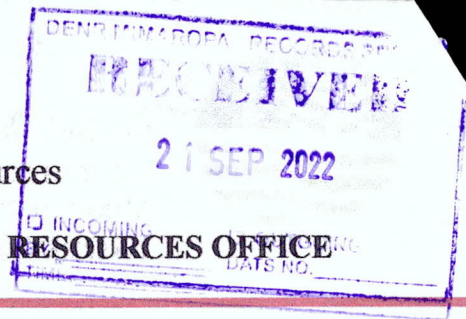




Republic of the Philippines
Department of Environment and Natural Resources
MIMAROPA Region
PROVINCIAL ENVIRONMENT AND NATURAL RESOURCES OFFICE



SEP 01 2022

MEMORANDUM

FOR : The Regional Executive Director
DENR MIMAROPA Region
1515 L&S Bldg. Roxas Blvd . Ermita, Manila

THRU : The ARD for Technical Services

FROM : The OIC, PENR Officer

SUBJECT : REPORT ON THE POPULATION COUNT OF BATS
(FLYING FOXES) CONDUCTED IN BRGY. MANGARIN,
SAN JOSE, OCCIDENTAL MINDORO ON AUGUST 16,
2022

Forwarded is the memorandum dated August 19, 2022 of CENRO San Jose regarding Report on the Population Count of Bats (Flying Boxes) conducted in Barangay Mangarin, San Jose, Occidental Mindoro on August 16, 2022.

The method used in the counting of the population of bats (flying foxes) was **Exit Count at Bat Roost** wherein approximately 19,970 individuals were accounted during the 35-minute fly out of the species, and the highest recorded so far.

Attached is the location map of the flying fox roosting site and the population count station of the observers for your ready reference.

For information and record.


ERNESTO E. TAÑADA

TSD-CDS8/31/2022

Copy furnished:

1. Planning Section
2. File

So. Pag-asa, Brgy. Payompon, Mamburao, Occidental Mindoro
Email: penroocemin@denr.gov.ph



Republic of the Philippines
Department of Environment and Natural Resources
MIMAROPA Region
Community Environment and Natural Resources Office

AUG 19 2022

MEMORANDUM

FOR : The Regional Executive Director
DENR-MIMAROPA Region
Roxas Blvd., Ermita, Manila

THRU : The OIC, PENR Officer
DENR-Mamburao, Occidental Mindoro

FROM : The CENR Officer

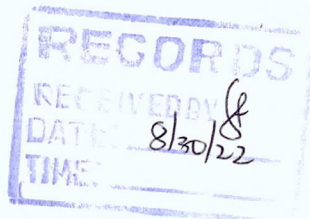
SUBJECT : REPORT ON THE POPULATION COUNT OF BATS
(FLYING FOXES) CONDUCTED IN BRGY. MANGARIN,
SAN JOSE, OCCIDENTAL MINDORO ON AUGUST 16, 2022

Respectfully submitted is the report on the population count of flying foxes within its roosting site in the mangrove area of Brgy. Mangarin, San Jose, Occidental Mindoro undertaken by the CDS-Biodiversity Management Unit staffs on August 16, 2022.

Please be informed that an **Exit Count at Bat Roost** was the method used in counting the population wherein approximately 19,970 individuals were accounted during the 35-minute fly out of the species, and the highest recorded so far.

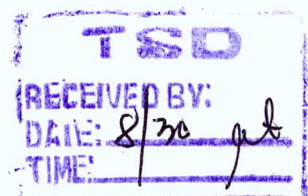
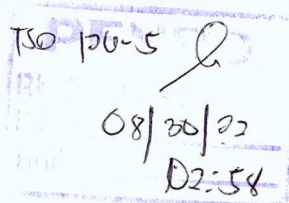
Also attached is the location map of the flying fox roosting site and the population count station of the observers for your ready reference.

For your information and record.




EFREN L. DELOS REYES

JP/MEMOfolder/PopulationCount_FF





REPORT ON THE POPULATION COUNT OF FLYING FOXES

BRGY. MANGARIN, SAN JOSE, OCCIDENTAL MINDORO

16 August 2022

I. Introduction

Bats are mammals of the order Chiroptera, which is Greek for “**hand wing**”. This is because bats have four long fingers and a thumb, each attached to another one with a thin layer of skin. With their forelimbs adapted as wings, they are the only mammals capable of true and sustained flight.

Bats have **ecological and economic importance**. Their ecological importance include that they serve as predators, prey for vertebrates, hosts for parasite, pollinator, helps in seed dispersal, contributes in making soil fertile and distribute nutrients, bioindicators and also provide various ecosystem services. On the other hand, bats are economically important too as they act as biological pest control, produces guano - the finest natural fertilizers in the world, bush meat and medicine, income-generating on aesthetic and bat watching tourism, and great inspiration for education and research.

Old Mangarin is very famous for its glorious past through its ruins and at present, is much known for its crabs, shrimps, mangroves, popular You Tube vloggers named Team *Harabas*, and the **flying foxes** or giant fruit bats. The more or less five-hectare mangrove stands composed of species from the family Avicenniaceae (*Bungalon/Api-Api/Miapi*), Sonneratiaceae (*Pagatpat*) and Rhizophoraceae (*Bakawang babae*) serve as the roosting sites or habitat of these flying mammals. The roosting trees observed were approximately 5-8 meters tall with 15–20 centimeter diameter at breast height (DBH). The area is also adjacent to many fishponds, including some abandoned ones.

II. Rationale

The **roosting sites** of the flying foxes in Old Mangarin, San Jose was first observed in 2016 and identified the following fruit bat species through interviews and actual observations (2017-2021): Giant flying fox (*Pteropus vampyrus*), Little golden-mantled flying fox (*Pteropus pumilus*) and Giant golden-crowned flying fox (*Acerodon jubatus*). Among the three species, *Acerodon jubatus* was listed as Critically Endangered, *Pteropus vampyrus* as Endangered and *Pteropus pumilus* as Near Threatened based on the DENR Administrative Order No. 2019-09 or the Philippine Red List of threatened wild fauna.

III. Methodology – Exit Count at Bat Roosts: Simple Visual Count

Flying foxes start to leave their roost while there is still light and can be counted directly without the aid of cameras or video equipment. Bat spotters/guides can be of help in alerting observers on the presence of bats. Observers outside a roost are best placed in positions where any flying bats will be back-lit against the sky.

VI. Results and Discussions

On 16 August 2022, the CDS-Biodiversity Management Unit staffs together with a local guide and stakeholder, conducted the population counting of flying foxes in Brgy. Mangarin, San Jose. They stationed themselves at the center of the fishpond with geographical coordinates of UTM 51 P 293350 1365434 where the bats can be seen when they fly-out from their roosting site.

The team assigned three (3) counting posts as it was observed in the previous counting that the bats somehow fly in 3-4 different directions. Two (2) staffs were assigned to observe and count the bats that goes to their usual route (and usually more are taking the said route going to their feeding area), and one (1) each for the other two routes to minimize double counting. At 6:11 PM, the bats started flying out of their roosting site. The fly-out lasted for 35 minutes or ended at 6:46 PM. The team counted an approximate number of **19, 970 individuals**, which is higher than the 2021 populations counts of **3,260 in July** (The survey cannot confirm the reason for the low count, but the bad weather condition during that time can be one of the factors) and **15, 190** in November, and the highest recorded count so far.

VII. Recommendations

Accuracy of counts will improve if **several people** watch/observe the roost. It is useful to have more than one (1) person watching/observing when the roost is known to have multiple exits. Alternatively, **electronic recording devices** can be used as recording aids (video camera and the like) and **high definition camera** is a must for species identification thru photo documentation hence, provision of said equipment are requested.

VIII. References

Flying-Fox Survey Manual by David Westcott & Adam McKeown CSIRO Ecosystem Sciences; Bats: Exit Counts at Bat Roosts – Simple Visual Counts Version 1.0 Jane Sedgely 2012; and Inventory and Monitoring Toolbox : Bats Department of Conservation

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Counts should begin before sunset and finish either when there is no further activity, activity has ceased for 15 minutes, or when it is too dark to see bats exiting clearly. Occasionally bats can loop around the roost or exit and enter simultaneously. Therefore, it is frequently necessary to tally bats both exiting and entering roosts and record the net number exiting to obtain the most accurate estimate of the number of bats using the roost (Thomas & LaVal 1988; O'Donnell & Sedgely 1999; Walsh et. Al 2001; O'Donnell 2002).

We do Exit Count at Bat Roost for the following **assumptions**: (1) Bats will leave roosts; (2) All bats leave the roost; (3) All exit holes/paths have been accounted for; and (4) All individuals are visible. There are also **advantages in this counting method** such as: (a) This method is simple and requires no extra time at the roost to set up complex equipment; (b) It is comparatively low in technology and resources, it is relatively cheap method to use; and (c) Using observers to count and record the number of bats exiting roosts means no extra time is required to collate data (i.e. to review videotapes, cassette tapes or download data). However given these advantages, this method have also **some disadvantages** like sometimes it is not possible to see roost exit holes/paths from available viewing positions and if environmental conditions are unsuitable (e.g. cold or wet), bats may not exit roosts.

Suitability for Inventory

- ✓ Provided environmental conditions are suitable for emergence, this method can be used to **determine simple presence/absence at roost sites**.
- ✓ With an unobscured view of roost entrances, this method can provide an accurate count of bats exiting a particular roost on a particular night.

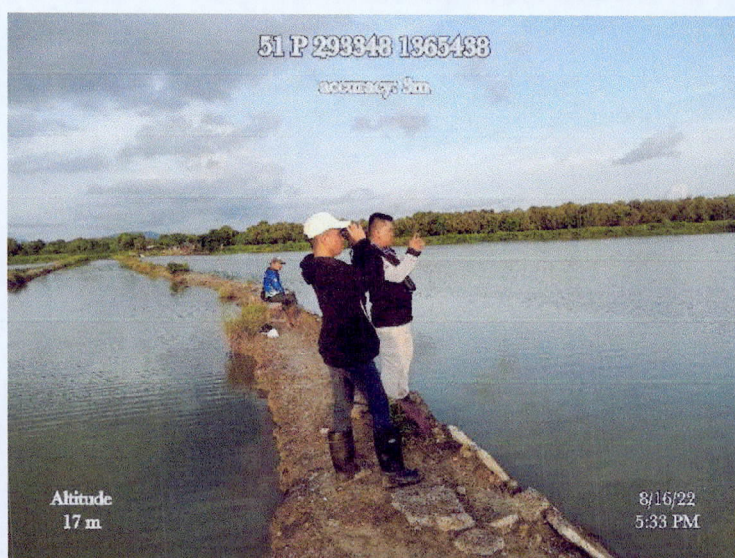
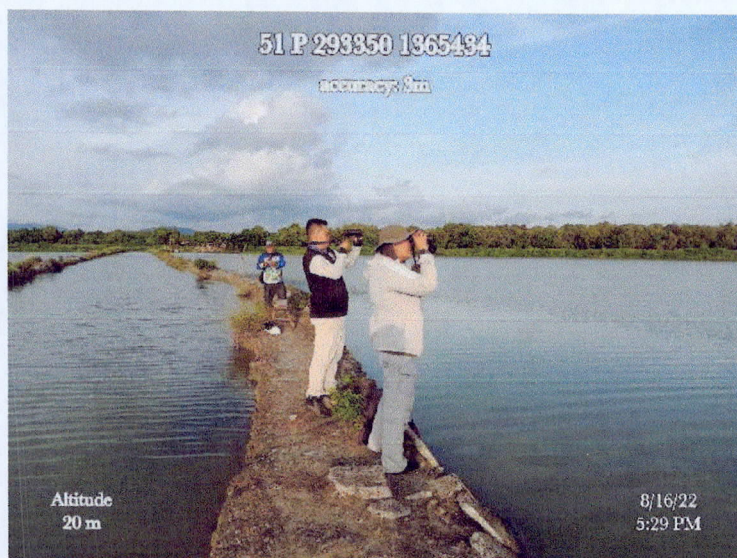
IV. Materials/Resources

- + **Binoculars should be used** as distant flying foxes can be missed and numbers of individuals in clusters can be difficult to assess when relying on eyesight alone.
- + Where ever possible, **counting should be conducted by at least two (2) individuals**. Fly-out counts always require multiple observers, often large number of observers.
- + Use **clickers** when counting the bats (1 click = 10 individuals).
- + Synchronize your watches. **Record the time** when the bats started flying out from their roosting site. Note also the time that the last bat left the roost.

V. Health and Safety Issues

Flying fox monitoring has health and safety issues that require consideration. It is recommended that a minimum set of safety standards be developed for this activity as flying foxes are hosts to a variety of diseases that can be transferred directly or indirectly to humans. While the risk of transmission of any of these diseases is exceedingly low, simple but effective precautions should still be taken. These include the following: (1) wearing a hat, long sleeved shirts and trousers to minimize direct contact with faecal material and ejecta, and (2) not handling animals.

PHOTO DOCUMENTATION DURING THE FLYING FOX POPULATION COUNT
BRGY. MANGARIN, SAN JOSE, OCCIDENTAL MINDORO
AUGUST 16, 2022

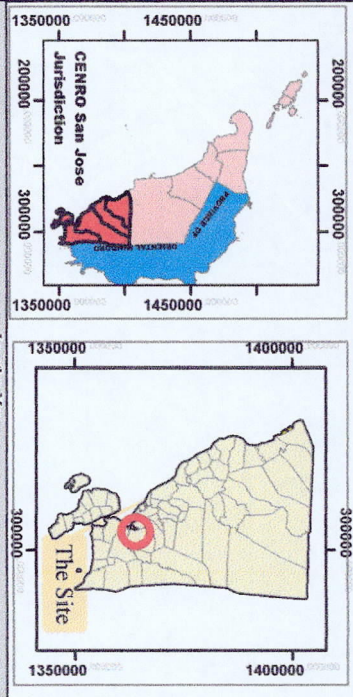
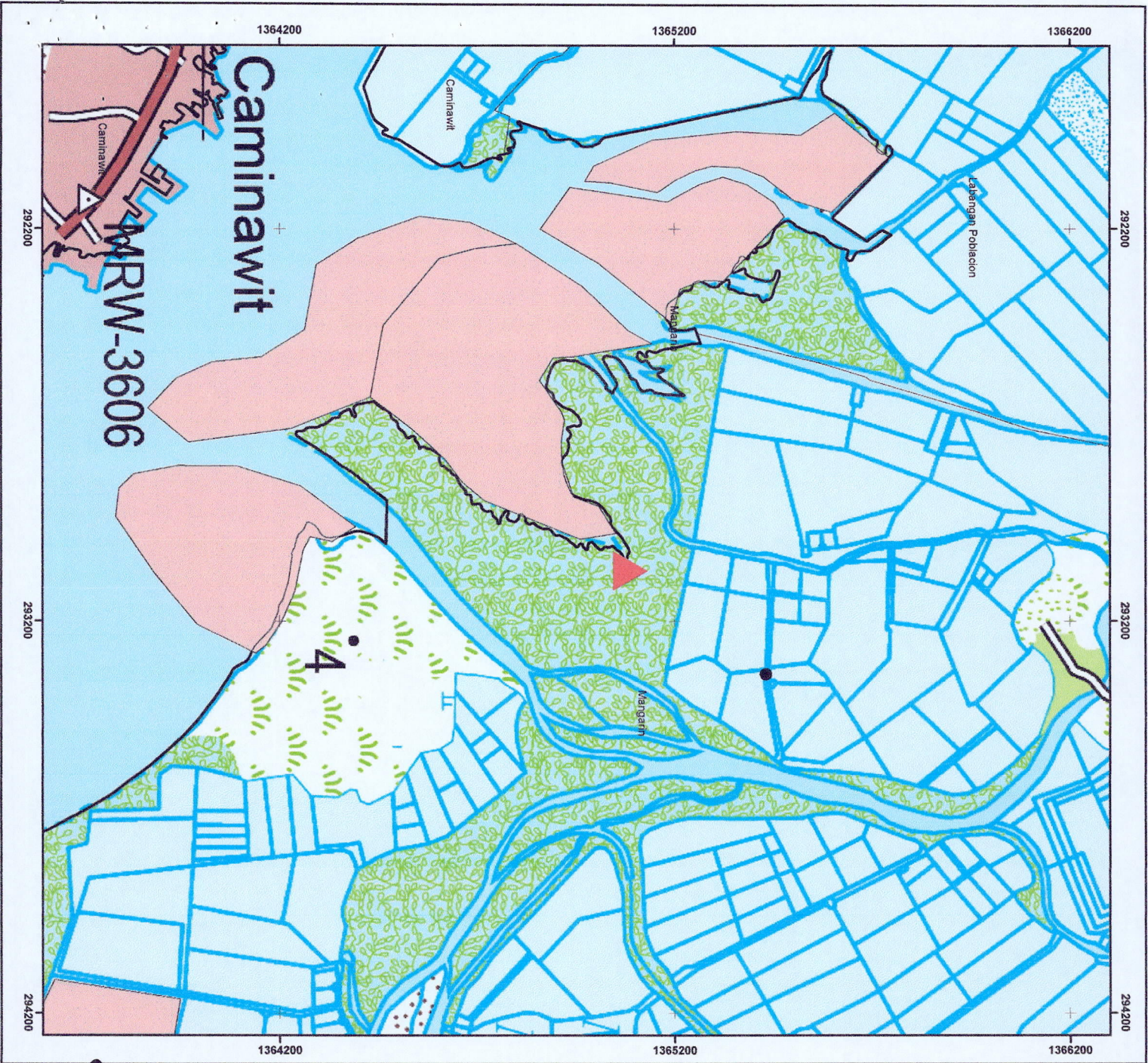




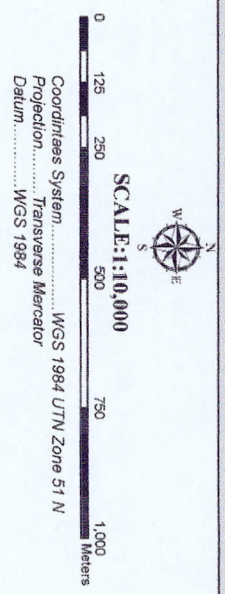
Estimated results from Counting Post #1
Bats counted ranged from 10,500 to 11,320 individuals



Estimated results from Counting Posts #2 & 3
Approximately 2,270 and 6,380 individuals were counted



LOCATION MAP OF FLYING FOX ROOSTING SITE AND POPULATION COUNT STATION



LOCATED AT:

Sitio: Mangarin
 Barangay: San Jose
 Municipality: Occidental Mindoro
 Province:

LEGEND

- Flying_Fox_Roosting_Site
- Population_Count+Station
- NGP_2011-2020
- Municipal_Boundary_Cadastral
- Road
- Base

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 ECOSYS Div. Head, BACU

Assisted by:
ORLINO S. SACUAN
 SENIOR GIS UNIT

Approved by:
EFRENTIL DE LOS REYES
 CENR Officer

1. All information in this map is strictly for Planning Use Only. No inference on Claims shall be made as to the extent of Political Boundary or Jurisdictional Boundaries.