

Colour Flagging Protocol for Migratory Shorebirds in the East Asian–Australasian Flyway



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It is recognised that there is a need to coordinate all colour marking activities for migratory birds throughout the flyway. In this protocol we have attempted to deal only with colour flagging of migratory shorebirds. If the principles embodied here are accepted by all bird banding schemes and researchers, it would then be appropriate to also attempt international coordination of colour banding in the East Asian-Australasian Flyway.

Definitions

For the purposes of this protocol the following definitions apply:

Colour marking is a generic term and refers to the use of any coloured mark or device which permits identification of a bird in the field. In this report we use the following terms to describe various forms of colour marking:

Colour flagging involves attaching a small plastic colour tab or flag to the leg of the bird. These marks look like a colour band with a trailing tab. Colour flags are used to mark cohorts and have mainly been used for studies of migration.

Colour banding refers to the use of coloured bands applied to the legs of birds. Each bird is marked with a unique combination of coloured bands. It is used extensively in breeding and behavioural studies where there is a need to identify a large number of individuals. The durability and colour stability of colour bands is dependent on the material used.

Geographic coverage

This draft colour marking protocol is developed for the East Asian-Australasian Flyway. This flyway includes the following countries:

Australia	Papua New Guinea
Bangladesh	People's Democratic Republic of Korea
Brunei Darussalam	People's Republic of China
Cambodia	Philippines
Indonesia	Republic of Korea
Japan	Russian Federation
Lao People's Democratic Republic	Singapore
Malaysia	Thailand
Mongolia	United States of America (Alaska)
Myanmar	Vietnam
New Zealand	

Shorebirds included

- The draft protocol covers 72 populations representing 60 species of migratory shorebirds (Table 1).
- Colour flagging will be restricted to populations that occur in ecologically significant numbers within each range state (Table 2).
- As many of these species (75%) also occur in other flyways a high level of consultation is needed with colour marking coordinators in other parts of the world (Table 3).

Colour Flagging methods

- A flyway migration study program should be established and that this program have exclusive access to colour leg flags for marking of cohorts.
 - Colour flags should not be used for marking of individuals for behavioural or other studies.
 - Colour bands should not be used in combination with colour flags.
- Colour flagging combinations will be allocated on a regional basis.
- Thirty four regions within the Flyway have been identified as current or potential colour flagging areas (Figure 1).
- Flags will be made from a standard material (Darvic) to agreed dimensions.
- A two flag system would be introduced using six colours. Colour combinations have been allocated for all of the 34 marking regions (Table 4 and 4a).
- Exceptions to the two flag system have been made in three regions where existing protocols involving one flag will be retained. These are sites where large numbers of shorebirds have been flagged in recent years (SE Australia, NW Australia, N Japan). The flag will be attached to the left tibia.
- Flags will be attached to the right leg. In large birds, the two flags will be attached to the right tibia. In smaller shorebirds, one flag will be attached to the right tibia, and one to the right tarsus (Table 5). The metal band would be attached to the left tarsus.

Administration of Colour Flagging projects

- Colour flagging should only be permitted for approved migration research projects.
- Project proposals will be assessed by the appropriate national banding scheme (Figure 2).
- Each banding scheme should maintain a National Register of Colour Flagging Projects.
- An East Asian-Australasian Flyway Register of Colour Flagging Projects should be established.
- The program will be reviewed in the year 2003.

Communication

- An informal liaison group on colour flagging in the Flyway will be established to include a representative of each participating research group. Banding schemes and the national contacts for resightings should also be included. The function of this group is to communicate the activities and results of groups involved in migration research.
- Electronic mail should be the primary tool for communication on colour marking.

Resightings

- National contacts for the reporting of colour marked shorebirds will be identified.
- Banding schemes and researchers should develop programs to increase resightings of colour marked birds.

Collation and publication of results

- The colour flagging liaison group will be responsible for the regular publication of reports on the numbers of shorebirds marked and of resighting of marked shorebirds.
- A newsletter or periodic journal is required for publication of colour marking activities and resightings. Consideration should be given to using existing publications for this purpose.

Table 1

Shorebird Populations of the Asia-Pacific Region

English Name	Scientific Name	Population	Status	Flyway
Comb-crested Jacana	<i>Irediparra gallinacea gallinacea</i>	S Philippines, E Indonesia	Sedentary	EAA
Comb-crested Jacana	<i>Irediparra gallinacea novaeguineae</i>	N, Cent New Guinea & Is	Sedentary	EAA
Comb-crested Jacana	<i>Irediparra gallinacea novaehollandiae</i>	S New Guinea & N, E Aust	Sedentary	EAA
Pheasant-tailed Jacana	<i>Hydrophasianus chirurgus</i>	S Asia, W SE Asia, S E Asia	Migrant	CAI,EAA
Bronze-winged Jacana	<i>Metopidius indicus</i>	S Asia, Westernmost SE Asia	Sedentary	CAI,EAA
Painted Snipe	<i>Rostratula benghalensis benghalensis</i>	Asia	Migrant	CAI,EAA
Painted Snipe	<i>Rostratula benghalensis benghalensis</i>	Australia	Sedentary	EAA
Crab Plover	<i>Dromas ardeola</i>	NW Ind Ocean, Red Sea, Gulf	Migrant	WAEA,CAI,EAA
Eurasian Oystercatcher	<i>Haematopus ostralegus longipes</i>	E Afr, SW, S Asia (nb)	Migrant	WAEA,CAI
Eurasian Oystercatcher	<i>Haematopus ostralegus osculans</i>	E Asia	Sedentary	CAI,EAA
South Is. Pied Oystercatcher	<i>Haematopus finschii</i>	New Zealand	Sedentary	EAA
Pied Oystercatcher	<i>Haematopus longirostris</i>	Australia	Sedentary	EAA
Variable Oystercatcher	<i>Haematopus unicolor unicolor</i>	New Zealand	Sedentary	EAA
Chatham Island Oystercatcher	<i>Haematopus unicolor chathamensis</i>	Chatham Is	Sedentary	EAA
Sooty Oystercatcher	<i>Haematopus fuliginosus fuliginosus</i>	Australia	Sedentary	EAA
Sooty Oystercatcher	<i>Haematopus fuliginosus ophthalmicus</i>	NE Australia	Sedentary	EAA
Ibisbill	<i>Ibidorhyncha struthersii</i>	S, E Asia highlands	Sedentary	CAI,EAA
Black-winged Stilt	<i>Himantopus himantopus himantopus</i>	S Asia	Migrant	CAI
Black-winged Stilt	<i>Himantopus himantopus himantopus</i>	SE Asia (nb)	Migrant	EAA
Black-winged Stilt	<i>Himantopus himantopus ceylonensis</i>	Sri Lanka	Sedentary	CAI
Black-winged Stilt	<i>Himantopus himantopus knudseni</i>	Hawaii	Sedentary	WP
Australian Stilt	<i>Himantopus leucocephalus</i>	NZ, Australia, New Guinea	Migrant	EAA
Black Stilt	<i>Himantopus novaezelandiae</i>	New Zealand	Sedentary	EAA
Banded Stilt	<i>Cladorhynchus leucephalus</i>	Australia	Sedentary	EAA
Pied Avocet	<i>Recurvirostra avosetta</i>	Central, Southern Asia (nb)	Migrant	CAI
Pied Avocet	<i>Recurvirostra avosetta</i>	E Asia (bre)	Migrant	EAA
Red-necked Avocet	<i>Recurvirostra novaehollandiae</i>	Australia	Sedentary	EAA
Stone Curlew	<i>Burhinus oedicephalus harterti</i>	W Asia (bre)	Migrant	WAEA,CAI
Stone Curlew	<i>Burhinus oedicephalus indicus</i>	Southern, SE Asia	Sedentary	CAI,EAA
Bush Stone Curlew	<i>Burhinus grallarius gallarius</i>	Australia	Sedentary	EAA
Bush Stone Curlew	<i>Burhinus grallarius rufecens</i>	NW Australia	Sedentary	EAA
Bush Stone Curlew	<i>Burhinus grallarius ramsayi</i>	N Queensland	Sedentary	EAA
Great Thick-knee	<i>Burhinus recurvirostris</i>	SE Iran, S Asia, N SE Asia	Sedentary	CAI,EAA
Beach Thick-knee	<i>Burhinus giganteus</i>	N Aust., PNG, SE Asia, Phil.	Sedentary	EAA,WP
Jerdon's Courser	<i>Rhinoptilus bitorquatus</i>	Southeastern India	Sedentary	CAI
Cream-coloured Courser	<i>Cursorius cursor bogulubovi</i>	N Iran, E Caspian Basin (bre)	Migrant	CAI
Indian Courser	<i>Cursorius coromandelicus</i>	Southern Asia	Sedentary	CAI
Oriental Pratincole	<i>Glareola maldivarum</i>	S Asia (nb)	Migrant	CAI
Oriental Pratincole	<i>Glareola maldivarum</i>	E, SE Asia, Australia (nb)	Migrant	EAA
Black-winged Pratincole	<i>Glareola nordmanni</i>	W, Cent Asia; W, S Africa	Sedentary	CAI
Little Pratincole	<i>Glareola lactea</i>	S Asia; NW, SE Asia	Migrant	CAI,EAA
Australian Pratincole	<i>Stiltia isabella</i>	Australia, PNG, E Indonesia	Migrant	EAA
Pacific Golden Plover	<i>Pluvialis fulva</i>	E Africa, SW, S Asia (nb)	Migrant	WAEA,CAI
Pacific Golden Plover	<i>Pluvialis fulva</i>	E, SE Asia, Aust (nb)	Migrant	EAA,WP
Grey Plover	<i>Pluvialis squatarola</i>	S Asia (nb)	Migrant	CAI
Grey Plover	<i>Pluvialis squatarola</i>	E, SE Asia, Aust (nb)	Migrant	EAA
New Zealand Dotterel	<i>Charadrius obscurus</i>	New Zealand (bre)	Sedentary	EAA
New Zealand Dotterel	<i>Charadrius obscurus</i>	Stewart Is (bre)	Sedentary	EAA
Long-billed Plover	<i>Charadrius placidus</i>	E Asia, Northern SE Asia (nb)	Migrant	EAA
Little Ringed Plover	<i>Charadrius dubius dubius</i>	SE Asia (nb)	Sedentary	CAI
Little Ringed Plover	<i>Charadrius dubius curonicus</i>	E Africa, W, SW Asia (nb)	Migrant	WAEA,CAI,EAA

English Name	Scientific Name	Population	Status	Flyway
Little Ringed Plover	<i>Charadrius dubius jerdoni</i>	S, SE Asia (nb)	Migrant	CAI,EAA
Little Ringed Plover	<i>Charadrius dubius papuans</i>	Papua New Guinea	Sedentary	EAA
Kentish Plover	<i>Charadrius alexandrinus alexandrinus</i>	S Asia (nb)	Migrant	CAI,EAA
Kentish Plover	<i>Charadrius alexandrinus dealbatus</i>	E, SE Asia (nb)	Migrant	EAA
Kentish Plover	<i>Charadrius alexandrinus seebohmi</i>	Sri Lanka, SE India	Sedentary	CAI
Red-capped Dotterel	<i>Charadrius ruficapillus</i>	Australia	Sedentary	EAA
Malaysian Sand Plover	<i>Charadrius peronii</i>	SE Asia (nb)	Sedentary	EAA
Javanese Plover	<i>Charadrius javanicus</i>	Java	Sedentary	EAA
Double-banded Plover	<i>Charadrius bicinctus bicinctus</i>	New Zealand (bre)	Migrant	EAA
Double-banded Plover	<i>Charadrius bicinctus exilis</i>	Auckland Islands (bre)	Sedentary	EAA
Lesser Sand Plover	<i>Charadrius mongolus mongolus</i>	E Asia, S SE Asia (nb)	Migrant	EAA
Lesser Sand Plover	<i>Charadrius mongolus pamirensis</i>	E Africa, SW Asia (nb)	Migrant	WAEA,CAI
Lesser Sand Plover	<i>Charadrius mongolus atrifrons</i>	S Asia, N SE Asia (nb)	Migrant	CAI,EAA
Lesser Sand Plover	<i>Charadrius mongolus schaeferi</i>	Thailand, Bangladesh (nb)	Migrant	EAA
Lesser Sand Plover	<i>Charadrius mongolus stegmanni</i>	Eastern SE Asia, Aust (nb)	Migrant	EAA
Greater Sand Plover	<i>Charadrius leschenaultii leschenaultii</i>	Southern Asia (nb)	Migrant	CAI
Greater Sand Plover	<i>Charadrius leschenaultii leschenaultii</i>	E Asia, SE Asia, Aust (nb)	Migrant	EAA
Eastern Sand Plover	<i>Charadrius veredus</i>	E, SE Asia, Australia (nb)	Migrant	EAA
Hooded Plover	<i>Charadrius rubicollis</i>	Australia	Sedentary	EAA
Shore Plover	<i>Charadrius novaeseelandiae</i>	Chatham Island	Sedentary	EAA
Red-kneed Dotterel	<i>Erythronyctes alpestris</i>	Australia	Sedentary	EAA
Wrybill	<i>Anarhynchus frontalis</i>	New Zealand	Sedentary	EAA
Inland Dotterel	<i>Pelthodytes australis</i>	Australia	Sedentary	EAA
Black-fronted Plover	<i>Elseya melanops</i>	Australia, New Zealand	Sedentary	EAA
Northern Lapwing	<i>Vanellus vanellus</i>	S Asia (nb)	Migrant	CAI
Northern Lapwing	<i>Vanellus vanellus</i>	E, SE Asia (nb)	Migrant	EAA
Yellow-wattled Lapwing	<i>Vanellus malabaricus</i>	S Asia	Sedentary	CAI
Javanese-wattled Lapwing	<i>Vanellus macropterus</i>	Java	Extinct	EAA
Banded Lapwing	<i>Vanellus tricolor</i>	Australia	Sedentary	EAA
Masked Plover	<i>Vanellus miles miles</i>	PNG, N Australia	Sedentary	EAA
Masked Plover	<i>Vanellus miles novaehollandiae</i>	E, S Aust, New Zealand	Sedentary	EAA
River Lapwing	<i>Vanellus duvaucelli</i>	Eastern S Asia, N SE Asia	Sedentary	CAI,EAA
Grey-headed Lapwing	<i>Vanellus cinereus</i>	E, SE Asia, NE S Asia (nb)	Migrant	EAA
Red-wattled Lapwing	<i>Vanellus indicus indicus</i>	S Asia	Sedentary	CAI
Red-wattled Lapwing	<i>Vanellus indicus lankae</i>	Sri Lanka	Sedentary	CAI
Red-wattled Lapwing	<i>Vanellus indicus atronuchalis</i>	SE Asia	Sedentary	EAA
Sociable Plover	<i>Vanellus gregarius</i>	S Asia (nb)	Migrant	CAI
White-tailed Plover	<i>Vanellus leucurus</i>	S Asia (nb)	Migrant	CAI
Eurasian Woodcock	<i>Scolopax rusticola</i>	Asia	Migrant	CAI,EAA
Anami Woodcock	<i>Scolopax mira</i>	Japan	Sedentary	EAA
Dusky Woodcock	<i>Scolopax saturata saturata</i>	Sumatra, Java	Sedentary	EAA
Dusky Woodcock	<i>Scolopax saturata rosenbergii</i>	N Papua New Guinea	Sedentary	EAA
Celebes Woodcock	<i>Scolopax celebensis celebensis</i>	S Sulawesi	Sedentary	EAA
Celebes Woodcock	<i>Scolopax celebensis henrichi</i>	NW Sulawesi	Sedentary	EAA
Obi Woodcock	<i>Scolopax rochussenii</i>	Moluccas	Extinct	EAA
Solitary Snipe	<i>Gallinago solitaria solitaria</i>	Northern S, SE Asia, E Asia (nb)	Migrant	CAI,EAA
Solitary Snipe	<i>Gallinago solitaria japonica</i>	Japan (nb)	Migrant	EAA
Japanese Snipe	<i>Gallinago hardwickii</i>	Japan / Eastern Australia	Migrant	EAA
Wood Snipe	<i>Gallinago nemoricola</i>	Eastern S Asia, N SE Asia	Migrant	CAI,EAA
Pintail Snipe	<i>Gallinago stenura</i>	Eastern Africa, S Asia (nb)	Migrant	CAI
Pintail Snipe	<i>Gallinago stenura</i>	E, SE Asia (nb)	Migrant	EAA
Swinhoe's Snipe	<i>Gallinago megala</i>	E, S, SE Asia, N Australia (nb)	Migrant	CAI,EAA
Common Snipe	<i>Gallinago gallinago gallinago</i>	S Asia (nb)	Migrant	CAI
Common Snipe	<i>Gallinago gallinago gallinago</i>	E, SE Asia (nb)	Migrant	EAA
Jack Snipe	<i>Lymnocyptes minimus</i>	S Asia (nb)	Migrant	CAI
Jack Snipe	<i>Lymnocyptes minimus</i>	E, SE Asia (nb)	Migrant	EAA

English Name	Scientific Name	Population	Status	Flyway
Chatham Island Snipe	<i>Coenocorypha pusilla</i>	Chatham Island	Sedentary	EAA
New Zealand Snipe	<i>Coenocorypha a. aucklandica</i>	Auckland Island	Sedentary	EAA
New Zealand Snipe	<i>Coenocorypha a. meinertzhagenae</i>	Antipodes Is	Sedentary	EAA
New Zealand Snipe	<i>Coenocorypha a. heuegeli</i>	Snares Is	Sedentary	EAA
New Zealand Snipe	<i>Coenocorypha a. barrierensis</i>	Lattle Barrier Is	Extinct	EAA
New Zealand Snipe	<i>Coenocorypha a. iredalei</i>	South Cape Is	Extinct	EAA
Black-tailed Godwit	<i>Limosa limosa limosa</i>	S Asia (nb)	Migrant	CAI,EAA
Black-tailed Godwit	<i>Limosa limosa melanuroides</i>	E, SE Asia, PNG, Aust (nb)	Migrant	EAA
Bar-tailed Godwit	<i>Limosa lapponica lapponica</i>	E Africa, SW Asia (nb)	Migrant	WAEA,CAI
Bar-tailed Godwit	<i>Limosa lapponica menzbieri</i>	SE Asia, W Aust. (nb)	Migrant	EAA
Bar-tailed Godwit	<i>Limosa lapponica baueri</i>	E Aust, NZ (nb)	Migrant	WP
Little Curlew	<i>Numenius minutus</i>	NE Asia, PNG, Australia	Migrant	EAA
Whimbrel	<i>Numenius phaeopus phaeopus</i>	S Asia (nb)	Migrant	CAI,EAA
Whimbrel	<i>Numenius phaeopus variegatus</i>	SE Asia, PNG, Aust (nb)	Migrant	EAA
Bristle-thighed Curlew	<i>Numenius tahitiensis</i>	Western Alaska / Oceania	Migrant	WP
Eurasian Curlew	<i>Numenius arquata orientalis</i>	S Asia (nb)	Migrant	CAI
Eurasian Curlew	<i>Numenius arquata orientalis</i>	E, SE Asia (nb)	Migrant	EAA
Far Eastern Curlew	<i>Numenius madagascariensis</i>	E, SE Asia, Aust (nb)	Migrant	EAA
Spotted Redshank	<i>Tringa erythropus</i>	S Asia (nb)	Migrant	CAI
Spotted Redshank	<i>Tringa erythropus</i>	E, SE Asia (nb)	Migrant	EAA
Common Redshank	<i>Tringa totanus ussuriensis</i>	S, SE, E Asia (nb)	Migrant	CAI,EAA
Common Redshank	<i>Tringa totanus terrignotae</i>	E China (bre)	Migrant	EAA
Common Redshank	<i>Tringa totanus craggi</i>	Northwestern Sinkiang (bre)	Migrant	CAI,EAA
Common Redshank	<i>Tringa totanus eurhinus</i>	Kashmir, W China (bre)	Migrant	WAEA,CAI,EAA
Marsh Sandpiper	<i>Tringa stagnatilis</i>	S Asia (nb)	Migrant	CAI
Marsh Sandpiper	<i>Tringa stagnatilis</i>	E, SE Asia, Aust (nb)	Migrant	EAA
Common Greenshank	<i>Tringa nebularia</i>	S Asia (nb)	Migrant	CAI
Common Greenshank	<i>Tringa nebularia</i>	E, SE Asia, Aust (nb)	Migrant	EAA
Spotted Greenshank	<i>Tringa guttifer</i>	Sakhalin Is / Bangl-Malaysia	Migrant	EAA
Green Sandpiper	<i>Tringa ochropus</i>	S Asia (nb)	Migrant	CAI
Green Sandpiper	<i>Tringa ochropus</i>	E, SE Asia (nb)	Migrant	EAA
Wood Sandpiper	<i>Tringa glareola</i>	S Asia (nb)	Migrant	CAI
Wood Sandpiper	<i>Tringa glareola</i>	E, SE Asia, Aust (nb)	Migrant	EAA
Terek Sandpiper	<i>Tringa cinereus</i>	S Asia (nb)	Migrant	CAI
Terek Sandpiper	<i>Tringa cinereus</i>	E, SE Asia, PNG, Aust (nb)	Migrant	EAA
Common Sandpiper	<i>Tringa hypoleucos</i>	S Asia (nb)	Migrant	CAI
Common Sandpiper	<i>Tringa hypoleucos</i>	E, SE Asia, Aust (nb)	Migrant	EAA
Grey-tailed Tattler	<i>Tringa brevipes</i>	E, SE Asia, PNG, Aust (nb)	Migrant	EAA
Wandering Tattler	<i>Tringa incanus</i>	NW North Am / Cent S Pacific	Migrant	EAA,WP
Tuamotu Sandpiper	<i>Prosobonia cancellata</i>	Tuamotu Archipelago	Sedentary	WP
White-winged Sandpiper	<i>Probonia leucoptera</i>	Tahiti	Extinct	WP
Ruddy Turnstone	<i>Arenaria interpres interpres</i>	South Asia (nb)	Migrant	EAA
Ruddy Turnstone	<i>Arenaria interpres interpres</i>	E, SE Asia, Aust, NZ (nb)	Migrant	WP
Asian Dowitcher	<i>Limnodromus semipalmatus</i>	SE Asia (nb)	Migrant	EAA
Great Knot	<i>Calidris tenuirostris</i>	SW Asia, W S Asia (nb)	Migrant	CAI
Great Knot	<i>Calidris tenuirostris</i>	E, SE Asia, PNG, Aust (nb)	Migrant	CAI,EAA
Red Knot	<i>Calidris canutus rogersi</i>	PNG, Australia, NZ (nb)	Migrant	EAA
Sanderling	<i>Calidris alba</i>	S Asia (nb)	Migrant	CAI
Sanderling	<i>Calidris alba</i>	E, SE Asia, Aust (nb)	Migrant	EAA
Little Stint	<i>Calidris minuta</i>	S Asia (nb)	Migrant	CAI
Red-necked Stint	<i>Calidris ruficollis</i>	E Sib / SE, S Asia; Australia	Migrant	CAI,EAA
Temminck's Stint	<i>Calidris temminckii</i>	S, SE Asia, Aust (nb)	Migrant	CAI,EAA
Long-toed Stint	<i>Calidris subminuta</i>	Sib / E, S Asia, Australia	Migrant	CAI,EAA
Pectoral Sandpiper	<i>Calidris melanotos</i>	E Asia, Australia (nb)	Migrant	EAA
Sharp-tailed Sandpiper	<i>Calidris acuminata</i>	E Sib / PNG, Australia	Migrant	EAA
Rock Sandpiper	<i>Calidris ptilocnemis ptilocnemis</i>	Pribilof Is (bre)	Sedentary	WP

English Name	Scientific Name	Population	Status	Flyway
Rock Sandpiper	<i>Calidris ptilocnemis tschuktschorum</i>	E Siberia, Alaska (bre)	Migrant	WP
Rock Sandpiper	<i>Calidris ptilocnemis couesi</i>	Aleutian Is (bre)	Sedentary	WP
Rock Sandpiper	<i>Calidris ptilocnemis quarta</i>	Kurile Is (bre)	Sedentary	WP
Dunlin	<i>Calidris alpina alpina</i>	Southern Asia (nb)	Migrant	CAI
Dunlin	<i>Calidris alpina sakhalina</i>	E, SE Asia (nb)	Migrant	EAA
Curlew Sandpiper	<i>Calidris ferruginea</i>	S Asia (nb)	Migrant	CAI
Curlew Sandpiper	<i>Calidris ferruginea</i>	E, SE Asia, Aust (nb)	Migrant	EAA
Spoon-billed Sandpiper	<i>Eurynorhynchus pygmaeus</i>	Far E Siberia / Bay of Bengal	Migrant	CAI,EAA
Broad-billed Sandpiper	<i>Limicola falcinellus falcinellus</i>	Central Siberia / S Asia	Migrant	CAI
Broad-billed Sandpiper	<i>Limicola falcinellus sibirica</i>	E Siberia / E, SE Asia, Aust	Migrant	EAA
Ruff	<i>Philomachus pugnax</i>	Southern Asia (nb)	Migrant	CAI,EAA
Red-necked Phalarope	<i>Phalaropus lobatus</i>	Eurasia (bre)	Migrant	WAEA,CAI,EAA

LEGEND

EAE	East African-Eurasian Flyway
CAI	Central Asian-Indian Flyway
EAA	East Asian-Australasian Flyway
WAEA	West African-Eurasian Flyway
WP	West Pacific Flyway
PF	Pacific Flyway (Pacific coast of the Americas)
(bre)	breeding distribution
(nb)	non-breeding distribution

Table 2

Shorebird Populations Recommended for Colour Flagging within each Range State

Scientific Name	1% Criteria	RFE	BAN	MYA	THA	MAS	SIN	INA	AUS	NZD	PNG	BRU	PHI	CAM	VIE	LAO	CHN	MGL	JAP	KOR	PRK	ALA	
<i>Hydrophasianus chirurgus</i>	250		X	X	X									X	X	X	X	X					
<i>Rostratula benghalensis benghalensis</i>	250			X	X	X	X	X				X	X	X	X	X	X			X			
<i>Dromas ardeola</i>	430		X																				
<i>Himantopus himantopus himantopus</i>	100			X	X								X	X	X	X	X						
<i>Himantopus leucocephalus</i>	1000							X	X	X	X												
<i>Recurvirostra avosetta</i>	100			X														X	X				
<i>Glareola maldivarum</i>	670				X	X		X	X		X	X	X	X	X	X	X			X			
<i>Glareola lactea</i>	100		X	X	X									X	X	X	X						
<i>Stiltia isabella</i>	600							X	X		X												
<i>Pluvialis fulva</i>	1000	X		X	X	X	X	X	X	X	X		X					X	X	X			X
<i>Pluvialis squatarola</i>	250	X		X	X	X		X	X				X		?		X	X	X	X			X
<i>Charadrius placidus</i>	100	X	X	X	X	X						X			X	X	X			X	X	X	
<i>Charadrius dubius curonicus</i>	100	X	X	X	X	X		X					X	X	X	X	X	X	X	X	X	X	
<i>Charadrius dubius jerdoni</i>	250		X	X	X									X	X	X							
<i>Charadrius alexandrinus alexandrinus</i>	250	X	X	X	X													X	X				
<i>Charadrius alexandrinus dealbatus</i>	250					X		X				X	X	X	X	X	X			X	X	X	
<i>Charadrius mongolus mongolus</i>	250	X						X	X		X		X				X			X	?	?	
<i>Charadrius mongolus atrifrons</i>	1000		X	X	X	X		X				X		X	X		X						
<i>Charadrius mongolus schaeferi</i>	100		X	X	X	X		X	?			X		X	X		X						
<i>Charadrius mongolus stegmanni</i>	100	X							X								X			X	X	X	
<i>Charadrius leschenaultii leschenaultii</i>	990	X		X	X	X		X	X		X	?	X	X	X		X	X					
<i>Charadrius veredus</i>	440	X							X								X	X					
<i>Vanellus vanellus</i>	250	X	?	X													X	X	X				
<i>Vanellus cinereus</i>	100	X	X	X	X	X	X					X	X		X	X	X	?	X	X			

Scientific Name	1% Criteria	RFE	BAN	MYA	THA	MAS	SIN	INA	AUS	NZD	PNG	BRU	PHI	CAM	VIE	LAO	CHN	MGL	JAP	KOR	PRK	ALA
<i>Scolopax rusticola</i>	100	X		X										?	X	X	X	X	X			
<i>Gallinago solitaria solitaria</i>	100	X	X	X													X	X				
<i>Gallinago solitaria japonica</i>		X															X		X	X	X	
<i>Gallinago hardwickii</i>	360	X							X										X			
<i>Gallinago nemoricola</i>			X	X											X	X	?					
<i>Gallinago stenura</i>	250	X		X	X	X	X	X	X			X	X	X	X	X	X	X	X	X	X	X
<i>Gallinago megala</i>	250	X		X	?	X	X	X	X			X	X	X			X	X				
<i>Gallinago gallinago gallinago</i>	1000	X		X	X	X	X	X				X	X	X	X	X	X	X	X	X	X	?
<i>Limnocyptes minimus</i>	100	X		X											?		X	X				
<i>Limosa limosa limosa</i>	1000	X	X	X													X					
<i>Limosa limosa melanuroides</i>	1600	X	X	X	X	X		X	X		X				X		X	X	X	X	X	?
<i>Limosa lapponica menzbieri</i>	1800	X	X	X	X	X		X	X				?		?		X			?	?	
<i>Limosa lapponica baueri</i>	1500	X							X	X	?		?						X	X	X	X
<i>Numenius minutus</i>	2000	X						X	X								X	?				
<i>Numenius phaeopus phaeopus</i>	250	X	X	X	X	X											?					
<i>Numenius phaeopus variegatus</i>	400	X	X	X	X	X		X	X		X				X		X		X	X	X	?
<i>Numenius arquata orientalis</i>	100	X		X	X	X		X					X	?	X		X	X	?	X	X	
<i>Numenius madagascariensis</i>	210	X				X		X	X	X	X		X				X			X		
<i>Tringa erythropus</i>	100	X	X	X											?	X	X		X	X		
<i>Tringa totanus ussuriensis</i>	100																					
<i>Tringa totanus terrignotae</i>	100			X	X	X		X					X	?	X		X		X			
<i>Tringa totanus craggi</i>	100			X	X	X											?	?	?			
<i>Tringa totanus eurhinus</i>	250		X	X	X	X									?	X	X		X			
<i>Tringa stagnatilis</i>	900	X		X	X	X	X	X	X		X		X	X	X		X					
<i>Tringa nebularia</i>	400	X		X	X	X		X	X		X		X	X	X	?	X		X	X	X	
<i>Tringa guttifer</i>	10	X	X	X	X	X	X	X					X		X		X		X	X	X	
<i>Tringa ochropus</i>	250	X		X	X								X		X		X	X				
<i>Tringa glareola</i>	1000	X		X	X	X		X	X		X	X	X	X	X	X	X	X	X	X	X	
<i>Tringa cinereus</i>	360	X		X	X	X	X	X	X		X		X		X		X		X	X		?
<i>Tringa hypoleucos</i>	300	X		X	X	X	X	X	X		X	X	X	X	X	?	X	X	X	X	X	?
<i>Tringa brevipes</i>	250	X				X		X	X			X	X				X		X	X		

Scientific Name	1% Criteria	RFE	BAN	MYA	THA	MAS	SIN	INA	AUS	NZD	PNG	BRU	PHI	CAM	VIE	LAO	CHN	MGL	JAP	KOR	PRK	ALA	
<i>Arenaria interpres interpres</i>	100	X	X	X	X	X		X	X	X	X		X		X		X		X	X		?	
<i>Limnodromus semipalmatus</i>	180	X	?		X	X		X	X						?		X	X					
<i>Calidris tenuirostris</i>	3300	X						X	X		?						X		X	X	?		
<i>Calidris canutus rogersi</i>	2000	X							X	X	?						X					X	
<i>Calidris alba</i>	100	X			X	X		X	X		?		X		X		X	X					
<i>Calidris ruficollis</i>	4700	X	X	X	X	X		X	X		X		X	X	X		X		X	X	X		
<i>Calidris temminckii</i>	250	X	X	X	X										X		X		X				
<i>Calidris subminuta</i>	250	X	X	X	X	X		X	X			X	X	X	X		X	?	X				
<i>Calidris melanotos</i>		X						?	?													?	
<i>Calidris acuminata</i>	1700	X						X	X		?		X				X		X	X		X	
<i>Calidris alpina sakhalina</i>	1300	X															X		X	X	X	X	
<i>Calidris ferruginea</i>	2500	X		X	X	X	X	X	X		X		X	X	X		X		X	X	X		
<i>Eurynorhynchus pygmaeus</i>	50	X	X	X	X	X	X								X		X		X	X	X		
<i>Limicola falcinellus sibirica</i>	160	X	X	X	X	X		X	X				X		?		X		X				
<i>Philomachus pugnax</i>	250	X	X	?	?										?		X						
<i>Phalaropus lobatus</i>	20000	X				X		X			X		X				X					X	
Totals	71	68	53	29	48	43	39	12	40	36	6	23	15	36	26	43	17	63	25	40	30	22	11

LEGEND

ALA	Alaska (US)
AUS	Australia
BAN	Bangladesh
BRU	Brunei Darussalam
CAM	Cambodia
CHN	People's Republic of China
INA	Indonesia
JAP	Japan
KOR	Republic of Korea
LAO	Lao People's Democratic Republic

MAS	Malaysia
MGL	Mongolia
MYA	Myanmar
NZD	New Zealand
PHI	Philippines
PNG	Papua New Guinea
PRK	People's Democratic Republic of Korea
RFE	Russian Federation (Far East)
SIN	Singapore
THA	Thailand
VIE	Vietnam

Table 3

Distribution of East Aisan-Australasian Flyway Species in other Flyways of the World

English Name	Scientific Name	Africa-Eurasia	Central Asian - Indian Flyway	West Pacific Flyway	The Americas
Pheasant-tailed Jacana	<i>Hydrophasianus chirurgus</i>		X		
Painted Snipe	<i>Rostratula benghalensis</i>	X	X		
Crab Plover	<i>Dromas ardeola</i>	X	X		
Black-winged Stilt	<i>Himantopus himantopus</i>	X	X	X	X
Australian Stilt	<i>Himantopus leucocephalus</i>				
Pied Avocet	<i>Recurvirostra avosetta</i>	X	X		X
Oriental Pratincole	<i>Glareola maldivarum</i>				
Little Pratincole	<i>Glareola lactea</i>		X		
Australian Pratincole	<i>Stiltia isabella</i>				
Pacific Golden Plover	<i>Pluvialis fulva</i>			X	
Grey Plover	<i>Pluvialis squatarola</i>	X	X	X	X
Long-billed Plover	<i>Charadrius placidus</i>				
Little Ringed Plover	<i>Charadrius dubius</i>	X	X		
Kentish Plover	<i>Charadrius alexandrinus</i>	X	X		X
Double-banded Plover	<i>Charadrius bicinctus</i>				
Lesser Sand Plover	<i>Charadrius mongolus</i>	X	X	X	
Greater Sand Plover	<i>Charadrius leschenaultii</i>	X	X		
Eastern Sand Plover	<i>Charadrius veredus</i>				
Northern Lapwing	<i>Vanellus vanellus</i>	X	X		
Grey-headed Lapwing	<i>Vanellus cinereus</i>				
Eurasian Woodcock	<i>Scolopax rusticola</i>	X	X		
Solitary Snipe	<i>Gallinago solitaria</i>		X		
Japanese Snipe	<i>Gallinago hardwickii</i>				
Wood Snipe	<i>Gallinago nemoricola</i>		X		
Pintail Snipe	<i>Gallinago stenura</i>	X	X		
Swinhoe's Snipe	<i>Gallinago megala</i>		X		
Common Snipe	<i>Gallinago gallinago</i>	X	X		X
Jack Snipe	<i>Lymnocyptes minimus</i>	X	X		X
Black-tailed Godwit	<i>Limosa limosa</i>	X	X		
Bar-tailed Godwit	<i>Limosa lapponica</i>	X	X	X	
Little Curlew	<i>Numenius minutus</i>				
Whimbrel	<i>Numenius phaeopus</i>	X	X	X	X
Eurasian Curlew	<i>Numenius arquata</i>	X	X		
Far Eastern Curlew	<i>Numenius madagascariensis</i>				
Spotted Redshank	<i>Tringa erythropus</i>	X	X		
Common Redshank	<i>Tringa totanus</i>	X	X		
Marsh Sandpiper	<i>Tringa stagnatilis</i>	X	X		
Common Greenshank	<i>Tringa nebularia</i>	X	X		
Spotted Greenshank	<i>Tringa guttifer</i>				
Green Sandpiper	<i>Tringa ochropus</i>	X	X		
Wood Sandpiper	<i>Tringa glareola</i>	X	X		
Terek Sandpiper	<i>Tringa cinereus</i>	X	X		
Common Sandpiper	<i>Tringa hypoleucos</i>	X	X		
Grey-tailed Tattler	<i>Tringa brevipes</i>			X	
Ruddy Turnstone	<i>Arenaria interpres</i>	X	X	X	X
Asian Dowitcher	<i>Limnodromus semipalmatus</i>				
Great Knot	<i>Calidris tenuirostris</i>		X		
Red Knot	<i>Calidris canutus</i>				

English Name	Scientific Name	Africa-Eurasia	Central Asian - Indian Flyway	West Pacific Flyway	The Americas
Sanderling	<i>Calidris alba</i>	X	X	X	X
Red-necked Stint	<i>Calidris ruficollis</i>		X		
Temminck's Stint	<i>Calidris temminckii</i>	X	X		
Long-toed Stint	<i>Calidris subminuta</i>		X		
Pectoral Sandpiper	<i>Calidris melanotos</i>				X
Sharp-tailed Sandpiper	<i>Calidris acuminata</i>				
Dunlin	<i>Calidris alpina</i>	X	X		X
Curlew Sandpiper	<i>Calidris ferruginea</i>	X	X		
Spoon-billed Sandpiper	<i>Eurynorhynchus pygmaeus</i>		X		
Broad-billed Sandpiper	<i>Limicola falcinellus</i>	X	X		
Ruff	<i>Philomachus pugnax</i>	X	X		
Red-necked Phalarope	<i>Phalaropus lobatus</i>	X	X	X	X
Totals	60	34	43	10	12
Percentage Overlap (%)		57	72	17	20

Figure 1

Colour Flagging Regions in the East Asian - Australasian Flyway

(see Table 4 for key to codes)

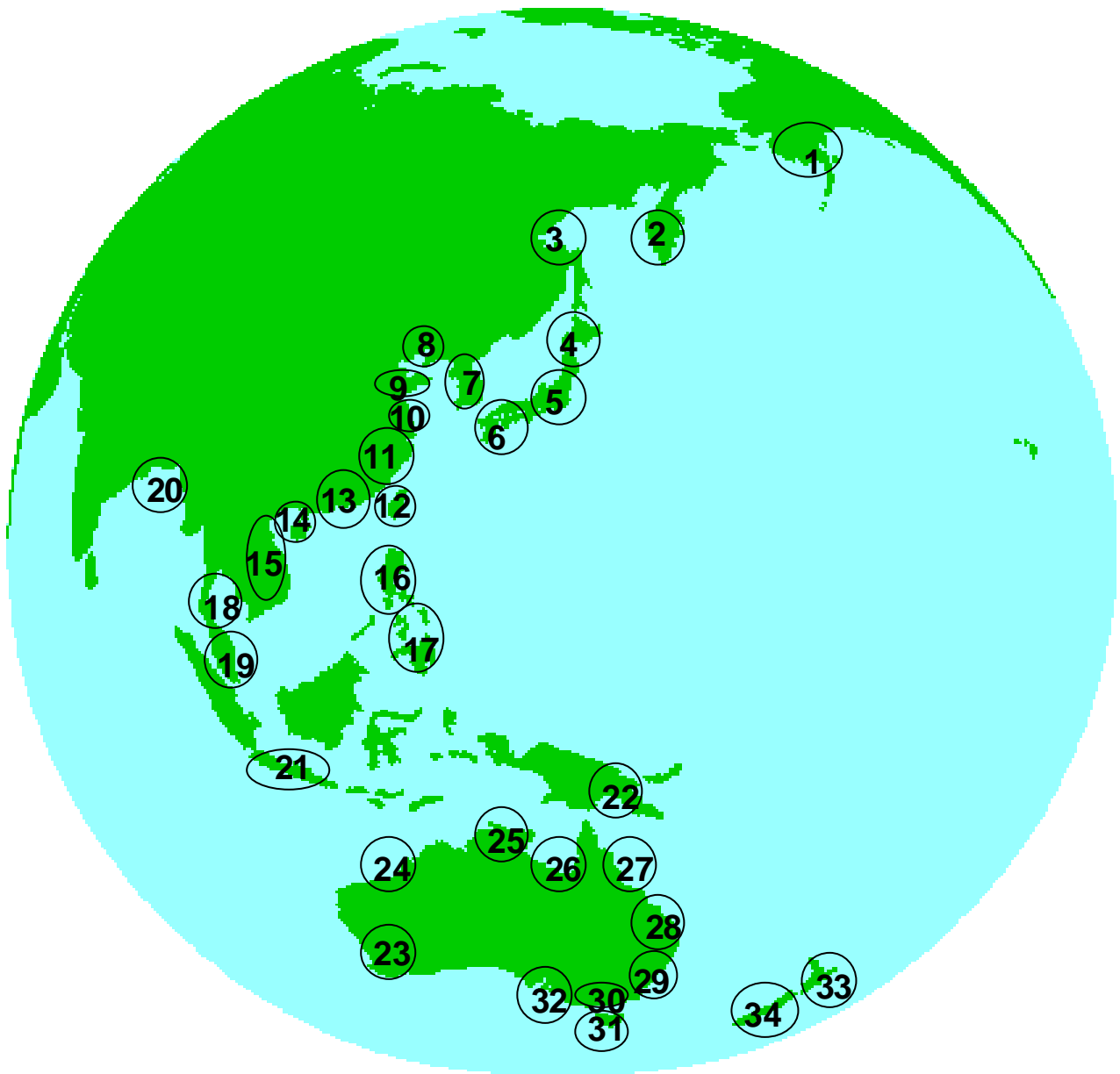
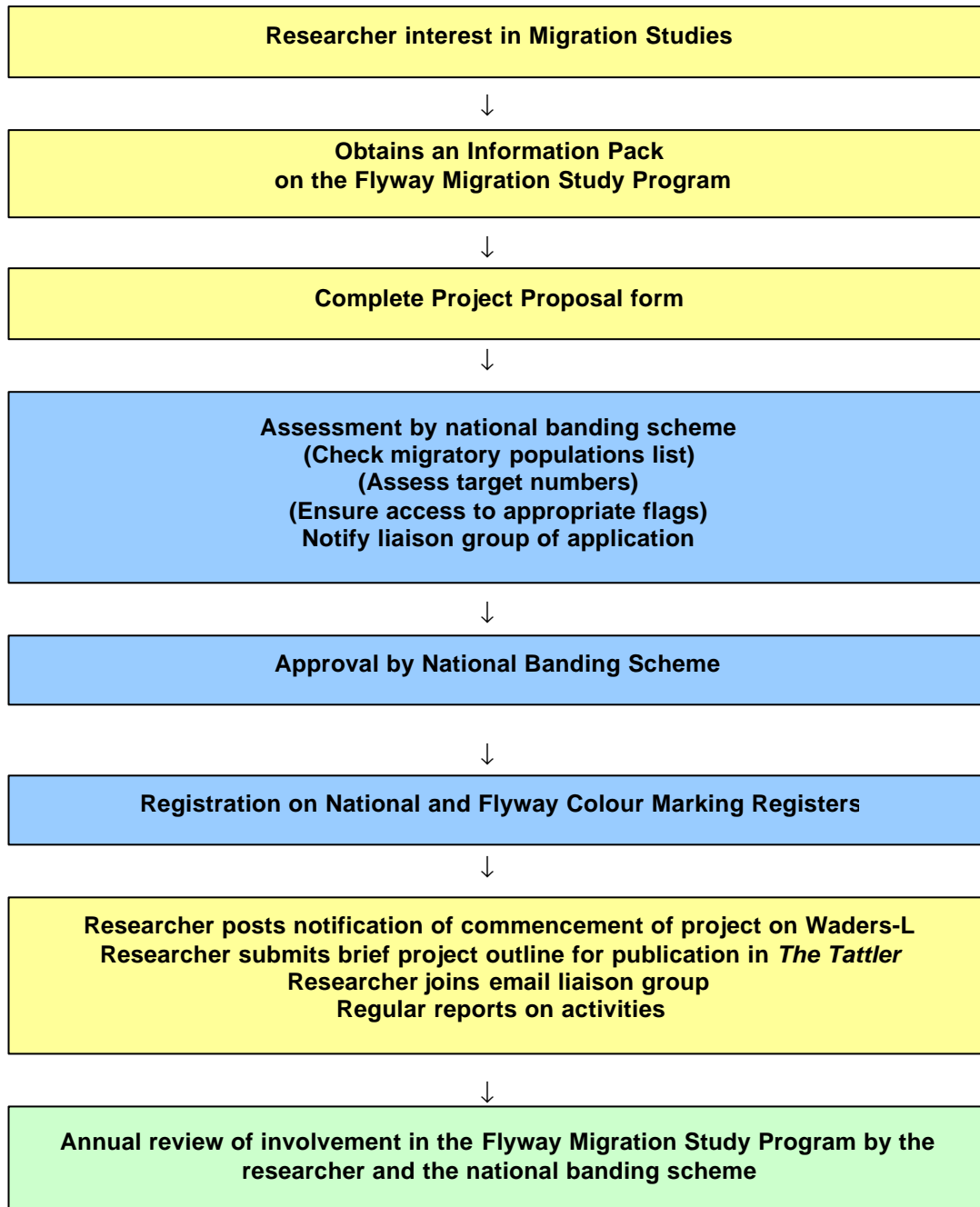


Figure 2

**Processing of an Application to Participate
in the Flyway Migration Study Program
(Use of Colour Flags)**



Key:

Researcher

National Banding Scheme

Researcher and National Banding Scheme

Table 4: Colour Flag Combinations for Migration Research on Shorebirds in the East Asian - Australasian Flyway

(last updated June 2007)

KEY: Provisional/Available Discontinued

Master	Lower	White	Black	Blue	Green	Orange	Yellow
Upper White	White <i>no flag</i> North Island NEW ZEALAND	Delay Use	<i>White</i> <i>Black</i> Shanghai CHINA	White Blue Taipei CHINA	White Green South Island NEW ZEALAND	White Orange KOREA	White Yellow Hong Kong CHINA
Black			Black White Shanghai CHINA	Delay Use	Black Blue S Philippines PHILIPPINES	Black Green Inner Gulf THAILAND	Black Orange Java INDONESIA
Blue	Blue <i>no flag</i> Northern Japan JAPAN	Hainan-Guangxi China	Blue White Central Japan JAPAN	Blue Blue Northern Japan JAPAN	Blue Green MONGOLIA	Blue Orange Southern Japan JAPAN	Yellow River Delta China
Green	Green <i>no flag</i> QLD AUSTRALIA		Green White Singapore SINGAPORE	Green Black CAMBODIA	Jiangsu China	Delay Use	Green Orange N Yellow Sea CHINA
Orange	Orange <i>no flag</i> Victoria AUSTRALIA	<i>Orange</i> <i>White</i> <i>Discontinued</i> Korea	Orange Black Sumatra INDONESIA	Orange Blue Tasmania AUSTRALIA	Orange Green NSW AUSTRALIA	Delay Use	Orange Yellow SA AUSTRALIA
Yellow	Yellow <i>no flag</i> NWA AUSTRALIA	Yellow White Sakhalin Island RUSSIA	Yellow Black Kamchatka RUSSIA	Darwin region Australia	Yellow Green VIETNAM	Yellow Orange SW WA AUSTRALIA	Delay Use

Other

Yellow band
Dark Green flag
Alaska USA

Dark Green flag
Yellow band
Alaska USA

Pale Blue
White
Wrangel Island RUSSIA

Pale Blue
nothing
N Chukotka RUSSIA

Pale Green
nothing
S Chukotka RUSSIA

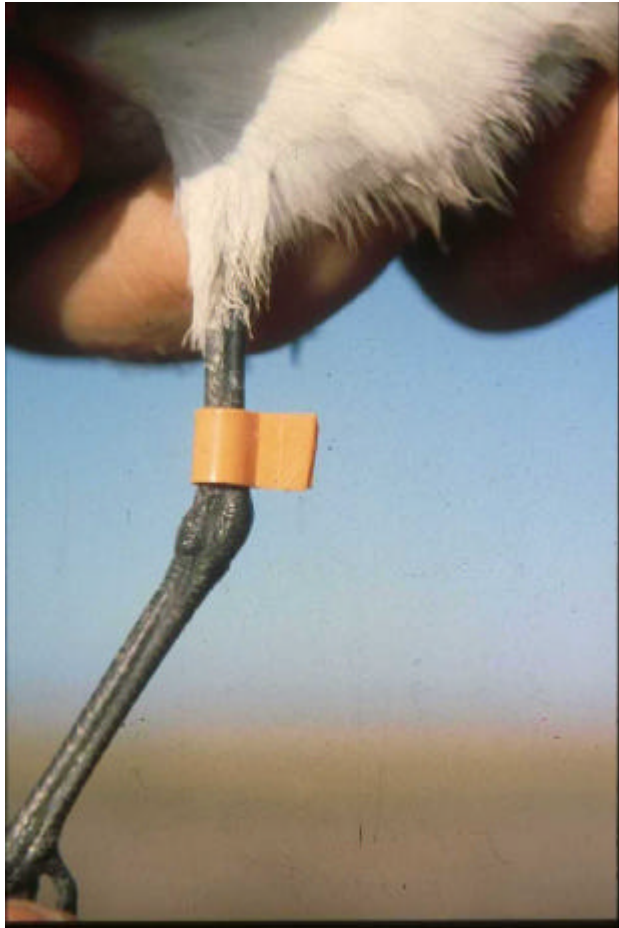
Prepared by: **Doug Watkins, Wetlands International - Oceania**
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Find more information on the Protocol at:
<http://www.tasweb.com.au/awsg/>

Table 5

Number of Flags to be Attached to the Tibia

Common Name	Scientific Name	Flags on Tibia
Pheasant-tailed Jacana	<i>Hydrophasianus chirurgus</i>	1
Painted Snipe	<i>Rostratula benghalensis</i>	1
Crab Plover	<i>Dromas ardeola</i>	1
Black-winged Stilt	<i>Himantopus himantopus</i>	2
Australian Stilt	<i>Himantopus leucocephalus</i>	2
Pied Avocet	<i>Recurvirostra avosetta</i>	2
Oriental Pratincole	<i>Glareola maldivarum</i>	1
Little Pratincole	<i>Glareola lactea</i>	1
Australian Pratincole	<i>Stiltia isabella</i>	1
Pacific Golden Plover	<i>Pluvialis fulva</i>	1
Grey Plover	<i>Pluvialis squatarola</i>	2
Long-billed Plover	<i>Charadrius placidus</i>	1
Little Ringed Plover	<i>Charadrius dubius</i>	1
Kentish Plover	<i>Charadrius alexandrinus</i>	1
Lesser Sand Plover	<i>Charadrius mongolus</i>	1
Greater Sand Plover	<i>Charadrius leschenaultii</i>	1
Eastern Sand Plover	<i>Charadrius veredus</i>	1
Northern Lapwing	<i>Vanellus vanellus</i>	1
Grey-headed Lapwing	<i>Vanellus cinereus</i>	1
Eurasian Woodcock	<i>Scolopax rusticola</i>	1
Solitary Snipe	<i>Gallinago solitaria</i>	1
Japanese Snipe	<i>Gallinago hardwickii</i>	1
Wood Snipe	<i>Gallinago nemoricola</i>	1
Pintail Snipe	<i>Gallinago stenura</i>	1
Swinhoe's Snipe	<i>Gallinago megala</i>	1
Common Snipe	<i>Gallinago gallinago</i>	1
Jack Snipe	<i>Lymnocyptes minimus</i>	1
Black-tailed Godwit	<i>Limosa limosa</i>	2
Bar-tailed Godwit	<i>Limosa lapponica</i>	2
Little Curlew	<i>Numenius minutus</i>	2
Whimbrel	<i>Numenius phaeopus</i>	2
Eurasian Curlew	<i>Numenius arquata</i>	2
Far Eastern Curlew	<i>Numenius madagascariensis</i>	2
Spotted Redshank	<i>Tringa erythropus</i>	2
Common Redshank	<i>Tringa totanus</i>	2
Marsh Sandpiper	<i>Tringa stagnatilis</i>	2
Common Greenshank	<i>Tringa nebularia</i>	2
Spotted Greenshank	<i>Tringa guttifer</i>	2
Green Sandpiper	<i>Tringa ochropus</i>	1
Wood Sandpiper	<i>Tringa glareola</i>	1
Terek Sandpiper	<i>Tringa cinereus</i>	1
Common Sandpiper	<i>Tringa hypoleucos</i>	1
Grey-tailed Tattler	<i>Tringa brevipes</i>	1
Ruddy Turnstone	<i>Arenaria interpres</i>	1
Asian Dowitcher	<i>Limnodromus semipalmatus</i>	2
Great Knot	<i>Calidris tenuirostris</i>	1
Red Knot	<i>Calidris canutus</i>	1
Sanderling	<i>Calidris alba</i>	1
Red-necked Stint	<i>Calidris ruficollis</i>	1
Temminck's Stint	<i>Calidris temminckii</i>	1
Long-toed Stint	<i>Calidris subminuta</i>	1
Pectoral Sandpiper	<i>Calidris melanotos</i>	1
Sharp-tailed Sandpiper	<i>Calidris acuminata</i>	1
Dunlin	<i>Calidris alpina</i>	1
Curlew Sandpiper	<i>Calidris ferruginea</i>	1
Spoon-billed Sandpiper	<i>Eurynorhynchus pygmaeus</i>	1
Broad-billed Sandpiper	<i>Limicola falcinellus</i>	1
Ruff	<i>Philomachus pugnax</i>	1
Red-necked Phalarope	<i>Phalaropus lobatus</i>	1



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