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## ASEAN FLYWAY NETWORK WATERBIRD CENSUS AND WETLAND ASSESSMENTS 2019-2020: SIBUGAY BAY WETLAND

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### SUMMARY

A total of 68,718 individuals composed of 47 species representing 11 families was counted by 40 citizen scientists in Siay-Kabasalan wetlands, Zamboanga Sibugay, Philippines. The Little Egret *Egretta garzetta* (22,109), Whiskered Tern (11,017), Great White Egret *Egretta alba* (8,116) and the Intermediate Egret *Ardea intermedia* (8,610) were the most common species in the wetlands. Among the shorebirds (Scolopacidae), the Endangered Great Knot *Calidris tenuirostris* (1,455) was the most abundant species. Four threatened species were recorded namely: IUCN Endangered Great Knot *C. tenuirostris*, IUCN Endangered Far Eastern Curlew *Numenius madagascariensis* and the IUCN Vulnerable Chinese Egret *Egretta eulophotes* and the endemic Philippine Duck *Anas luzonica*. The site also supports at least 20,000 individuals of waterbirds with at least six species with populations above 5,000 individuals. Most importantly, the site supports 1.8% of the population of the Endangered Far Eastern Curlew *N. madagascariensis*, 27% of the population of Great White Egret, 22% of the Little Egret, 9% of Intermediate Egret and 11% Whiskered Tern. The Siay-Kabasalan wetland can qualify as Ramsar Site and EAAF network site.

We suggest including an independent count for egrets during afternoon when the birds are coming in to roost for a closer estimate of the population. Lastly, counts should also be conducted during the start of the migratory season to get a closer estimate of the populations of godwits, Great Knot and Red Knot. The survey was carried from January 2019 to January 2020 in Siay-Kabasalan wetlands, Zamboanga Sibugay, Mindanao, Philippines.

### BACKGROUND

The East Asian Australasian Flyway is the most threatened migratory bird flyway with over 500 species of migratory birds passing through annually. Among the threatened birds in this flyway are the IUCN Endangered Spotted Greenshank *Tringa guttifer*, IUCN Endangered Eastern Curlew *Numenius madagascariensis*, IUCN Endangered Great Knot *Calidris tenuirostris*, IUCN Vulnerable Philippine Duck *Anas luzonica*, and the





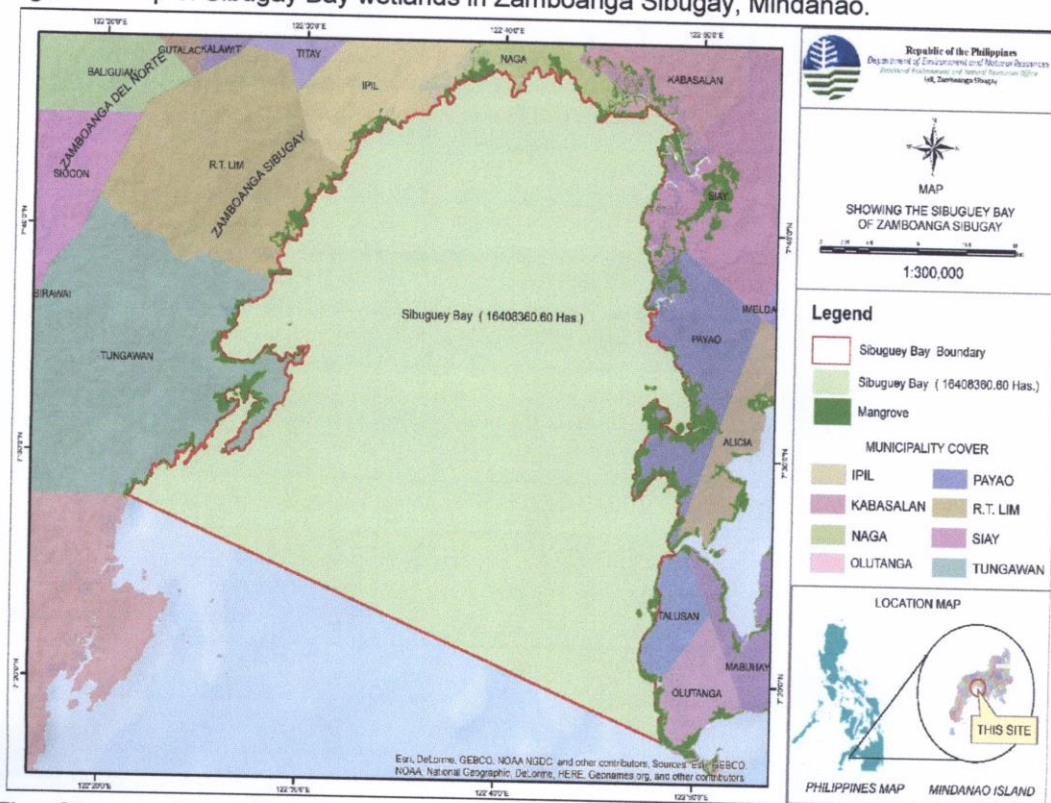
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Vulnerable Chinese Egret *Egretta eulophotes*. Every year, migratory waterbirds follow the route and stops over in wetland to take refuge and feed on available food. Among the wetland sites in the Philippines where migratory waterbirds congregate are the seven Ramsar Sites: Negros Occidental Coastal Wetlands Conservation Area, Agusan Marsh Wildlife Sanctuary, Olango Island Wildlife Sanctuary, Tubbataha Reefs Natural Park, Naujan Lake National Park and Las Piñas-Parañaque Critical Habitat and Ecotourism Area. Of the seven sites, only Agusan Marsh Wildlife Sanctuary is located in Mindanao Island despite the vast areas of mudflats and inland wetlands in different provinces including Sibugay Bay in Zamboanga Sibugay.

Figure 1. Map of Sibugay Bay wetlands in Zamboanga Sibugay, Mindanao.



The Sibugay Bay Wetland in the Province of Zamboanga Sibugay has a 146-km coastline with a total area of 187, 003 hectares made up of mangrove forest, fishponds, seagrass beds and vast coastal mudflats. It is within the political jurisdiction of nine municipalities: ~~T~~ulusan, Naga, Siay, Kabasalan, Tungawan, R.T. Lim, Olutanga, Ipil and Pangil.

Sibugay Bay wetland is composed of coastal mudflats, mangroves (remnant old growth and mature plantations), seagrass beds, sandbars, rivers and fishponds. As early as 2017, the Provincial Environment and Natural Resources Office of Zamboanga Sibugay together with the Provincial Government, Municipality of Siay and Kabasalan as well as the Office of the Congressional District of Zamboanga Sibugay and fisherfolk organizations agreed to support the declaration of Siay – Kabasalan as a wetland of international importance and an East Asian-Australasian Flyway Network site. This was expanded to include the whole Sibugay Bay in 2018 involving nine (9) municipalities.





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Thus, the present work has been carried out to identify important habitats for migratory birds, update the list of waterbirds including threatened species as well as determine the conservation status of Sibugay Bay Wetlands as part of the baseline information. It is also the intention of the Department of Environment and Natural Resources Region IX and the Local Governments of Zamboanga Sibugay to push for the application of Sibugay Bay as Ramsar and EAAF Network Site.

## METHODS

A total of 13 count stations were surveyed monthly from January 2019 to January 2020 using visual searching on foot method following Bakewell et al (2017) and Wetlands International (2018). Areas covered include intertidal mudflats, mangrove forest and fishpond (Figures 1 and 2). Thirteen sets of 10 x 42 binoculars and two sets of Ultima 100-45 degree Spotting Scope Regal™ M2 100ED Spotting Scope mounted on tripod and a Bushnell Legend 20-60x60 Spotting Scope with tripod were used. Surveys were conducted at least 4-6 hours before peak high tide. Survey within the wetlands took about 1-2 hours in each site. Identification was based on *Field guide to the Waterbirds of ASEAN* (Lee et al., 2018) and, *Field Guide to the Birds of Negros, Panay and Cebu* (Jakosalem et al., 2019). Days with low wind and clear weather, and good tide were usually selected for counts. Once flocks were identified, assigned team approached slowly on foot to identify and count. The team follows the waterbird format as suggested by the ASEAN Flyway Network Waterbird Census and Wetland Assessment Form 2019.

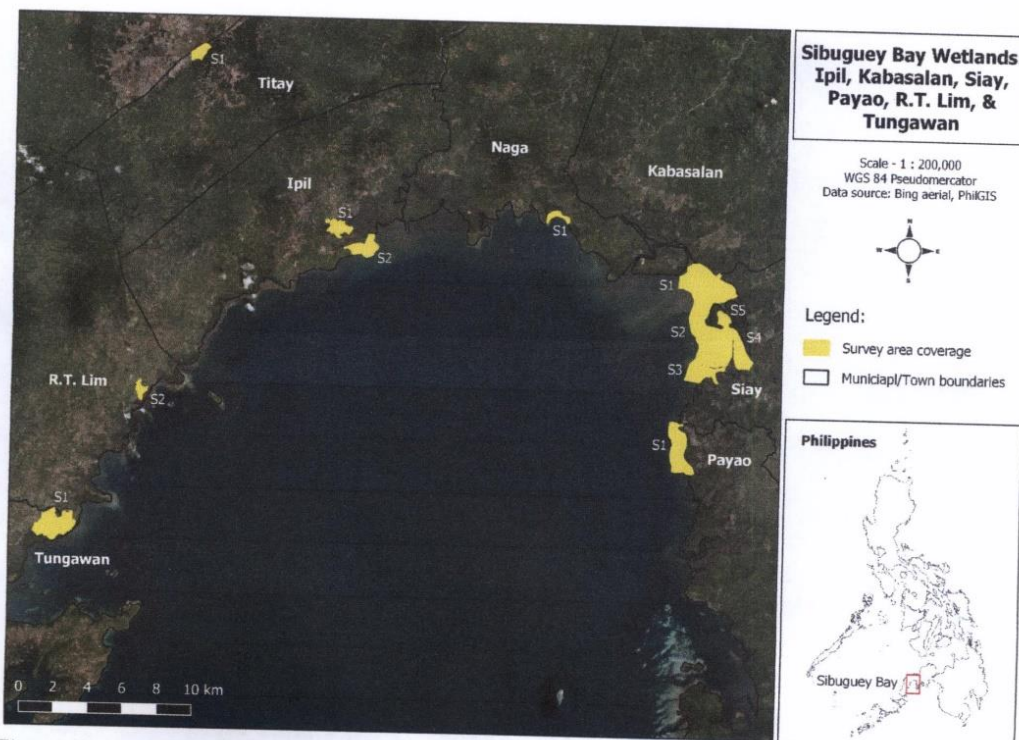


Figure 2. Location map of survey sites in Tungawan, R.T. Lim, Ipil, Kabasalan, Siay and Payao wetlands in Sibugay Bay.





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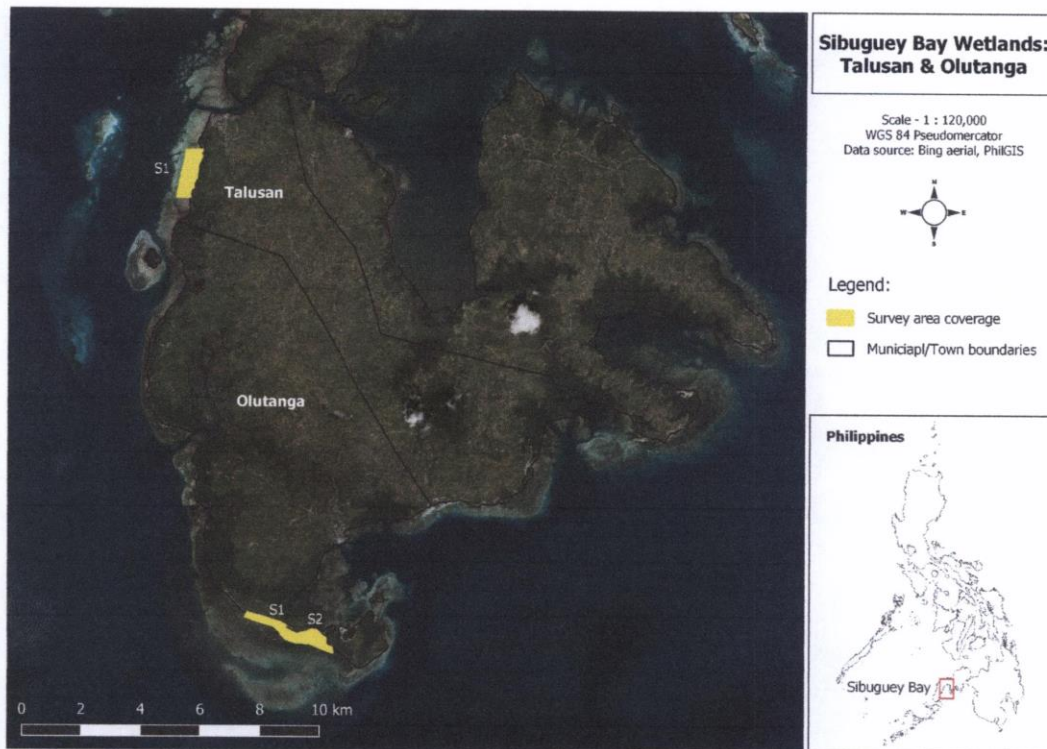


Figure 3. Location map of survey sites in Talusan and Olutanga in Sibugay bay wetlands.



Figure 4. Team from different stations (Photos by PhilBio and DENR PENRO Zamboanga Sibugay).

### Limitations of the Study

Counts were conducted from January 2019 to January 2020 to determine monthly differences in both native and migratory waterbird populations in Sibugay Bay. Waterbirds were scattered over a vast wetlands where some populations were roosting in nearly inaccessible areas. The small number of experienced observers coupled with logistical challenges limited our abilities to count all the waterbirds in the whole area. This report presents the best monthly estimates of waterbird populations and their distribution in Sibugay Bay.



## RESULTS

### Wetland Assessment

There were varying observed and potential threats to specific locality within the Zamboanga Sibugay Wetlands. Common to almost all area were agricultural and industrial effluents (Table 1). Planting of mangroves on mudflats conflicts with the feeding areas of migratory waterbirds. There is an ongoing active awareness campaign and advocacy with the different local government units, local DENR and with other stakeholders to significantly reduce this problem.

Table 1: Observed and potential threats to the NOCWCA wetland and waterbirds

| Locality          | Threats to Wetland                                      | Threats to waterbirds                       | Development Plans                          |
|-------------------|---------------------------------------------------------|---------------------------------------------|--------------------------------------------|
| Tungawan – RT Lim | agricultural effluents; indiscriminate mangrove cutting |                                             |                                            |
| Naga              | agricultural effluents; sedimentation                   |                                             |                                            |
| Siay-Kabasalan    | agricultural effluents; sedimentation                   | Use of poison and firecrackers in fishponds | Community-based wetland tourism activities |
| Olutanga          | agricultural effluents; sedimentation                   |                                             |                                            |

Clearing of mangroves for fishpond development used to be rampant in the 1980's to 1990's in most of Sibugay Bay. The active campaign for the replanting of mangroves under Community-based Forest Management Agreements in Sibugay Bay has significantly increased the mangrove cover in the area particularly within Siay and Kabasalan wetlands. This encouraged the local fisher folks to support the mangrove protection and the implementation of the Local Fisheries Code as they have experienced the increase in catch per unit effort and the better quality of the seafood products produced. They attribute the positive changes to the protection of the wetlands. There were still reported incidents of indiscriminate mangrove cuttings in some sections where insurgency problems were also high.

Solid wastes still remains a general concern in the area but significant changes had been observed in the last five years. Both DENR and the Local Government including the Office of the Representative from Zamboanga Sibugay had actively campaigned for the management of solid wastes. The DENR, Local Government of Siay, Provincial Government of Zamboanga Sibugay as well as the Office of the Representative from Zamboanga Sibugay also actively worked with local communities in developing the community-based sustainable wetland tourism program as a showcase area in Siay.

In the last two years, the local government of Siay has also campaigned for the removal of illegal fishing structures, implement sustainable fishing practices and provided significant annual budget support for monitoring and enforcement activities e.g. new motorized boats, task force, etc. Conservation education and awareness campaigns on





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the ecosystem services of wetlands, migratory birds including the coastal mudflats. In the last two years, there had been several dialogues, meetings with the local fishermen, fishpond owners as well as with operators in the area to resolve conflicts and misconceptions.

### Species Abundance

A total of 68,718 individuals composed of 47 species belonging to 11 families were recorded in Sibugay Bay from January 2019 to January 2020 (Table 2). The shorebirds (Scolopacidae) was the most represented family (39%) with 17 species, followed by Herons and Egrets (Ardeidae - 25%) with 11 species, Plovers (Charadriidae - 11%) with five species, Gulls and Terns (Laridae - 7%) with three species, Rails (Rallidae - 8%) with two species, and the Kingfishers (Alcedinidae), Ducks and Mallards (Anatidae), Grebe (Podicipedidae), Snipes (Recurvirostridae), Osprey (Pandionidae), Hawks and Eagles (Accipitridae) represented 2% (with at least one species).

Table 2. Summary of results of waterbird survey to January 2019 – January 2020.

| Species Name                      | Nov 2019 | Dec 2019 | Jan 2020 |
|-----------------------------------|----------|----------|----------|
| Total number of species           | 75       | 79       | 77       |
| Total individuals                 | 31,355   | 34,469   | 68,718   |
| Number of threatened species      | 5        | 5        | 5        |
| Number of Near-threatened species | 8        | 8        | 8        |

The Little Egret *E. garzetta* (21,545) was the most abundant species in the wetlands followed by Whiskered Tern *Chlidonias hybrida* (11,017), Great White Egret *A. alba* (8,116) and the Intermediate Egret *A. intermedia* (8,610). The Gull-billed Tern *Gelochelidon nilotica* surpassed the 5,000 numbers of individuals (Figure 4).

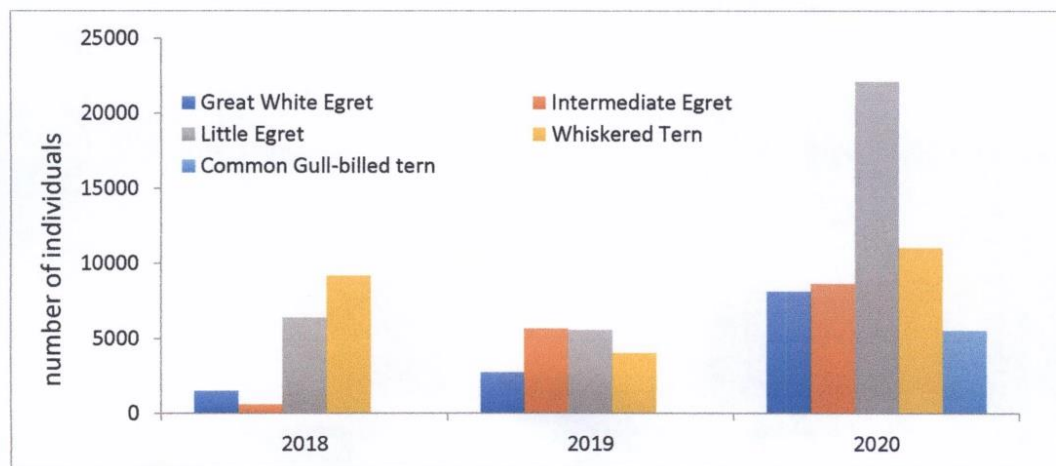


Figure 4. Yearly comparison of population counts of the top six most abundant waterbirds in Siay-Kabasalan wetlands (2018 - 2020).

The highest count for egrets and terns was on January 2020 where 22,109 Little Egrets and 11,017 Whiskered Terns were counted. Most of the egrets were counted on fishponds and along the coastal mudflats during low tide. The Common Gull-billed Tern was observed for the first time in the area (Figure 4).



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## Monthly Variations in Species and Populations

The January count covers more than 50% of the coastal wetlands in Sibugay Bay while the count results from the month of November to December should be interpreted with caution as this covered only the sites in Olutanga and Tulusan. Based on the monthly count, the total number of species of waterbirds was highest on the month of January followed by September - October with the lowest on May 2019 (Table 3). The total number of individuals was also highest on January in Sibugay wetlands.

Table 3. Monthly waterbird population count in Sibugay wetlands from January 2019-2020.

| Species Name                                         | Jan<br>2019 | Feb<br>2019 | Apr -<br>May<br>2019 | Aug<br>2019 | Sep-<br>Oct<br>2019 | Nov-<br>Dec<br>2019 | Jan<br>2020 |
|------------------------------------------------------|-------------|-------------|----------------------|-------------|---------------------|---------------------|-------------|
| Wandering Whistling Duck <i>Dendrocygna arcuata</i>  | 8           | 72          | 161                  | 17          |                     |                     |             |
| Philippine Duck <i>Anas luzonica</i>                 | 26          | 9           |                      | 154         |                     |                     | 419         |
| Little Grebe <i>Tachybaptus ruficollis</i>           |             |             | 116                  | 99          |                     |                     | 293         |
| Barred Rail <i>Amauornis torquata</i>                |             |             |                      |             | 2                   |                     |             |
| White-breasted Waterhen <i>Amauornis phoenicurus</i> |             |             |                      |             |                     |                     | 1           |
| Common Moorhen <i>Gallinula chloropus</i>            | 278         |             | 210                  | 132         |                     |                     | 272         |
| Rufous-night heron <i>Nycticorax caledonicus</i>     |             |             |                      | 5           | 5                   | 1                   |             |
| Striated heron <i>Butorides striatus</i>             |             |             | 5                    | 10          |                     |                     | 5           |
| Javan Pond Heron <i>Ardeola speciosa</i>             | 32          | 23          | 15                   | 26          | 18                  | 2                   | 32          |
| Cattle Egret <i>Bubulcus ibis</i>                    | 12          |             | 612                  | 4           |                     |                     | 28          |
| Grey Heron <i>Ardea cinerea</i>                      | 169         |             |                      |             | 22                  | 24                  | 11          |
| Great-billed Heron <i>Ardea sumatrana</i>            |             |             |                      |             |                     |                     |             |
| Purple Heron <i>Ardea purpurea</i>                   | 200         |             | 3                    | 6           | 2                   | 15                  | 70          |
| Great Egret <i>Egretta alba</i>                      | 2759        | 2764        | 612                  | 484         | 59                  | 32                  | 8116        |
| Intermediate Egret <i>Egretta intermedia</i>         | 5789        | 320         | 803                  | 711         | 59                  | 9                   | 8610        |
| Little Egret <i>Egretta garzetta</i>                 | 5793        | 458         | 1068                 | 579         | 2                   | 14                  | 22109       |
| Chinese Egret <i>Egretta eulophotes</i>              |             | 1           |                      |             | 1                   |                     | 2           |
| Black-winged stilt <i>Himantopus himantopus</i>      | 692         | 150         | 1603                 | 446         |                     |                     | 1020        |
| Pacific Golden Plover <i>Pluvialis fulva</i>         | 151         |             |                      |             |                     |                     | 589         |
| Grey plover <i>Pluvialis squatarola</i>              | 34          |             |                      |             |                     |                     | 1           |
| Kentish Plover <i>Charadrius alexandrinus</i>        | 1           |             |                      |             |                     |                     | 189         |
| Little Ringed Plover <i>Charadrius dubius</i>        |             |             |                      |             |                     |                     | 32          |
| Malaysian Plover <i>Pluvialis peronii</i>            | 50          |             |                      |             |                     |                     |             |
| Greater Sand Plover <i>Pluvialis leschenaultia</i>   | 52          | 1           | 15                   | 1           |                     |                     | 11          |
| Black-tailed godwit <i>Limosa limosa</i>             |             |             |                      |             | 1,920               |                     | 6           |
| Bar-tailed godwit <i>Limosa lapponica</i>            | 2           |             | 4                    | 4           | 860                 |                     | 1           |
| Whimbrel <i>Numenius phaeopus</i>                    | 129         | 3           | 4                    |             | 8                   | 9                   | 278         |
| Eurasian Curlew <i>Numenius arcuata</i>              | 43          |             | 66                   | 1           | 15                  |                     | 89          |
| Far Eastern Curlew <i>Numenius madagascariensis</i>  | 90          |             | 251                  | 1           | 138                 |                     | 412         |
| Spotted Redshank <i>Tinga erythropus</i>             |             |             |                      |             |                     |                     | 10          |
| Common Redshank <i>Tringa totanus</i>                | 332         | 32          |                      | 170         | 6                   |                     | 350         |
| Marsh Sandpiper <i>Tringa stagnatus</i>              |             |             |                      |             | 5                   | 12                  |             |
| Common Greenshank <i>Tringa nebularia</i>            | 215         | 1           | 15                   | 61          | 8                   | 1                   | 171         |





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|                                                  |               |             |             |              |            |               |
|--------------------------------------------------|---------------|-------------|-------------|--------------|------------|---------------|
| Wood Sandpiper <i>Tringa glareola</i>            | 1             |             |             | 15           | 6          |               |
| Grey-tailed tattler <i>Heteroscelus brevipes</i> |               | 21          | 1           | 4            |            | 52            |
| Terek sandpiper <i>Xenus cinerues</i>            | 1             | 12          | 34          | 46           | 2          | 1             |
| Common sandpiper <i>Actitis hypoleucos</i>       | 44            | 309         | 186         | 1            | 12         | 3             |
| Ruddy Turnstone <i>Arenaria interpres</i>        | 7             |             |             |              |            | 22            |
| Red knot <i>Calidris canutus</i>                 |               |             | 10          | 304          |            | 252           |
| Great Knot <i>Calidris tenuirostris</i>          | 219           |             |             | 802          |            | 1,455         |
| Red-necked stint <i>Calidris ruficollis</i>      |               |             |             |              |            | 13            |
| Ruff <i>Philomachus pugnax</i>                   |               |             | 10          |              |            |               |
| Gull-billed tern <i>Gelochelidon nilotica</i>    |               |             |             |              |            | 5,530         |
| Whiskered tern <i>Chidonias hybridus</i>         | 4,049         | 3004        | 5713        | 4            | 39         | 2             |
| Common kingfisher <i>Alcedo atthis</i>           |               |             | 7           |              |            |               |
| Collared kingfisher <i>Todiramphus chloris</i>   |               |             |             | 3            |            | 7             |
| Osprey <i>Pandion haliaetus</i>                  |               |             |             |              |            | 2             |
| Brahminy Kite <i>Haliastur indus</i>             |               | 3           |             | 8            | 4          | 4             |
| Unidentified egret                               |               |             |             | 80           |            |               |
| Unidentified plover                              |               |             |             | 2            |            |               |
| <b>Total number of individuals</b>               | <b>21,728</b> | <b>9877</b> | <b>2985</b> | <b>5,089</b> | <b>134</b> | <b>68,718</b> |
| <b>Total number of species</b>                   | <b>27</b>     | <b>24</b>   | <b>25</b>   | <b>30</b>    | <b>14</b>  | <b>36</b>     |
| <b>% coverage</b>                                | <b>100</b>    | <b>75</b>   | <b>40</b>   | <b>40</b>    | <b>40</b>  | <b>100</b>    |

The monthly waterbird count also showed interesting results for threatened species. The Great Knot was recorded as early as August with increasing numbers on the month of September and peak population count on January 2020. The Far Eastern Curlew was recorded in higher numbers in April than in January 2019 and population count doubled up in January 2020. The Philippine Duck also have higher count in August and peak numbers were observed in January (Table 3).

There were only two Bar-tailed Godwits counted and no Black-tailed Godwits were recorded in January 2019. The monthly monitoring showed that the highest population counts of the two godwits and Red Knot were on the month of September (Table 3). Both January records (2019 and 2020) did not even have 50% of the species numbers in September. Birds arrive early in August and stay over until late December before moving north. Relying on the January counts alone will underestimate the flyway population.

### Most Common and Threatened Species Distribution and Abundance

A total of four threatened species were recorded namely: IUCN Endangered Great Knot *C. tenuirostris*, IUCN Endangered Far Eastern Curlew *N. madagascariensis* and the IUCN Vulnerable Chinese Egret *E. eulophotes* and the endemic Philippine Duck *Anas luzonica*. The census also recorded eight IUCN near-threatened species.

The waterbirds in Sibugay was unevenly distributed. At least five species (Great Knot, Red Knot, Black-tailed Godwit, Red-necked Stint and Common Gull-billed Tern) were only recorded in Siay-Kabasalan wetlands. The Endangered Far Eastern Curlew was mostly recorded in Siay-Kabasalan with 34 individuals in Naga and only one record in the town of Ipil. Most of the count of Eurasian Curlew was also in Siay-Kabasalan with 13 records in the coastal mudflats of Payao. The egrets were found in almost all areas except for Tulusan where only the Great White Egrets were recorded. The highest concentration was also found in both fishponds and coastal mudflats in Siay-Kabasalan areas (Table 4).





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Table 4. Distribution and population count of threatened and most common waterbirds in Sibugay Bay January 2020.

| Common Name             | Olutanga   |            | Payao      |            | Siay-Kabasalan |               | Tungawan-RT Lim |            | Ipil-Pingi   |             | Tulusan   |           | Titay      | Naga       |
|-------------------------|------------|------------|------------|------------|----------------|---------------|-----------------|------------|--------------|-------------|-----------|-----------|------------|------------|
|                         | 2019       | 2020       | 2019       | 2020       | 2019           | 2020          | 2019            | 2020       | 2019         | 2020        | 2019      | 2020      | 2020       | 2020       |
| Philippine Duck         |            | 31         | 2          | 2          | 24             | 332           | 8               | 20         | 15           | 34          |           |           |            |            |
| Great White Egret       | 67         | 54         | 31         | 31         | 5,221          | 7,803         | 81              | 154        | 1,140        | 163         | 26        | 14        |            | 10         |
| Intermediate Egret      | 81         | 558        | 112        | 6          | 5,962          | 6,856         | 122             | 176        | 1,340        | 1,084       | 28        |           | 22         | 52         |
| Little Egret            | 9          | 6          | 218        | 18         | 6,029          | 20,983        | 311             | 32         | 1,306        | 884         | 15        |           | 98         | 88         |
| Chinese Egret           | 3          |            |            |            |                |               |                 | 1          |              |             |           | 1         |            |            |
| Black-winged Stilt      |            |            | 305        | 254        | 2,016          | 621           | 98              | 93         | 472          | 50          |           |           |            | 2          |
| Eurasian Curlew         |            |            | 13         | 13         | 97             | 76            |                 |            |              |             |           |           |            |            |
| Far Eastern Curlew      |            |            |            |            | 342            | 379           |                 |            |              | 1           |           |           |            | 32         |
| Bar-tailed Godwit       |            |            |            |            | 10             |               |                 |            |              | 1           |           |           |            |            |
| Black-tailed Godwit     |            |            |            |            |                | 6             |                 |            |              |             |           |           |            |            |
| Great Knot              |            |            |            |            | 219            | 1,455         |                 |            |              |             |           |           |            |            |
| Red Knot                |            |            |            |            | 50             | 252           |                 |            |              |             |           |           |            |            |
| Red-necked Stint        |            |            |            |            |                | 13            |                 |            |              |             |           |           |            |            |
| Terek Sandpiper         |            |            |            |            | 51             |               | 1               |            | 41           | 1           |           |           |            |            |
| Grey-tailed Tattler     | 3          | 45         |            |            | 22             | 7             |                 |            |              |             |           |           |            |            |
| Common Gull-billed Tern |            |            |            |            |                | 5,530         |                 |            |              |             |           |           |            |            |
| Whiskered Tern          | 163        |            | 37         |            | 9,569          | 16,586        | 543             |            | 2,621        |             | 10        |           |            | 129        |
| <b>Total</b>            | <b>326</b> | <b>694</b> | <b>718</b> | <b>324</b> | <b>29,612</b>  | <b>60,899</b> | <b>1,164</b>    | <b>476</b> | <b>6,935</b> | <b>2218</b> | <b>79</b> | <b>15</b> | <b>120</b> | <b>313</b> |

The January 2020 records show that about 97% of the waterbirds in Sibugay Bay are concentrated in Siay-Kabasalan wetlands (Table 4). The egrets and Whiskered Terns on the other hand were distributed across the extent of the wetlands with high concentrations in Siay-Kabasalan and Naga. The egrets and terns utilize large areas of the inland fishponds in Siay-Kabasalan both as feeding habitat and high tide roosting area. The mangroves in Siay-Kabasalan serve as breeding sites for resident herons and egrets. The migratory egrets use the trees close to the fishponds in Naga and Siay as roost habitats. Majority of the migratory shorebirds use the foreshore and riverine intertidal mudflats as well as mudflats in fishponds as primary feeding and roosting site.

The Philippine Ducks was distributed in several sites but the highest concentration was still on Siay-Kabasalan areas (Table 4). We suspect that there were more populations in Tungawan and RT Lim areas but the insurgency issues in the area made it challenging to do a proper waterbird count.

#### Waterbird species of international conservation importance

There were at least five species that surpassed the 1% share of the EAAFN population. The Sibugay wetland supports 1.5 to 1.8% of the total EAAFN population of the Endangered *N. madagascariensis*. The site also supports 9% of the population of *E. alba*, 27% of the *E. intermedia*, 22% of *E. garzetta* and 11% of *S. hybridus*. Other





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significant species recorded include the Endangered Great Knot, Vulnerable Philippine Duck, Vulnerable Chinese Egret and, at least eight near-threatened species.

Table 5: Internationally important species identified in the 2019 – 2020 counts.

| No | State/<br>Province   | Site Name   | Species of international<br>importance >1%                                                                                                                                                           | Other significant<br>species                                                                                                                                                                             |
|----|----------------------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1  | Zamboanga<br>Sibugay | Sibugay Bay | <ul style="list-style-type: none"><li>• 1.5 - 1.8 % Far Eastern Curlew</li><li>• 9% Intermediate Egret</li><li>• 27 % Great Egret</li><li>• 22 % Little Egret</li><li>• 11% Whiskered Tern</li></ul> | Great Knot<br>Philippine Duck<br>Chinese Egret<br>Eurasian Curlew<br>Bar-tailed Godwit<br>Black-tailed Godwit<br>Grey-tailed Tattler<br>Red Knot<br>Red-necked Stint,<br>Terek Sandpiper<br>Malay Plover |

### Colour Marked Birds

Colour rings are a great non-invasive and cost-effective way to monitor survival and movement of birds. Each participating country has a unique combination assigned. Here are the colored marked waterbirds in Sibugay Bay Wetlands documented in 2019 to 2020.



Figure 5. Colour flag plover and turnstone sighted in Sibugay Bay Wetlands (Photos by Dante A. Oporto)

On January 14, 2020 a Greater Sand Plover *Charadrius leschenaultii* was documented in Sibugay Coastal Wetlands. The colour flag green/blue with 00E inscription was banded as an adult in Tiaozini, Jiangsu Province, China. A Common Redshank *Tringa totanus* with black flag on right tibia and probably lost the other flag was also photographed last March 22, 2019 at Sibugay Wetlands (Figure 6.)





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Two Red Knot *Calidris canutus* with blue over white flag on left tarsus and incoloy ring on right tarsus and with black over white flag on right tibia and an AC inscription and metal band on left tibia was photographed last March 22, 2019. Blue over white is assigned to Tokyo Bay & Miyagi Prefecture, Japan while black over white is from Chongming Island, China.

A Great Knot was observed several times e.g. March 21-22, 2019, February 19, 2019, January 22, 2019, January 06, 2019, September 24, 2018, November 24, 2018, and December 23, 2018 with SBW with black over discolored White flag on right tibia with U72 (F133475) inscription. In August 29, 2018, another Great Knot with black over white combination from Chongming Island, China was photographed. Another bird was sighted with black over white flag from Chongming Island, China (Figure 6). Inquiries informed us that the bird was ringed and flagged last April 1, 2017



Figure 6. Flagged knot observed in SBW (Photos by Dante A. Oporto)

A number of adult Ruddy Turnstone *A. interpres* with white over blue in left tarsus and incoloy ring on the right was originally banded and flagged on August 7, 2018 at Hanpao wetland, Changhwa County, Taiwan with ring number D16342. Another non-breeding bird with E11 in blue flag sighted several times (January 2018, April 3-5, 2019, March 21-22, 2019 and January 12, 2020). The bird was banded and flagged in Nan Pu mudflat, Bohai Bay, China on April 25, 2016 (Figure 7).

Another adult Ruddy Turnstone with blue flag on the right tibia with an E11 inscription was first sighted on January 19, 2018 and re-sighted on February 01, 2018; February 4, 2018, April 03, 2018, January 06, 2019, January 19, 2019, March 21- 22, 2019. The turnstone was flagged in Nan Pu mudflat, Bohai Bay, China (Figure 7).





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Figure 7. Rudy Turnstone and Redshank documented in SBW (Photos by D.A. Oporto).

### Citizen Science



Figure 8. Participants from different DENR offices and local government units (photo by DENR PENRO Zamboanga Sibugay)

Waterbird count is a challenging task and usually carried out by experience counters and researchers. It takes years of experience to have a more confident identification and count. The Department of Environment and Natural Resources (DENR) through Biodiversity Management Bureau is pushing to encourage citizen scientist to take part





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in the annual waterbird census. The DENR PENRO Zamboanga Sibugay in partnership with Philippines Biodiversity Conservation Foundation, Inc. has been conducting community-based waterbird monitoring training and identification with DENR technical staff and communities for last three years. This is a good way to enhance the identification skills of each counter to have a more accurate identification. A total of 40 participants joined the waterbird identification and monitoring training in October 2019.

## DISCUSSION

The Sibugay Bay recorded one of the highest populations of waterbirds in the Philippines (Table 6). The 2018 count of the IUCN Endangered Far Eastern Curlew reached 493 individuals and was the highest record in the country. The 412 count in January 2020 is about 1.8% share of the flyway population. Records in other wetlands in the Philippines have less than 100 individuals.

Table 6. Comparison of bird abundance (based on peak counts) of selected species from 2017-2020 with other coastal wetlands in the Philippines. Manila Bay figures were taken from Jensen (2018) while OIWS and NOCWCA data were taken from Jakosalem *et al* 2020a; Jakosalem *et al* 2020b).

| Species name                                            | Sibugay Bay<br>(2019-2020) | OIWS<br>(2019-2020) | NOCWCA<br>(2019-2020) | Manila Bay<br>(2017-2018) |
|---------------------------------------------------------|----------------------------|---------------------|-----------------------|---------------------------|
| Philippine Duck <i>Anas luzonica</i>                    | 1216                       | ---                 | 1,286                 | 625                       |
| Chinese Egret <i>Egretta eulophotes</i>                 | 2                          | 141                 | 279                   | 35                        |
| Far Eastern Curlew <i>Numenius<br/>madagascariensis</i> | 412                        | 96                  | 30                    | 68                        |
| Great Knot <i>Calidris tenuirostris</i>                 | 1455                       | 796                 | 3,667                 | 654                       |
| Black-tailed Godwit <i>Limosa limosa</i>                | 6                          | ---                 | 2,879                 | 6                         |
| Bar-tailed Godwit <i>Limosa lapponica</i>               | 2                          | 706                 | 109                   | 252                       |
| Lesser Sand Plover <i>Charadrius<br/>mongolus</i>       |                            | 7,760               | 490                   | 831                       |
| Pacific Golden Plover <i>Pluvialis fulva</i>            | 587                        | 64                  | 1,466                 | 19,164                    |
| Red-necked Stint <i>Calidris ruficollis</i>             | 13                         | 10,490              | 2,321                 | 4,741                     |
| Little Egret <i>Egretta garzetta</i>                    | 22,109                     | 587                 | 4,188                 |                           |
| Intermediate Egret <i>Egretta intermedia</i>            | 8,610                      |                     | 1,650                 | 363                       |
| Great Egret <i>Egretta alba</i>                         | 8,116                      | 1                   | 424                   | 4,664                     |
| Whiskered tern <i>Chlidonias hybridus</i>               | 11,017                     | 95                  | 5,788                 | 53,647                    |

The population of the Endangered Great Knot was higher than the counts in the two largest coastal wetlands in the Philippines and probably the second highest record in the Philippines next to Negros Occidental Coastal Wetlands Conservation Area (NOCWCA). The Red-necked Stint ranks lowest among the sites with only 13 individuals. The Vulnerable Chinese Egret was rare in the area with highest record of eight individuals in 2018 and only two individuals were seen in January 2020 (Table 4). It is also an important site for egrets with Great Egret sharing 27% of the flyway population, Little Egrets accounts for 22% while Intermediate Egret shares 9%. This is higher than the 2017-2018 counts in Manila Bay (Jensen 2018). The Whiskered Tern population recorded in January 2020 was also equally high (22% of the flyway





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population). The locals saw the high concentration of egrets and terns in the bay particularly in the fishponds as threat to the aquaculture farms in the coastal areas particularly in Siay-Kabasalan.

The Local Government of Siay with the support of the Congressional District of Zamboanga Sibugay, Provincial Government of Zamboanga Sibugay and DENR Region – 9 through the Provincial Environment and Natural Resources Office of Zamboanga Sibugay has been actively promoting Sibugay Bay for community-based tourism activities that involves a mangrove tour, bat and birdwatching, swimming, camps and river cruise. The information on the importance of wetlands and migratory birds are integrated in the tour and communication campaigns. The activities had been featured in a number of tourists – related media and on national television.

In line with this, the Provincial Government of Zamboanga Sibugay together with different local government units of the Municipality of Tungawan, R.T. Lim, Ipil, Naga, Kabasalan, Siay, Payao, Tulusan and Olutanga and the network of people's organization within each town supported the idea of declaring Sibugay Bay as wetlands of international importance and as EAAF Flyway Site. All nine local government units, the Provincial Board and the federation of people's organizations surrounding Sibugay Bar has already endorse through resolutions to have Sibugay Bay declared as Ramsar Site and EAAF network site. PENRO Zamboanga Sibugay has already sought the assistance of Biodiversity Management Bureau in the application.

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**Table 3: Internationally important and potential Internationally important sites identified in 2004/2006**

Sample format with example

| No <sup>1</sup> | State/<br>Province    | Site Name             | Species of international importance >1% <sup>2</sup>                              | Other significant species <sup>3</sup>                                                                       |
|-----------------|-----------------------|-----------------------|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
|                 | <i>Write name</i>     | <i>Write name</i>     | <i>List the species and %</i>                                                     | <i>Other observations</i>                                                                                    |
| 1               | Far Eastern<br>Culwew | Zamboanga-Sibugay Bay | <ul style="list-style-type: none"> <li>1.54% Far Eastern Culwew (2018)</li> </ul> | <ul style="list-style-type: none"> <li>Great Knot</li> <li>Philippine Duck</li> <li>Chinese Egret</li> </ul> |

**Notes**

1 - Site number corresponds to table 2.

2 - Species that meets 1% population criteria<sup>1</sup>.

3 - Sites that recorded either large number of unidentified waterbirds, or near 1% population of any waterbird species or at least one individual of a globally Threatened Species.

**Table 4: Summary List of participants with contact address and emails**

| Participants         | Address                                                                                             | Email                  |
|----------------------|-----------------------------------------------------------------------------------------------------|------------------------|
| Jino O. Salvador     | DENR PENRO Zamboaga<br>Sibugay DENR PENRO<br>Building, National Highway,<br>Ipil, Zamboanga Sibugay | penrosibugay@gmail.com |
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| Bernabe C. Duque     | DENR CENRO Kabasalan<br>Simbol, Kabasalan,<br>Zamboanga Sibugay                                     |                        |
| Jessica L. Molas     | DENR CENRO Kabasalan<br>Simbol, Kabasalan,<br>Zamboanga Sibugay                                     |                        |
| Dante A. Oporto      | DENR PENRO Zamboaga<br>Sibugay                                                                      |                        |
| Javica Faye D. Canag | DENR PENRO Zamboaga<br>Sibugay DENR PENRO<br>Building, National Highway,<br>Ipil, Zamboanga Sibugay | penrosibugay@gmail.com |
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| Joe Monfort N. Lama  | DENR PENRO Zamboaga<br>Sibugay DENR PENRO<br>Building, National Highway,<br>Ipil, Zamboanga Sibugay | penrosibugay@gmail.com |

<sup>1</sup> For all information on waterbird population estimates, 1% and IUCN Red List of Threatened Species in the EAAF region, use <http://wpe.wetlands.org/> >Search> Under Conservation framework Select "EAAF Partnership"





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|                       |                                                                                                            |                                                                                  |
|-----------------------|------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
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| Sergio S. Africa      | DENR CENRO Kabasalan Simbol, Kabasalan, Zamboanga Sibugay                                                  |                                                                                  |
| Jessica L. Molas      | DENR CENRO Kabasalan Simbol, Kabasalan, Zamboanga Sibugay                                                  |                                                                                  |
| Glenda B. Papa        | DENR CENRO Kabasalan Simbol, Kabasalan, Zamboanga Sibugay                                                  |                                                                                  |
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| Ignacio E. Loyola Jr. | DENR CENRO Imelda Poblacion Imelda, Zamboanga Sibugay                                                      | <a href="mailto:ipilcenrodenr@yahoo.com">ipilcenrodenr@yahoo.com</a>             |
| Divina B. Alejandra   | DENR CENRO Imelda Poblacion Imelda, Zamboanga Sibugay                                                      | <a href="mailto:ipilcenrodenr@yahoo.com">ipilcenrodenr@yahoo.com</a>             |
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| Miko de la Cruz       | DENR CENRO Imelda Poblacion Imelda, Zamboanga Sibugay                                                      |                                                                                  |
| Glen Bautista         | Bantay Dagat                                                                                               |                                                                                  |
| Milbert Manos         | Bantay Dagat                                                                                               |                                                                                  |
| Arturo Arat           | Bantay Dagat                                                                                               |                                                                                  |
| Orlando Solano        | Bantay Dagat                                                                                               |                                                                                  |
| Jessie Lopez          | Bantay Dagat                                                                                               |                                                                                  |
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