



Asian Waterbird Census 2005 & 2006 (Malaysia) Country Report

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Cover photo: Chinese Egret *Egretta eulophotes* on the mudflats of Klang islands, Selangor. (MNS/Lim Kim Chye 2006).

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EXECUTIVE SUMMARY

The year 2006 and 2007 were marked with very several important findings in the AWC (Malaysia)'s history. Investments in the growth of the MNS Kuching Branch Bird Group and waterbird trainings with the Sarawak Forestry Corporation staff members (with assistance from JICA and Wetlands International) resulted in the most comprehensive survey coverage of Sarawak's western coast since the late 1980s. This has helped us gain renewed knowledge and understanding of its waterbird dynamics along the coast. Likewise, in Peninsular Malaysia, the Wetland International-led surveys along its west coast that coincided with the AWC periods have produced similar impacts.

Through these past two AWCs, exciting discoveries were recorded such as the sightings of a Red-necked Phalarope and two (possibly) Heuglin's Gulls from the central-west coast of Selangor, thus reinforcing its status as the most important wintering waterbird site for the peninsula. A lone Eurasian Oystercatcher made its first presence on Bornean soil at Bako-Buntal Bay.

The Asian Waterbird Census (Malaysia) continues to be **the only consistent** waterbird and wetland monitoring programme in the country, participated by many volunteers and several government agencies. Continuous monitoring since 2000 has resulted in many key findings, most startling is the decline in waterbirds nationally and continued degradation/destruction of our wetlands based on recent analysis by Wetland International.

Despite this disheartening findings, AWC (Malaysia) needs to continue to generate information in order for it to challenge and improve protection and policy (species, site and habitat for both) measures for our waterbirds and wetlands. AWC (Malaysia) also continues to look forward to the participation of volunteers, who no doubt form the backbone of this annual survey

A snapshot of the survey results and key findings are highlighted below.

A summary of the breakdown of major waterbird groups according to number of individuals and species (in parenthesis) in two regions in 2005 and 2006.

| Waterbird Group | Peninsular Malaysia | | East Malaysia | |
|----------------------|---------------------|--------------------|-------------------|--------------------|
| | 2005 | 2006 | 2005 | 2006 |
| Pelicans | 1 (1) | - | - | - |
| Heron and Egrets | 9,416 (13) | 12,696 (16) | 740 (10) | 2,862 (10) |
| Storks | 121 (3) | 86 (2) | - | 49 (1) |
| Ibis | - | 1 (1) | - | - |
| Grebes | 72 (1) | 58 (1) | - | - |
| Geese and Ducks | 104 (2) | 111 (2) | 160 (2) | 12 (2) |
| Rails and Gallinules | 449 (8) | 345 (6) | 74 (5) | 27 (3) |
| Jacanas | 1 (1) | 5 (1) | - | - |
| Shorebirds | 42,903 (37) | 32,977 (37) | 2,758 (23) | 33,288 (37) |
| Gulls and Terns | 7,531 (11) | 4,784 (11) | 162 (2) | 4,311 (9) |
| TOTAL | 60,598 (79) | 51,063 (77) | 3,894 (42) | 40,549 (62) |

Interesting Sightings

- A single Spot-billed Pelican was seen swimming in the Pulau Kelumpang lake (Matang coast) in 2005. The pelican is a globally threatened species.
- Large congregations of Cattle Egrets (100) were reported from the Kota Belud Bird Sanctuary, Sabah in 2005.
- 99 Chinese Egrets seen in Bako-Buntal Bay in 2005.
- A total of 471 globally threatened Chinese Egrets were reported from western Sarawak coast in 2006

- A solitary Black Bittern from Kinta Nature Park, Perak in 2006.
- A single Great-billed Heron at Sg Lebam, Johor in 2006
- Three wild Milky Storks were counted at Pulau Kelumpang (Matang) in 2005 and four birds in 2006.
- More than 20 individuals were seen at each site, Matang coast, south-west Johor coast and Kg Medang (Pahang) in 2005. In the following year, only Matang and Kg Medang had more than 20 individuals.
- High concentrations of Lesser Adjutants were reported from the Batang Lupar-Sg Saribas coast (15) and Salak estuary (8) in 2006.
- A single Black-headed Ibis was reported from the Matang area in 2006.
- At Kota Belud Bird Sanctuary, a total of 160 individuals of Northern Shoveler (10) and whistling-ducks spp. (Lesser/Wandering) (150) were counted in 2005.
- A single Northern Pintail was spotted at the Pulau Bruit/Patok-Batang Lasso area (Sarawak) in 2006.
- The Bako-Buntal Bay supported more than 2,000 shorebirds in 2005. Dominant species at the bay included Red Knots (450), Bar-tailed Godwits (328), Whimbrels (245) and Grey Plovers (200). Unidentified sand-plovers (Mongolian/Greater) constituted about half of the total count at the bay. Globally threatened and near-threatened shorebirds included Malaysian Plovers, Far Eastern Curlews, Nordmann's Greenshanks and Asian Dowitchers.
- A solitary Red-necked Phalarope along the Selangor coast in 2005.
- A solitary Green Sandpiper at the Batu Maung-Jelutong coast and Grey-tailed Tattler at the north-central Selangor coast in 2006
- In East Malaysia, seven species exceeded the 1,000 total individual mark namely the Mongolian Plovers (3,605), Greater Sand-Plovers (1,901), Whimbrels (1,600), Common Redshanks (2,179), Terek Sandpipers (3,699), Rufous-necked Stints (1,439) and Curlew Sandpipers (1,346). A total of 9,399 shorebirds remained unidentified. Similarly, globally threatened and near-threatened Malaysian Plovers, Far Eastern Curlews, Nordmann's Greenshanks and Asian Dowitchers were noted along the western Sarawak coast.
- A Eurasian Oystercatcher at the Bako-Buntal Bay in 2006. This a new record for Borneo. Over 100 Brown-headed Gulls were counted at Matang whilst three Black-headed Gulls were seen along south-east Johor coast in 2005.
- Low counts of Black-naped Terns (6 individuals) were also noted from Johor's coast in 2005.
- In 2006, large concentrations of Gull-billed Terns were counted at the Kapar Power Station and Klang islands, totaling 1,474 individuals.
- Two possible Heuglin's Gulls were also reported from Klang area in 2006. The sighting has been submitted to the Records Committee of the MNS-Bird Conservation Council for acceptance as a new country record.
- A total of 1,385 and 1,357 Gull-billed and Little Terns were counted respectively in along western Sarawak coast in 2006.

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INTRODUCTION

Waterbirds are useful indicators of the conservation status and health of wetland habitats. The Asian Waterbird Census (AWC) is a coordinated international scheme for the collection and dissemination of information on waterbirds and wetlands. It forms a part of the International Waterfowl Census, a global effort coordinated by Wetlands International and conducted once a year, during the 2nd and 3rd week of January. Information is gathered on standardised forms by network of national/regional coordinators and volunteer participations.

The **major objectives** of the Asian Waterbird Census are (Lopez and Mundkur 1997):

1. **To obtain information on an annual basis of waterbird population at wetlands in the region during the non-breeding period of most species (January), as a basis for evaluation of sites and monitoring of populations;**
2. **To monitor on an annual basis the status and conditions of wetlands; and**
3. **To encourage greater popular interest in waterbirds and wetlands, and thereby promote their conservation.**

The results of the census and associated information are widely used to promote regional and national waterbird and wetland conservation initiatives. These include the identification of internationally important wetlands under the Ramsar Convention and as support for the development of draft agreement on the conservation of migratory waterbirds.

The involvement of the Malaysian Nature Society (MNS) in this programme as one of the Country Coordinator (the other is the Department of Wildlife and National Park, Peninsular Malaysia) can be traced back to 1999, working in collaboration with Wetlands International –Asia Pacific (based in Kelana Jaya). Through its participation over the years, the census has seen a moderate growth in terms of volunteer involvement and locations surveyed. It is hoped that the AWC will be able to generate concern for waterbird and habitat conservation in Malaysia amongst Malaysians and government agencies leading to the achievements of the AWC objectives.

In last quarter of 2005, MNS, with collaboration with Wetlands International and Mr Akira Mizutani (JICA volunteer), conducted a waterbird identification and monitoring technique workshop for the Sarawak Forestry Corporation (SFC) staff members (e.g. officers, rangers) at Pulau Buit. Through this workshop, the participants were exposed to basic waterbird identification skills and applied their monitoring skills and knowledge counting waterbirds along Pulau Buit's mudflat. Pulau Buit (inclusive of adjacent Pulau Patok) is one of Malaysia's Important Bird Area and has been proposed as a National Park in Sarawak.

For 2006, a major survey was conducted for the western Sarawak coast, stretching from Bako-Buntal Bay to Batang Lasso. This survey was led the MNS Kuching Branch Bird Group and Mr Akira Mizutani with participation from some of the newly-trained SFC personnel and UNIMAS. Results of this survey were crucial in providing a new picture in understanding the importance of western Sarawak coast. A similar survey of this magnitude was last conducted in the late 1980s.

IMPORTANT BIRD AREAS (IBA) IN MALAYSIA

The IBA programme of BirdLife International aims to identify, monitor and protect a global network of IBAs for the conservation of the world's birds and other biodiversity. Important Bird Areas, in short, are places of international significance for the conservation of birds at the global, regional or sub-regional level chosen using standardised criteria.

As BirdLife Partner in Malaysia, MNS has identified national 55 IBAs according to the BirdLife's site selection criteria. Twenty-two of those IBAs are wetlands or wetland-related sites. These sites hold significant numbers of one or more globally threatened waterbird or/and have exceptionally

large numbers of migratory or congregatory waterbirds. During the census, volunteers are encouraged to survey any of the 22 IBAs closest and convenient to him/her.

METHODS

Standardised survey forms were sent out to volunteers via electronically or snail mail from MNS Head Office in Kuala Lumpur. Volunteers were encouraged to cover as many sites as possible and also to survey previous sites. Completed forms were then returned to MNS for collation and preparation of a country report.

The official survey period for AWC annually is the 2nd and 3rd week of January. *However, an extension of the survey period was accepted in Malaysia to allow AWC volunteers greater flexibility in conducting surveys. Counts from the last week of December till the first week of February are thus accepted.*

RESULTS

Survey Locations

A total of 47 and 61 sites nationwide were surveyed during the AWC 2005 and 2006 periods (TABLE 1). Some of the sites are large and counts were conducted at sub-sites e.g. Kuala Selangor Nature Park within the north-central Selangor coast (see Appendix 1 and 2 for more details).

TABLE 1. Breakdown of sites surveyed according to States during the AWC (Malaysia) 2005 and 2006.

| States | No. of Survey Sites | |
|------------------------|---------------------|-----------|
| | 2005 | 2006 |
| Perlis/Kedah | 4 | 6 |
| Pulau Pinang | 3 | 6 |
| Perak | 7 | 5 |
| Selangor | 8 | 6 |
| Melaka/Negeri Sembilan | 1 | 0 |
| Johor | 11 | 11 |
| Pahang | 8 | 6 |
| Terengganu | 1 | 3 |
| Sarawak | 1 | 18 |
| Sabah | 3 | 0 |
| TOTAL | 47 | 61 |

A total of eight Important Bird Areas (IBAs) in Malaysia were covered in the two year, four in Peninsular Malaysia and three in Sarawak and one in Sabah.

Peninsular Malaysia

1. Teluk Air Tawar-Kuala Muda coast [MY03]
2. Matang coast [MY05]
3. North-central Selangor coast [MY11]
4. South-west Johor coast [MY15]

Sarawak

5. Bako-Buntal Bay [MY37]
6. Sadong-Saribas coast [MY41]
7. Pulau Bruit [MY42]

Sabah

8. Tempasuk plain [MY33]

Major Waterbird Groups

In 2005, nine major waterbird groups were counted with a total count of 64,492 individuals (79 species) nationwide. The overall count were dominated by three groups; the Shorebirds (45,661), Herons and Egrets (10,156) and Gulls and Terns (7,693). Lesser groups such as Pelicans (1), Storks (121), Grebes (72), Geese and Ducks (264), Rails and Gallinules (523) and Jacanas (1) were also reported.

Similarly in 2006, nine major waterbird groups were also counted covering 85 species nationwide. The breakdown in descending order are as follows; (1) Shorebirds (66,265 individuals), (2) Herons and Egrets (15,558), (3) Gulls and Terns (9,095), (4) Rails and Gallinules (372), (5) Storks (135), (6) Geese and Ducks (123), (7) Grebes (58), (8) Jacanas (5) and (9) Ibis (1). The former three waterbird groups dominated the counts in both Peninsular and East Malaysia. Both regions have an almost equal count of shorebirds and gulls and terns. However, more herons and egrets were recorded in the peninsula. This is due to more extensive survey coverage of the western Sarawak coast during the census period.

Details of the regional breakdown for the counts in 2005 and 2006 are in **TABLE 2**.

TABLE 2. Breakdown of waterbird groups according to number of individuals and species (in parenthesis) in two regions in 2005 and 2006.

| Waterbird Group | Peninsular Malaysia | | East Malaysia | |
|----------------------|---------------------|--------------------|-------------------|--------------------|
| | 2005 | 2006 | 2005 | 2006 |
| Pelicans | 1 (1) | - | - | - |
| Herons and Egrets | 9,416 (13) | 12,696 (16) | 740 (10) | 2,862 (10) |
| Storks | 121 (3) | 86 (2) | - | 49 (1) |
| Ibis | - | 1 (1) | - | - |
| Grebes | 72 (1) | 58 (1) | - | - |
| Geese and Ducks | 104 (2) | 111 (2) | 160 (2) | 12 (2) |
| Rails and Gallinules | 449 (8) | 345 (6) | 74 (5) | 27 (3) |
| Jacanas | 1 (1) | 5 (1) | - | - |
| Shorebirds | 42,903 (37) | 32,977 (37) | 2,758 (23) | 33,288 (37) |
| Gulls and Terns | 7,531 (11) | 4,784 (11) | 162 (2) | 4,311 (9) |
| TOTAL | 60,598 (79) | 51,063 (77) | 3,894 (42) | 40,549 (62) |

Note: The number of species excludes unidentified species.

Pelicans

A single Spot-billed Pelican was seen swimming in the Pulau Kelumpang lake (Matang coast) in 2005. The pelican is a globally threatened species.

Herons and Egrets

A total of 9,416 individuals were counted in the peninsula in 2005. However, only 740 individuals were recorded in East Malaysia due to limited coverage. In Peninsular Malaysia, the overall counts for four species exceeded 1,000 individuals, namely; Black-crowned Night-Heron (1,080), Chinese Pond-Heron (1,031), Cattle Egret (1,081) and Little Egret (2,084). More than 1,400 ardeids remained unidentified. In East Malaysia, large congregations of Cattle Egrets (100) were reported from the Kota Belud Bird Sanctuary (Sabah) while Little and Great Egrets and Purple Herons were seen in modest numbers across several sites in Sabah. About 450

unidentified ardeids were counted at the Bako-Buntal Bay (Sarawak). Significant sightings include 99 Chinese Egrets and a single Pacific Reef Egret.

In 2006, this group constituted the third largest counted for both region. In the peninsula, at least five species exceed 1,000 individuals; the Black-crowned Night Heron (2,910), Cattle Egret (2,277), Little Egret (1,693), Great Egret (1,185) and Purple Heron (1,974). However, in East Malaysia, most ardeid species were less than 1,000 individuals. Cattle (210), Little (531) and Great Egrets (251) dominated the counts. A total of 471 globally threatened Chinese Egrets were reported. Other significant counts were solitary Black Bittern (Kinta Nature Park) and Great-billed Heron (Sungai Lebam) and two Purple Herons at the Pulau Bruit/Patok-Batang Lasso area.

Storks

Three species were seen in 2005 namely the Milky Stork, Painted Stork and Lesser Adjutant. Three wild Milky Storks were counted at Pulau Kelumpang (Matang) and another single bird in the company of 24 Painted Storks in Taman Tasik Cempaka (Bandar Baru Bangi). These individuals are mostly likely part of Zoo Negara's free flying birds. Lesser Adjutants were counted at three major sites; Matang coast, south-west Johor coast and Kampung Medang, where more than 20 individuals were seen at each site. No storks were reported from East Malaysia.

Both the Milky Stork and Lesser Adjutant were recorded from the peninsula in 2006. Four Milky Storks were seen at its Matang stronghold, and augmented by another two free flying captive-bred individuals at lake system of Kuala Selangor Nature Park. Lesser Adjutants were seen primarily at Kampung Medang (26 individuals), Parit Jawa (18) and Matang (27). In Sarawak, the adjutants were found to be distributed across its western coast in small numbers (less than 10 individuals). High concentrations were reported from the Batang Lupar-Sungai Saribas coast (15) and Salak estuary (8).

Ibis

A single Black-headed Ibis was reported from the Matang area in 2006.

Grebes

A total of 72 Little Grebes were counted in 2005, with Kinta Nature Park and Chikus wetlands supporting large populations. These wetlands are mainly former tin-mining lakes and pools. In 2006, a total of 58 Little Grebes were counted with the highest count at Chikus (38 individuals).

Geese and Ducks

In Peninsular Malaysia, Cotton Pygmy Geese and Lesser Treeducks dominated this group with 90 and 14 individuals respectively. A large concentration of the former (88 individuals) was counted just outside the Kinta Nature Park area. At Kota Belud Bird Sanctuary, a total of 160 individuals of Northern Shoveler (10) and whistling-ducks spp. (Lesser/Wandering) (150) were counted.

Four species were counted nationwide in 2006. In Peninsular Malaysia, the Lesser Treeducks and Cotton Pygmy Geese favoured former tin-mining lakes and pools. A total of 66 and 45 individuals respectively were counted at these wetlands. Contrastingly, Wandering Whistling Ducks were common at Sejingkat station while a single Northern Pintail was spotted at the Pulau Bruit/Patok-Batang Lasso area.

Rails and Gallinules

White-breasted Waterhens and Common Moorhens were commonly encountered in 2005. Apart from these species, notable sightings include Slaty-breasted Rails (2 individuals), Red-legged Crakes (1), Ruddy Crakes (7) and Watercocks (2).

White-breasted Waterhens, Common Moorhens and Purple Swampheens were the most commonly encountered rails and gallinules during the 2006 surveys in the peninsula. Other interesting sighting includes single Slaty-breasted Rails from Pahang and Johor respectively. Similarly, waterhens were common in Sarawak while the White-browed Crakes and Common Moorhens were less frequently seen.

Jacanas

A single Pheasant-tailed Jacana was recorded from Chikus in 2005. Similarly, single jacanas were again encountered at mostly man-made wetlands (e.g. ricefields, former tin-mining lakes/pools) in the peninsula the following year.

Shorebirds (Waders)

In 2005, several shorebird species emerged with high total counts in Peninsular Malaysia namely Pacific Golden Plovers (2,847 individuals), Mongolian Plover (7,307), Greater Sand-Plover (2,385), Whimbrels (2,048), Eurasian Curlews (2,174), Common Redshanks (6,437), Rufous-necked Stints (2,046) and Curlew Sandpipers (1,336). More than 11,000 shorebirds remained unidentified. In East Malaysia, the Bako-Buntal Bay supported more than 2,000 shorebirds. However, no species exceeded 1,000 individuals. Dominant species at the bay included Red Knots (450), Bar-tailed Godwits (328), Whimbrels (245) and Grey Plovers (200). Unidentified sand-plovers (Mongolian/Greater) constituted about half of the total count at the bay. Globally threatened and near-threatened shorebirds included Malaysian Plovers, Far Eastern Curlews, Nordmann's Greenshanks and Asian Dowitchers. Other notable sightings include a solitary Red-necked Phalarope, Grey-tailed Tattler (1) and Ruffs (2).

Several shorebird species counted exceeded 1,000 individuals in 2006. In the peninsula, these were the Pacific Golden Plovers (2,010), Mongolian Plovers (5,384), Bar-tailed Godwits (1,234), Whimbrels (3,078), Eurasian Curlews (2,104), Common Redshank (5,990), Terek Sandpipers (1,694) and Rufous-necked Stints (2,068). A total of 5,360 shorebirds remained unidentified due to field constraints. Four globally threatened and near-threatened shorebirds were counted namely Malaysian Plover, Far Eastern Curlew, Nordmann's Greenshank and Asian Dowitcher. Other significant sightings include solitary Green Sandpiper at the Batu Maung-Jelutong coast and Grey-tailed Tattler at the north-central Selangor coast.

In East Malaysia, seven species exceeded the 1,000 total individual mark namely the Mongolian Plovers (3,605), Greater Sand-Plovers (1,901), Whimbrels (1,600), Common Redshanks (2,179), Terek Sandpipers (3,699), Rufous-necked Stints (1,439) and Curlew Sandpipers (1,346). A total of 9,399 shorebirds remained unidentified. Similarly, globally threatened and near-threatened Malaysian Plovers, Far Eastern Curlews, Nordmann's Greenshanks and Asian Dowitchers were noted along the western Sarawak coast. Other sightings of interest are Spotted Redshank (1), Little Curlew (3) and Eurasian Osytercatcher (1). The latter is a new record for Borneo (Geoffrey Davison, pers. comm.).

Gulls and Terns

Whiskered and White-winged Terns dominated the counts with 1,041 and 1,642 individuals respectively in the peninsula. The former and Gull-billed Terns were the most frequently encountered terns at the Bako-Buntal Bay. Over 100 Brown-headed Gulls were counted at

Matang whilst three Black-headed Gulls were seen along south-east Johor coast. Low counts of Black-naped Terns (6 individuals) were also noted from Johor's coast.

In 2006, large concentrations of Gull-billed Terns were counted at the Kapar Power Station and Klang islands, totaling 1,474 individuals. Whiskered Terns were also encountered frequently at the north-central Selangor coast. Lower counts of Brown-headed Gulls made at Matang. Only 25 individuals were recorded compared to previous years. Black-headed Gulls were seen again at the Klang islands. Excitingly, two possible Heuglin's Gulls were also reported from the same area. The sighting has been submitted to the Records Committee of the MNS-Bird Conservation Council for acceptance as a new country record.

A total of 1,385 and 1,357 Gull-billed and Little Terns were counted respectively in Sarawak. Other notable sighting was eight Black-headed Gulls scattered along its western coast.

Globally Threatened and Near-Threatened Waterbirds

Four globally threatened and three near-threatened waterbirds were recorded namely: **VULNERABLE**: Chinese Egret, Milky Stork, Lesser Adjutant, Nordmann's Greenshank; **NEAR-THREATENED**: Malaysian Plover, Far Eastern Curlew and Asian Dowitcher.

Chinese Egret *Egretta eulophotes*

2006

The extensive survey of the west coast of Sarawak revealed an amazing count of 431 individuals scattered along various points. Four largest concentrations (>30 individuals) were observed at;

- Sungai Buntal - Sungai Bako [covering Bako-Buntal Bay (Kampung Buntal)] - 54 individuals
- Sungai Samarahan - Batang Sadong - 228
- Batang Lupa - Sungai Saribas - 56
- Sungai Kerian - Batang Rajang - 32

In Peninsular Malaysia, the Klang islands supported 38 individuals.

2005

A high of 72 individuals were counted in Pulau Tengah (part of the Klang islands). Another 15 were recorded from the south-west Johor coast. In Sarawak, only six birds were seen at the Bako-Buntal Bay (Kampung Buntal).

Milky Stork *Mycteria cinerea*

2006

A maximum of four individuals were observed at Pulau Kelumpang (in Matang mangroves). Two individuals were spotted feeding at the lake system of Kuala Selangor Nature Park. These introduced birds have been spotted along the coastline south of the nature park and returns to the lake to feed occasionally.

2005

Three individuals were counted in its stronghold at the Matang mangroves. A single bird (an escapee/free-flying) was seen in a recreational park (Taman Tasik Cempaka) in Bangi, associating with 24 Painted Storks.

Lesser Adjutant *Leptoptilos javanicus*

2006

The adjutant population in Sarawak is predicted to be low due to hunting pressure. Concentrations are rare. Therefore, the high count of 15 individuals along the Batang Lupa-Sungai Saribas coast was cause for celebration. Another 5-6 birds were seen along the Sungai Saribas-Sungai Kerian and Sungai Kerian-Batang Rajang coastline. The Salak estuary held another eight individuals.

In Peninsular Malaysia, Matang and Kampung Medang supported about 25-30 individuals respectively. Parit Jawa, located along the south-west Johor coast, held 18 birds.

2005

In Peninsular Malaysia, the adjutant was recorded in fairly large numbers at the Matang coast (30 individuals), south-west Johor coast (32) and Kampung Medang (21). Six birds were seen at Pulau Tengah. No adjutants were recorded from Sarawak this year.

Nordmann's Greenshank *Tringa guttifer*

2006

A total of 14 individuals were recorded from the north-central Selangor coast. Nineteen were seen in the ash ponds of Kapar Power Station, while only three were seen at the Teluk Air Tawar-Kuala Muda coast. Four individuals were counted at the Bako-Buntal Bay (Kampung Buntal).

2005

The importance of the Teluk Air Tawar-Kuala Muda coast was clearly reiterated with the presence of 28 individuals. In Sarawak, three individuals were counted at the Bako-Buntal Bay (Kampung Buntal).

Malaysian Plover *Charadrius peronii*

2006

In Peninsular Malaysia, Sedili Kecil supported 22 individuals. In western Sarawak, the Batang Rajang-Sungai Belawai coast held 39 individuals. Four other coastlines namely the (1) Sungai Buntal-Sungai Bako [covering Bako-Buntal Bay (Kampung Buntal)], (2) Sungai Kerian-Batang Rajang, (3) Sungai Belawai-Sungai Paloh, and (4) Batang Lasso-Batang Iga supported less than 10 individuals respectively.

2005

Six individuals were recorded from Sedili-Kampung Sri Gading.

Far Eastern Curlew *Numenius madagascariensis*

2006

In western Sarawak, a high of 350 individuals were counted in the vicinity of Sejingkat Power Station. The coastline of Bako-Buntal Bay (Kampung Buntal) and Batang Lupa-Sungai Saribas supported large concentrations of 48 and 77 individuals respectively. In Teluk Air Tawar-Kuala Muda coast, three individuals were counted.

2005

Twelve individuals were recorded from the mudflats of Teluk Air Tawar-Kuala Muda. At Bako-Buntal Bay (Kampung Buntal), only two individuals were counted.

Asian Dowitcher *Limnodromus semipalmatus*

2006

In Penang, 15 individuals were seen on the Gurney Drive coast. At Bako-Buntal Bay (Kampung Buntal), an amazing 286 individuals were spotted.

2005

Twenty-four individuals were recorded from Teluk Air Tawar-Kuala Muda coast.

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APPENDIX 1. Survey Locations during the AWC (Malaysia) 2005 (Dec 2004-Feb 2005).

| STATE & SURVEY SITES | |
|---------------------------------|---|
| Kedah/Perlis | Pulau Langkawi (Padang Matsirat), Kuala Kedah coast, Kuala Perlis coast, Timah Tasoh Dam |
| Penang/Pulau Pinang | Teluk Air Tawar-Kuala Muda coast, Batu Maung-Jelutong coast, Pantai Acheh |
| Perak | Matang mangroves (Kuala Kurau-Kuala Gula, Ban Zhu Kao trail, Pulau Kelumpang & Sungai Gula, Tasik Kelumpang, Pulau Sangga Kecil-Sangga Besar, Pulau Terong, Tasik Pulau Terong), Malim Nawar, Kamunting, Kinta Nature Park, Sungai Tiang, Sungai Burung, Chikus |
| Selangor | North-central Selangor coast (Bagan Beting Kepah-Bagan Teluk Ru, Bagan Nakhoda Omar, Sungai Banting, Sungai Pulai, Sungai Burung, Sungai Besar, Sungai Haji Durani, Sungai Nibong, Sekinchan coast, Kuala Selangor Nature Park, Bagan Sungai Buloh, Pantai Remis, Sungai Sembilang, Sungai Janggut, Kapar Power Station, Pulau Tengah), Sungai Besar-Sungai Burung fishpond, Sekinchan ricefields, Tanjung Tumbuk, Ulu Yam Baru, Batang Berjuntai ex-mining area, Putrajaya Wetlands (UW1), Taman Tasik Cempaka (Bandar Baru Bangi) |
| Melaka/Negeri Sembilan | Batang Tiga |
| Johor | Yong Peng, Institut Jabatan Haiwan Kluang, Sungai Balang ricefields, south-west Johor coast (Parit Jawa, Kukup Laut, Sungai Buntu, Sungai Rambah, Pontian Kecil & Besar, Sungai Benut-Sungai Sanlang, Sungai Ta'pok-Sungai Benut, Sungai Pungor, Sungai Ayam, Bukit/Tanjung Sepenting, Tanjung Piai National Park), Tanjung Punggai, Batu Layar, Teluk Ramunia, Tanjung Pengelih, Kampung Sedili Kecil, Kuala Sedili/Sedili-Kampung Sri Gading, old Senggarang Airport lotus pond |
| Pahang | Tanjung Sekakap, Sungai Mersing, Tanjung Gemuk, Laka ricefields, Kuala Rompin, Sungai Galing, Kampung Medang, Pekan |
| Terengganu | Setiu-Beting Lintang |
| Sarawak | Bako-Buntal Bay (Kampung Buntal) |
| Sabah | Likas lagoon, Kota Kinabalu City Bird Sanctuary, Kota Belud Bird Sanctuary |

APPENDIX 2. Survey Locations during the AWC (Malaysia) 2006 (Dec 2005-Feb 2006).

| STATE & SURVEY SITES | |
|---------------------------------|--|
| Kedah/Perlis | Pulau Langkawi [Padang Matsirat, Kubang Badak, Pasir Tengkorak-Datai Bay, Langkawi Airport (Typha wetland)], Kuala Kedah coast, Kuala Perlis coast |
| Penang/Pulau Pinang | Teluk Air Tawar-Kuala Muda coast, Batu Maung-Jelutong coast, Pantai Aceh, Gurney Drive, Kuala Juru/Sungai Sembilang, Batu Kawan/Bukit Tambun |
| Perak | Matang coast (Kuala Kurau-Kuala Gula, Ban Zhu Kao trail, Pulau Kelumpang & Sungai Gula, Tasik Kelumpang, Pulau Sangga Kecil-Sangga Besar, Pulau Terong, Tasik Pulau Terong), Ulu Dedap & Sungai Buaya ricefields, Kamunting, Kinta Nature Park, Chikus |
| Selangor | North-central Selangor coast (Bagan Beting Kepah-Bagan Teluk Ru, Bagan Nakhoda Omar, Sungai Banting, Sungai Pulai, Sungai Burung, Sungai Besar, Sungai Haji Durani, Sungai Nibong, Sekinchan coast, Kuala Selangor Nature Park, Kapar Power Station, Klang islands), Sungai Besar-Sungai Burung fishpond, Sungai Nibong-Sekinchan ricefields, Tanjung Karang ricefields, Paya Indah Wetlands, Batang Berjuntai ex-mining area |
| Johor | Yong Peng, Institute Jabatan Haiwan Kluang, Sungai Balang ricefields, south-west Johor coast (Parit Jawa), Batu Layar, Sungai Lebam, Tanjung Belungkor, Sungai Santi & Sungai Sebina, Tanjung Pengelih, Sedili Kecil, Kampung Sri Gading |
| Pahang | Sungai Mersing, Tanjung Gemuk, Laka ricefields & swamp, Kuala Rompin, Sungai Galing, Kampung Medang |
| Terengganu | KUSZA lake, Kuala Ibai estuary, Gong Badak wetland |
| Sarawak | Chupak ricefields, Kuching-Serian road (24 th Mile), Yong Kong field, Tambira-Asajaya ponds, Asajaya Semara ponds, State Library, Semara-Jair, Telaga Air ponds, Salak estuary, Buntal (northern aquaculture ponds & village ponds), Bako-Buntal Bay [Sungai Buntal-Sungai Bako coast (inc. Kampung Buntal), Pulau Lakei (Bako NP)-Muara Tebas coast, Muara Tebas-Sungai Samarahan coast, Sungai Samarahan-Batang Sadong coast, Sejingkat station], Sadong-Saribas coast [Batang Sadong-Batang Lupa coast, Batang Lupa-Sungai Saribas coast, Sungai Saribas-Sungai Kerian coast, Sungai Kerian-Batang Rajang coast, Batang Rajang-Sungai Belawai coast], Sungai Belawai-Sungai Paloh coast, Pulau Buit [Sungai Paloh-Pulau Buit/Patok coast, Pulau Buit/Patok-Batang Lasso coast], Batang Lasso-Batang Igan coast, Daro |

APPENDIX 3(a,b). Summary of the Waterbirds and Wetland Sites Surveyed During the AWC 2005 (Malaysia). [In Microsoft Excel format]

APPENDIX 4(a,b). Summary of the Waterbirds and Wetland Sites Surveyed During the AWC 2006 (Malaysia). [In Microsoft Excel format]