow Warbler	<u>Phylloscopus trochilus</u>
Tawny-flanked Prinia	<u>Prinia subflava</u>
Whitethroat	<u>Sylvia communis</u>
Barrèd Warbler	<u>S. nisoria</u>
Northern Crombec	<u>Sylvietta brachyura</u>
Somali Long-billed Crombec	<u>S. isabellina</u>

## MUSCICAPIDAE - Flycatchers

Grey Flycatcher	<u>Bradornis microhynchus</u>
Pale Flycatcher	<u>B. pallidus</u>
Spotted Flycatcher	<u>Muscicapa striata</u>
Black-throated Wattle Eye	<u>Platysteira peltata</u>
Paradise Flycatcher	<u>Terpsiphone viridis</u>
Grey-headed Batis	<u>Batis orientalis</u>

## MOTACILLIDAE - Wagtails, Pipits, Longclaws

Red-throated Pipit	<u>Anthus cervinus</u>
Malindi Pipit	<u>A. melindae</u>
Richard's Pipit	<u>A. novaeseelandiae</u>
Pangani Longclaw	<u>Macronyx aurantiigula</u>
African Pied Wagtail	<u>Motacilla aguimp</u>
White Wagtail	<u>M. alba</u>
Grey Wagtail	<u>M. cinerea</u>
Yellow Wagtail	<u>M. flava</u>
Golden Pipit	<u>Imetothylacus tenellus</u>

## MALACONOTIDAE - Bush Shrikes

Black-backed Puffback	<u>Dryoscopus cubia</u>
Tropical Boubou	<u>Laniarius ferrugineus</u>
Slate-coloured Boubou	<u>L. funebris</u>
Grey-headed Bush Shrike	<u>Malaconotus blanchoti</u>
Sulphur-breasted Bush Shrike	<u>M. sulfureopectus</u>
Brubru	<u>Nilaus afer</u>
Three-streaked Tchagra	<u>Tchagra jamesi</u>
Black-headed Tchagra	<u>Tchagra senegala</u>

## LANIIDAE - Shrikes

Long-tailed Fiscal	<u>Lanius cabanisi</u>
Red-backed Shrike	<u>L. colurio</u>
Taita Fiscal	<u>L. dorsalis</u>
Red-tailed Shrike	<u>L. isabellinus</u>

## PRIONOPIDAE - Helmet Shrikes

White Crowned Shrike	<u>Eurocephalus ruepelli</u>
Helmet Shrike	<u>Prionops plumata</u>
Retz's Helmet Shrike	<u>P. retzii</u>

## STURNIDAE - Starlings, Oxpeckers

Golden-breasted Starling	<u>Cosmopsarus regius</u>
Wattled Starling	<u>Creatophora cinerea</u>
Blk-breasted Glossy Starling	<u>Lamprotornis corruscus</u>
Ruppell's Lng-tailed Glossy	<u>L. purpuropterus</u>
Magpie Starling	<u>Speculipastor bicolor</u>
Fischer's Starling	<u>Spreo fischeri</u>
Superb Starling	<u>S. superbus</u>
Red-billed Oxpecker	<u>Buphagus erythrorhynchus</u>

## NECTARINIIDAE - Sunbirds

Collared Sunbird	<u>Anthreptes collaris</u>
E. Violet-backed Sunbird	<u>A. orientalis</u>
Amethyst Sunbird	<u>Nectarina amethystina</u>
Little Purple-breasted Sunbird	<u>N. bifasciata</u>
Hunter's Sunbird	<u>N. hunteri</u>
Violet-breasted Sunbird	<u>N. pembae</u>
Variable Sunbird	<u>N. venusta</u>
Mouse-coloured Sunbird	<u>N. veroxii</u>

## PLOCEIDAE - Weavers

Grosbeak Weaver	<u>Amblyospiza albifrons</u>
Fan-tailed Widowbird	<u>Euplectes axillaris</u>
Fire-fronted Bishop	<u>E. diadematus</u>
Dark-backed Weaver	<u>Ploceus bicolor</u>
Golden Palm Weaver	<u>P. bojeri</u>
Black-headed Weaver	<u>P. cucullatus</u>
Juba Weaver	<u>P. dicrocephalus</u>
Masked Weaver	<u>P. intermedius</u>
Chestnut Weaver	<u>P. rubiginosus</u>
Red-billed Quelea	<u>Quelea quelea</u>
Red-billed Buffalo Weaver	<u>Bubalornis niger</u>
White-headed Buffalo Weaver	<u>Dinemellia dinemelli</u>
White-browed Sparrow Weaver	<u>Plocepasser mahali</u>
Grey-headed Sparrow	<u>Passer griseus</u>
Yellow-spotted Petronia	<u>Petronia pyrgita</u>
Steel-blue Whydah	<u>Vidua hypocherina</u>
Paradise Whydah	<u>V. paradisaea</u>
Pin-tailed Whydah	<u>V. macroura</u>

## ESTRILDIDAE - Waxbills

Waxbill	<u>Estrilda astrild</u>
Crimson-rumped Waxbill	<u>E. rhodopyga</u>
Red-billed Firefinch	<u>Lagonosticta senegala</u>
Green-winged Pytilia	<u>Pytilia melba</u>

## FRINGILLIDAE - Buntings, Canaries, Seedeaters

Somali Golden-breasted Bunting	<u>Emberiza poliopleura</u>
Yellow-rumped Seed-eater	<u>Serinus atroquularis</u>

## APPENDIX D

### SCOPE OF WORK - PHASE II - MIGRATORY BIRDS

Proposed Consultant: Dr. David Pearson

1. The consultant will conduct a three-week consultancy in Somalia beginning in or about November 1987 for Associates in Rural Development, Inc. (ARD), as a part of the Jubba Environmental and Socioeconomic Studies (JESS).
2. The general focus of this consultancy will be to conduct an ornithological survey to determine the importance of the Jubba Valley as a flyway and temporary resting site for palaeartic migratory birds.
3. Upon arrival in Somalia, the consultant will hold briefing meetings with the USAID project manager or designate, JESS team leader or designate, and JESS ecologist to discuss the consultant's scope of work. At this meeting, a means of progress reporting during this consultancy will be defined.
4. The ornithological surveys are to concentrate on the occurrence of migrants in the Jubba floodplain, with less extensive comparative assessment of the bushlands outside the floodplain.
5. The surveys are to include all major types of habitat, including the various types of rainfed and irrigated agriculture.
6. The consultant will predict the likely effects of changes of migrant habitat caused by different types of development within the Jubba Valley, but with an emphasis on proposed agricultural and hydropower development as defined by the Ministry of Jubba Valley Development (MJVD).
7. In a report, the consultant will indicate whether any migratory species are in sufficient density to constitute pest status, or likely to become pests as agricultural and hydropower development proceeds.
8. In the report, the consultant will provide an assessment of the relative importance of the Jubba Valley as a wintering ground or migration route (bearing in mind the outcome of item 4) for birds.
9. A draft typewritten or word-processed report of this consultancy is to be delivered to the JESS team leader one full day before departure from Somalia. This report is to be written in a format that meets guidelines which the consultant will receive from the team leader. This report will be the basis for a final briefing with the USAID project manager, team leader and project personnel from MJVD. Revisions to the final report must be completed within two weeks after reviewing comments from JESS.
10. At the discretion of the JESS team leader, the consultant may be required to present a one-hour training seminar at MJVD on a topic related to this consultancy.