SECRETARIAT OF THE EAST ASIAN–AUSTRALASIAN FLYWAY PARTNERSHIP
3F Bon-dong G-Tower, 175 Art center-daero, Yeonsu-gu
Incheon, Republic of Korea 22004
secretariat@eaaflyway.net

2024 Small Grant Fund for Working Groups and Task Forces Report

Migratory Waterbirds Research and Conservation Program at a Potential Important Wintering Site: Cemeti Beach, Saturuk Village, Kotawaringin Timur Regency, Central Kalimantan Province, Borneo - Indonesia

Project Duration: November 2024 – December 2024
Indonesia

Submission Date: 17 June 2025

GRANTEE OVERVIEW

Describe your organisation by filling out the table below.

Grantee Details	Name: Iwan Febrianto Position: Chief Email Address: yayasan.eksai@gmail.com
Organisation	EKSAI Foundation (Yayasan Ekologi Satwa Alam Liar Indonesia) Type of Organisation: NGO
Country	Indonesia
List any contributions that your organisation or yourself might have been involved for the protection of the migratory waterbirds and their habitats across the East–Asian Australasian Flyway below.	

Contributions to Migratory Waterbirds Conservation

Since 2018, EKSAI Foundation (Yayasan Ekologi Satwa Alam Liar Indonesia) has actively contributed to the conservation of migratory waterbirds and their habitats along the East Asian–Australasian Flyway, particularly in Sumatra, Java, and Borneo. Our key contributions include:

2019–2020: Implemented a community-based conservation program at Pantai Cemara, Jambi – a potential Flyway Network Site – with regular monitoring (>17,000 individuals recorded), habitat assessments, CEPA outreach, and local monitoring team establishment. The site supported >1% of the global population of Far Eastern Curlew and Spotted Greenshank.

2020: Conducted fieldwork in Sembilang National Park (EAAF108), a Ramsar site, confirming its critical importance for large shorebirds. Peak season observations included up to 210 Far Eastern Curlews.

2020: Explored potential non-breeding habitats in Bagan Serdang and Pantai Titik Kembar (North Sumatra), conducting benthic surveys and birdwatcher training with local communities.

2022–Present: Long-term shorebird monitoring in Kalimantan, focusing on Cemeti Beach (Central Kalimantan) – a newly identified migratory site. Activities include species surveys, bird flagging, and satellite tracking of endangered species (Numenius madagascariensis).

2023–2024: Under the EAAFP Small Grant Fund, launched a research and conservation program at Cemeti Beach involving CEPA activities, satellite telemetry, and local engagement to enhance data-driven conservation.

1.1 PROJECT SUMMARY

Project Title	Migratory Waterbirds Research and Conservation Program at a Potential Important Wintering Site: Cemeti Beach, Saturuk Village, Kotawaringin Timur Regency, Central Kalimantan Province, Borneo - Indonesia.
Location	Cemeti Beach, Saturuk Village, Kotawaringin Timur Regency, Central Kalimantan Province, Borneo - Indonesia
Project Budget	USD 4,700.00
Co-funding	USD 12,000.00 from Private Sector (PT RMU)
EAAFP Working Group or Task Force	We are members of the Shorebird Working Group under the EAAFP. Mr. Iwan Febrianto serves as a representative of Indonesia within the Shorebird Working Group, while Mr. Cipto Dwi Handono is actively involved in the Nordmann's Greenshank Sub-Group within the same Working Group. This project aligns closely with the objectives of the Shorebird Working Group, particularly in identifying and conserving important non-breeding habitats for threatened migratory shorebird species such as the Far Eastern Curlew (Numenius madagascariensis) and Great Knot (Calidris tenuirostris). The involvement of local communities and implementation of education and awareness activities also contribute to CEPA objectives, although we are not formal members of the CEPA Working Group.
Relevant EAAFP Strategic Plan	KRA 1.5, 2.1, 3.2, 3.3, 3.4, 3.5, 4.1, 5.2, 5.4

Project Overview and Outcomes

Please provide a brief summary of your project. In the summary, please include its objective and its location (Name of Place, City and Country), and explain the significance and relations of the species and its location (in link with EAAF Key Species and Flyway Network Site) for your project. Please also discuss how this project contributes to the implementation of the EAAFP Strategic Plan 2019-2028.

This project aimed to fill critical knowledge gaps on migratory shorebird ecology in Kalimantan, particularly at Cemeti Beach, a newly identified site with potential for designation as an EAAF Flyway Network Site. Through a combination of scientific fieldwork, tracking technology, and community-based outreach, the project successfully achieved several key outcomes:

- **Species Monitoring and Threat Identification**: Field surveys conducted between May and December 2024 confirmed the presence of *Numenius madagascariensis* (EN) with a maximum count of 71 individuals, reaffirming the conservation value of Cemeti Beach. In total, more than 32 migratory individuals were captured, with abundance patterns suggesting that the site may serve as a non-typical seasonal refuge outside peak migration months.

- **Community Involvement and Traditional Knowledge**: The project tested and validated alternative capture techniques using local traditional methods. The most effective capture method involved direct community-assisted capture during tidal and storm events, which minimized bird stress and increased target capture efficiency.

- **CEPA and Local Engagement**: Awareness sessions and informal dialogues were conducted with local villagers and private sector actors (e.g., PT Rimba Makmur Utama), introducing the importance of migratory shorebirds and their ecological role. Educational materials were developed to support future outreach activities.

- **Ground Verification and Flyway Planning**: Ground-checks in December 2024 validated satellite data by confirming the presence of multiple shorebird species at agricultural wetlands used by tracked individuals. These findings support the strategic inclusion of Cemeti and surrounding habitats in future flyway site proposals.

1.2 PROJECT DETAILS

Detailed Project Implementation Process and Methodologies

Describe the process of your project, including timeline, methodologies, field work, interview, conference, etc. Please include analysis of your process, if applicable. (Any visual aids, including maps, graphs, tables, flowcharts, photos, etc. are strongly preferred)

Timeline & Activities:

- **May – August 2024:** Preliminary site visits, shorebird surveys, and bird capture trials
- **September – October 2024:** Continued shorebird surveys, bird capturing
- **November – December 2024:** Ground verification, stakeholder meetings, and CEPA (Communication, Education, Participation, and Awareness) activities

Methodologies:

This study employed a combination of direct and participatory field methods to document the presence, diversity, and seasonal occurrence of migratory shorebirds at Cemeti Beach, Central Kalimantan. The three primary methodologies included:

1. Mist-netting and Traditional Capture Techniques

Bird capture was conducted using mist nets with dimensions adapted to the size and behavior of target species. This method aimed to facilitate morphological assessment, tagging (where permitted), and age-class identification. In some cases, traditional local capture methods—such as baited traps—were also tested under supervision, particularly to explore community knowledge and potential conflicts related to bird harvesting. Capture sessions were conducted during early morning and late afternoon to minimize thermal stress and maximize catch probability, though large-bodied shorebirds such as *Numenius madagascariensis* proved difficult to trap consistently due to their high wariness and flight initiation distances.

2. Direct Visual Observation

Standardized shorebird counts were carried out through **direct visual observation** during both rising and falling tides. Observers used **binoculars (8x42)** and **spotting scopes (20–60x magnification)** positioned at fixed vantage points to scan mudflats and adjacent wetlands. The counts followed the **point count** and **scan sampling** protocols commonly recommended for shorebird monitoring (Howes et al., 2003). Observations focused on species identification, group size estimation, behavior (e.g., foraging, roosting), and age classification when plumage differences allowed. Survey timing was aligned with tide charts to coincide with periods when birds were most concentrated and visible on exposed intertidal zones.

3. Field Interviews and Participatory Monitoring

To supplement observational data and understand local ecological knowledge (LEK), **semi-structured interviews** were conducted with local fishermen, bird hunters, and community leaders in Satiruk Village. Questions covered seasonal bird presence, local terminology for species, perceived trends, hunting practices, and observations of unusual bird behavior or mortality. These insights were cross-referenced with field data and contributed to CEPA (Communication, Education, Participation, and Awareness) program design. In some cases, local informants accompanied survey teams, enabling a participatory approach that enhanced mutual understanding and trust.

Problems Encountered/Adjustments/Challenges

If there were some changes made, please indicate them and explain (ex. unexpected circumstances, sudden cancellation, etc.)

During the project's implementation, several challenges arose that necessitated on-site adjustments and methodological shifts to ensure the project's continuity and success:

1. **Limited Effectiveness of Mist-Net for Large-bodied Shorebirds**

   The mist-net method, while standard in shorebird research, was found to be inadequate for capturing larger-bodied species such as *Numenius madagascariensis* and *Limosa lapponica*. These birds exhibited strong evasion behaviors and were often able to avoid the nets entirely. This limitation led the team to explore and test alternative capture methods better suited to target individuals.

2. **Integration of Traditional Capture Techniques**

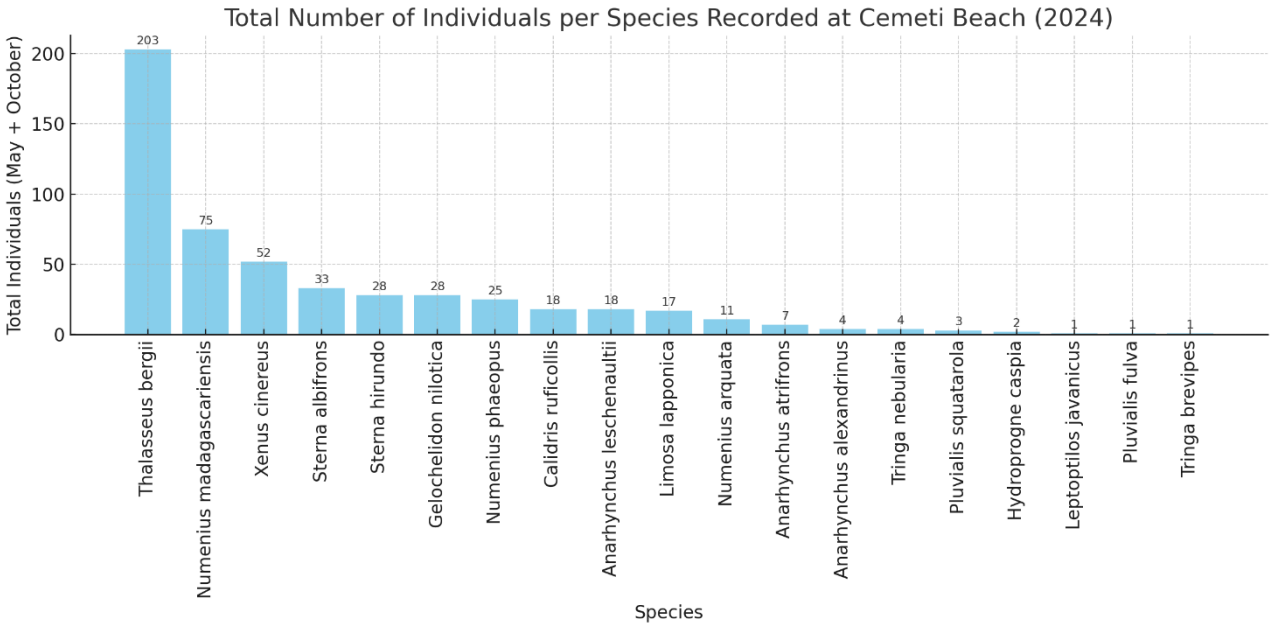
   In response, the team trialed and successfully applied traditional community-based capture methods. Notably, the direct hand-capture method during high tides and heavy rains—when shorebirds are less alert and concentrated in limited areas—proved highly effective. This not only improved capture efficiency but also enhanced collaboration with local residents and incorporated traditional ecological knowledge into the project.

1.3 PROJECT RESULTS

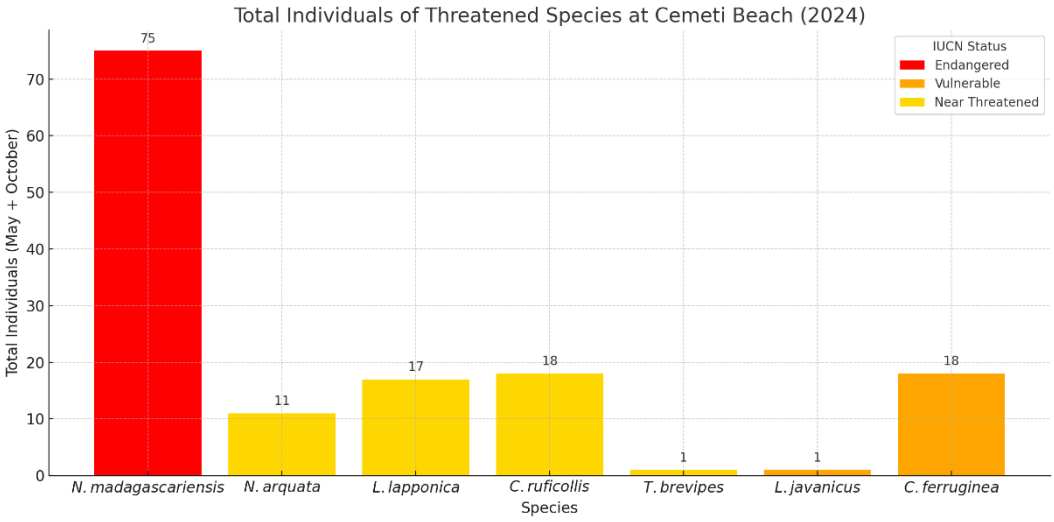
Explain and evaluate the outcomes and findings of your project (Any visual data, including maps, graphs, tables, photos, etc. are highly preferred).

A. Updated Species Inventory and Population Estimates

Between May and December 2024, a total of **25 species of migratory waterbirds** were recorded at Cemeti Beach, Central Kalimantan, as part of a **collaborative field survey with PT Rimba Makmur Utama (PT RMU)**. PT RMU deployed their field team as part of their community-based conservation commitment in Satiruk Village, while **EKSAI Foundation served as the lead technical consultant**, responsible for survey design, species identification, data collection, and analysis.



Pic 1.3.1 : Maximum Counts of Migratory Waterbird Species Recorded at Cemeti Beach, Central Kalimantan (May and October 2024)



Pic 1.3.2 : Maximum Counts of Threatened Migratory Waterbird Species Recorded at Cemeti Beach, Central Kalimantan (May and October 2024)

The most prominent finding was the repeated observation of the **Far Eastern Curlew (*Numenius madagascariensis*)**, an **Endangered species** according to the IUCN Red List. A maximum count of **71 individuals** was recorded in **May 2024**, the highest for any species in the survey (see Pic 1.3.1). Although this number does **not reach the 1% global population threshold** (estimated at 3200–3600 individuals; Wetlands International, 2021), the presence of such a high number in a single location in **Borneo**, where data on migratory waterbirds remain sparse, strongly indicates the importance of this site for conservation attention.

Other notable species include:

- *Limosa lapponica* (**Near Threatened**, 17 individuals),

- *Calidris ferruginea* (**Vulnerable**, 18 individuals),
- *Calidris ruficollis* (**Near Threatened**, 18 individuals),
- *Pluvialis fulva* and *Calidris subminuta*—which were among the most abundant small-bodied shorebirds.

Several threatened species (EN, VU, NT) were observed across **multiple months**, suggesting that **Cemeti Beach may serve both as a stopover site and as a wintering ground**—a rare documentation in the Kalimantan region (Pic 1.3.2).

These findings align with the broader regional concern to identify under-documented but ecologically significant stopover and staging areas along the **East Asian–Australasian Flyway (EAAF)** (Studds et al., 2017; Amano et al., 2018). Although Cemeti Beach does not yet qualify as a Flyway Network Site (FNS) based on population thresholds, its **species richness**, **presence of globally threatened taxa**, and **strategic location in Borneo** all support its potential for future nomination. Sustained monitoring, coupled with community-based conservation and strengthened land-use governance, will be crucial to safeguarding this overlooked yet ecologically valuable coastline.

Off-Season Presence and Conservation Implications at Cemeti Beach

One of the most notable findings at Cemeti Beach was the high number of migratory shorebirds recorded in **May 2024**, a period generally considered outside the peak migration season in Southeast Asia. Most significantly, **71 individuals of the Endangered Far Eastern Curlew (*Numenius madagascariensis*)** were observed in May alone—the highest count for any species during the survey period. This pattern stands out because, in many sites across Sumatra and Peninsular Malaysia, **shorebird numbers typically decline sharply after March–April**. Yet at Cemeti, observations in May—and in previous surveys during other "off-season" months—show consistent presence of migratory species, including a high proportion of **immature individuals**.

This phenomenon is supported by flyway research showing that **juvenile or first-year shorebirds often remain on their non-breeding grounds during the boreal summer**, rather than migrating north to breeding areas (Gan et al., 2020). For species such as the Far Eastern Curlew and Bar-tailed Godwit (*Limosa lapponica*), **non-breeding individuals—especially subadults—may stay in Southeast Asia until their second or third year** (Nebel, 2007; Amano et al., 2020). This behavior explains why Cemeti Beach, although not hosting massive flocks, consistently supports dozens of shorebirds even during the "quiet" migration months.

While **no species recorded exceeded the 1% global population threshold** for Flyway Network Site (FNS) nomination, the **repeated presence of threatened species**—in particular an Endangered species in appreciable numbers—signals the **ecological importance of the site**. According to EAAFP's own FNS criteria, a site can be considered significant if it regularly supports globally threatened species, even in moderate numbers (EAAFP, 2023). Furthermore, BirdLife International's IBA framework echoes this, stating that **sites with regular occurrence of threatened taxa qualify as globally important** under criterion A1 (BirdLife International, 2022).

Recent work in Sarawak, Malaysia, revealed that sites once overlooked—such as ash ponds or small beaches—can in fact hold key portions of Endangered populations like the Far Eastern Curlew (CMS Far Eastern Curlew Task Force, 2023). Cemeti Beach may offer a similar function:

as a **secondary but reliable site** for immature or dispersing shorebirds, contributing to overall flyway resilience.

As such, the presence of **juvenile and non-breeding shorebirds during non-peak seasons** reinforces the argument that Cemeti Beach should be **prioritized for long-term monitoring** and protection—even if it does not yet meet numeric thresholds. Its strategic location in Borneo and habitat features could fill critical gaps in the flyway network that have so far been poorly understood or documented.

1.4 COMMUNICATION, EDUCATION, PARTICIPATION, AND AWARENESS (CEPA)

Please provide details on any CEPA-related activities associated with your project.

The Cemeti Beach shorebird conservation project integrated CEPA components throughout its planning and implementation phases to ensure that local communities and partners were not only informed but actively engaged in protecting migratory waterbirds and their habitats.

Key CEPA-related activities included:

Community Dialogue and Awareness Sessions

Pic 1.4.1. Informal Discussion with PT RMU, Local Residents, and Community Tourism Group (POKDARWIS)

[An informal yet meaningful discussion was held with representatives from PT Rimba Makmur Utama (RMU), local residents of Satiruk Village, and members of POKDARWIS (Kelompok Sadar Wisata)—a community-based ecotourism group. The session focused on the importance of Cemeti Beach for migratory shorebirds and explored collaborative opportunities for integrating bird conservation with sustainable community-based tourism. These discussions were part of the project's CEPA efforts to foster multi-stakeholder awareness and long-term stewardship of critical wetland habitats.Flyway (EAAF)]

Informal education sessions were conducted with residents of Satiruk Village, focusing on the ecological and international importance of Cemeti Beach as a habitat for migratory shorebirds—particularly for Endangered species such as Numenius madagascariensis (Far Eastern Curlew). These sessions, held in a participatory and culturally respectful manner, introduced community members to the concept of the East Asian–Australasian Flyway (EAAF), highlighting how their local coastline is part of a broader network of critical habitats stretching from Siberia to Australia.

Discussions covered various threats faced by migratory shorebirds, including habitat degradation, disturbance from human activity, and direct hunting—an issue confirmed to affect at least one tracked individual during the project. The facilitation team emphasized the unique role of Satiruk's mudflats and coastal wetlands as vital "rest stops" for birds traveling thousands of kilometres, using analogies such as gas stations for birds to convey the concept.

Materials such as illustrated posters, flyway maps, and a locally tailored educational booklet were used to support understanding and engagement. The sessions also encouraged dialogue around local knowledge of bird presence, traditional practices, and opportunities for community-led conservation. These efforts aimed to build a foundation for long-term community stewardship and increased awareness of Cemeti Beach's potential to be recognized as an internationally important migratory bird site.

Involvement of PT Rimba Makmur Utama (PT RMU) and Local Participation in Field Surveys

Pic 1.4.2. Collaborative Team of EKSAI, PT RMU, and Satiruk and Cemeti Village Residents

[Members of EKSAI Foundation, PT Rimba Makmur Utama (RMU), and local residents of Satiruk Village pose together following a joint migratory shorebird survey at Cemeti Beach, Central Kalimantan. The group includes field surveyors, youth volunteers, and community members who actively participated in bird observation, data collection, and CEPA activities. This collaboration reflects a shared commitment to protecting critical habitats for migratory shorebirds along the East Asian–Australasian Flyway (EAAF)]

As a key site-based partner, PT Rimba Makmur Utama (PT RMU) provided logistical support and deployed local staff to take part in the field surveys. Their participation not only ensured smoother implementation on the ground, but also enabled the integration of CEPA messages into the broader framework of conservation and peatland restoration efforts already underway in the region.

In addition, several local youth and PT RMU field staff were directly involved in bird banding and habitat survey activities. Acting as field assistants, they gained firsthand experience with standardized ecological monitoring methods. This participatory approach helped build local capacity, foster environmental awareness, and encourage long-term stewardship of the site and its biodiversity.

Provision of Birdwatching Equipment and Training

Pic. 1.4.3 Distribution of Optical Equipment to Local Community in Satiruk Village

*[Project team representatives handed over a **Celestron spotting scope and binoculars** to local residents and village authorities of **Satiruk Village** as part of the CEPA activities. This donation aims to support community-based bird observation and monitoring efforts around Cemeti Beach. A short training session on using the optical tools and bird identification techniques was also conducted to encourage long-term local participation in shorebird conservation.]*

As part of capacity-building efforts, the project team donated optical tools including spotting scopes, binoculars, and a copy of Birds of the Indonesian Archipelago field guide to local community members and PT RMU field staff. A brief hands-on training session was held to introduce participants to proper birdwatching techniques, ethical observation practices, and species identification using the equipment and book. This was an important step in equipping local stakeholders with tools to continue independent observation and contribute to long-term monitoring.

Development of Communication Materials

To support awareness and education efforts in the field, the project developed and distributed several targeted communication materials in Bahasa Indonesia. These resources were designed not only to raise public understanding of migratory shorebirds and the East Asian–Australasian Flyway (EAAF), but also to promote conservation action at the local level.
A highlight of these efforts was the production of a **full-color educational booklet** titled:

“Pantai Cemeti dan Burung Pantai Bermigrasi: Penjaga Keseimbangan Ekosistem dan Iklim”.
This booklet presents concise and engaging explanations about:

- The ecological role and migration journeys of waterbirds in the EAAF

- The importance of Pantai Cemeti as a critical stopover and potential non-breeding site
- The threats faced by migratory shorebirds, including habitat degradation, human disturbance, and climate change
- The importance of community-based conservation efforts in Kalimantan and Indonesia's strategic role within the flyway

It includes:

- Visual illustrations of migratory flyways and seasonal migration patterns
- Species profiles for key threatened species recorded at Cemeti (e.g., *Numenius madagascariensis*, *Calidris tenuirostris*, *Limosa lapponica*)
- Simple behavioral guidelines for minimizing disturbance to roosting birds
- Calls to action that promote habitat stewardship among local readers

In addition to the booklet, the project also produced:

- **Flyway maps** and **bird identification sheets** tailored for use in field training and school activities
- **Printed posters and slides** used during CEPA sessions with local communities and stakeholders, especially PT RMU and village leadership in Satiruk

These communication materials played a central role in supporting CEPA events and remain a valuable resource for future awareness and education efforts in the region. The booklet is currently being used by PT RMU's field team and local partners as a reference for introducing the flyway concept to new audiences.

1.5 RECOMMENDATIONS AND SUSTAINABILITY

Please provide suggested actions or improvements based on your findings. Sustainability focuses on how the project's outcomes or benefits can continue over time or be maintained.

Please also include how the outcomes of your project might be applied in future research or its implications for future research.

Recommendations

- **Long-term Monitoring and Banding Programs**
  Establishing standardized long-term surveys is essential for understanding site fidelity and population trends among migratory shorebirds (Bamford et al., 2008; Nebel et al., 2008). Seasonal monitoring and individual marking through bird banding will strengthen data for conservation planning and site designation.

- **Formal Site Designation Process**
  Although the number of Numenius madagascariensis (Far Eastern Curlew) recorded at Cemeti Beach—maximum 71 individuals—does not exceed the 1% global population threshold (estimated at 3,200–3,600 individuals; Wetlands International, 2021), the repeated presence of this globally Endangered species, combined with the high species richness and usage across multiple migration seasons, suggests that Cemeti Beach warrants further consideration for Flyway Network Site (FNS) nomination.

  This aligns with EAAFP's strategic focus on recognizing under-documented yet ecologically significant sites that support globally threatened species and diverse migratory waterbird assemblages, particularly in regions like Borneo where data remain limited (Studds et al., 2017; Amano et al., 2018; EAAFP, 2010).

Formal designation would benefit from continued standardized monitoring and coordinated habitat protection efforts involving local stakeholders.

- **Strengthening CEPA and Community-Led Conservation**
  Given confirmed cases of hunting and low baseline awareness, sustained CEPA engagement is vital. Integration into community tourism (e.g., POKDARWIS), school curricula, and local governance structures can foster grassroots conservation ethics (Amano et al., 2018; Weston et al., 2015).

- **Participatory Habitat Management and Land Use Planning**
  Encroaching land-use pressures call for participatory spatial planning to ensure conservation-compatible development. Shorebird data can inform peatland restoration zones and community-managed tourism paths (Murray et al., 2014; Melville et al., 2016).

Sustainability and Future Research

This project laid the groundwork for community-based shorebird conservation in Cemeti Beach through collaboration with PT RMU, youth groups, and local ecotourism actors (POKDARWIS). The donation of optical equipment and field guides, paired with in-field mentoring, ensures that local actors are equipped to continue basic bird monitoring and advocacy beyond the project period.

However, key knowledge gaps remain. While preliminary surveys recorded 25 species, including the Endangered *Numenius madagascariensis*, further research is needed to confirm the **ecological significance** of Cemeti Beach—particularly whether it serves as a critical stopover, wintering ground, or both. Understanding this is essential for determining its candidacy as a Flyway Network Site.

To build on the initial success, future research should prioritize:

- **Long-term monitoring of priority species** to track trends and seasonal changes
- **Assessment of hunting pressure and human disturbance**, especially following known cases of bird mortality
- **Evaluation of CEPA outcomes** to measure whether awareness efforts have shifted local perceptions and behaviors
- **Habitat suitability modeling** across Kalimantan's peat-dominated coastlines to identify other under-reported shorebird sites

Together, these efforts will deepen our understanding of Cemeti's conservation value and strengthen Kalimantan's contribution to the East Asian–Australasian Flyway.

2. BUDGET REPORT

Please provide a table for the expenditure breakdown. See example below.

Spotting Scope and Tripod	950 USD
Identification Book of Indonesia Birds Species	50 USD
Meal and Meetings	1200 USD
Local Transport	1000 USD
Communication Costs	100 USD
Booklet Printing and Awareness Material	500 USD
Documentation	200 USD
Data analysis and Reporting	700 USD
Total	**4700 USD**

ANNEXES

Annex 1

Table: Maximum Counts of Migratory Waterbird Species Recorded at Cemeti Beach, Central Kalimantan (May and October 2024)

NO	Species Name		Status		2024	
	Scientific Name	Local Name	IUCN	P.106	Mei	Oktober
1	*Tringa brevipes*	Trinil Ekor Kelabu	NT		1	0
2	*Xenus cinereus*	Trinil Bedaran	LC		19	33
3	*Numenius madagascariencis*	Gajahan Timur	EN	✓	71	4
4	*Numenius phaeopus*	Gajahan Pengala	LC	✓	14	11
5	*Numenius arquata*	Gajahan Besar	NT	✓	11	0
6	*Sternula albifrons*	Dara-laut Kecil	LC	✓	17	16
7	*Thalasseus bergii*	Dara-laut Jambul	LC	✓	62	141
8	*Hydroprogne caspia*	Dara-laut Kaspia	LC	✓	1	1
9	*Anarhynchus atrifrons*	Cerek-pasir Mongolia	LC		3	4
10	*Anarhynchus leschenaultii*	Cerek-pasir Besar	LC		7	11
11	*Anarhynchus alexandrinus*	Cerek Tilil	LC	✓	4	0
12	*Pluvialis squatarola*	Cerek Besar	LC		3	0
13	*Limosa lapponica*	Biru-laut Ekor Blorok	NT		16	1
14	*Leptoptilos javanicus*	Bangau Tongtong	NT	✓	1	0
15	*Galechelidon nilotica*	Dara-laut Tiram	LC		0	28
16	*Calidris rufficolis*	Kedidi Leher Merah	NT		0	18
17	*Pluvialis fulva*	Cerek Krenyut	LC		0	1
18	*Tringa nebularia*	Trinil kaki-hijau	LC		0	4
19	*Sterna hirundo*	Dara-laut Biasa	LC	✓	0	28

Note:

IUCN : Species conservation status based on the IUCN Red List (EN = Endangered, NT = Near Threatened, LC = Least Concern).

P.106 : Species listed as protected under the Indonesian Regulation of the Minister of Environment and Forestry (Permen LHK) No. P.106/MENLHK/SETJEN/KUM.1/12/2018 on Protected Flora and Fauna. A ✓ mark indicates the species is legally protected in Indonesia

Annex 2

- *The pictures of Shorebirds Survey at Pantai Cemeti, Central Kalimantan – 2024 (copyright of EKSAI and PT RMU)*

- *The pictures of CEPA Activities – 2024 (copyright of EKSAI and PT RMU)*


RMU
05 DESEMBER
Jejak Migrasi


© cipto.deha | EKSAI

Annex 3

Lists of Participants

Note:
This list represents the primary participants involved in formal project activities such as field surveys, CEPA delivery, and coordination meetings. Additional community members, especially during informal outreach sessions and broader village discussions in Satiruk, also contributed to the project. However, participant names from these informal events were not systematically recorded.

No	Name	Affiliation	Role
1	Iwan Febrianto	EKSAI Foundation	Project Lead / Shorebird Specialist
2	Cipto Dwi Handono	EKSAI Foundation	Field Coordinator
3	Ragil S. Rihadini	EKSAI Foundation	CEPA Coordinator
4	Eko	PT Rimba Makmur Utama (RMU)	Bird Banding Assistant
5	Franky	PT Rimba Makmur Utama (RMU)	Bird Banding Assistant
6	Putri	PT Rimba Makmur Utama (RMU)	Field Assistant
7	Alfian	PT Rimba Makmur Utama (RMU)	Field Assistant
8	Elan	Local Fisherman, Satiruk	POKDARWIS Member
9	Eko Cahyono	Koramil/Kodim	(Babinsa)Bintara Pembina Desa
10	Asra	Desa Satiruk	Village Chief
11	Donnal Setiawan	PT Rimba Makmur Utama (RMU)	The Deputy Head of the Hanaut Zone
12	Pauzi	PT Rimba Makmur Utama (RMU)	Staff of Mendawai Zone
13	I Gede S	PT Rimba Makmur Utama (RMU)	Head of Mendawai Zone

Annex 4

References

Amano, T., Székely, T., Koyama, K., Amano, H., & Sutherland, W. J. (2018). Identifying priority gaps in the protected area network for shorebird conservation in East Asia. *Biological Conservation, 225*, 301–309.

BirdLife International. (2023). *Numenius madagascariensis*. The IUCN Red List of Threatened Species 2023: e.T22693199A208382351. https://dx.doi.org/10.2305/IUCN.UK.2023-1.RLTS.T22693199A208382351.en

EAAFP. (2010). *Flyway Site Network Criteria and Guidelines*. East Asian–Australasian Flyway Partnership. https://eaaflyway.net

Gan, X., Choi, C. Y., Melville, D. S., & Ma, Z. (2020). Conserving intertidal habitats for shorebirds: Legal tools and their limitations in East Asia. *Conservation Science and Practice, 2*(9), e247.

Howes, J., Bakewell, D., & Noor, Y. R. (2003). *Panduan Studi Burung Pantai*. Wetlands International Indonesia Programme, Bogor.

Nebel, S. (2007). Differential migration of shorebirds in the East Asian-Australasian Flyway. *Emu - Austral Ornithology, 107*(1), 14–28.

Studds, C. E., Kendall, B. E., Murray, N. J., Wilson, H. B., Rogers, D. I., Clemens, R. S., ... & Fuller, R. A. (2017). Rapid population decline in migratory shorebirds relying on Yellow Sea tidal mudflats as stopover sites. *Nature Communications, 8*, 14895.

Wetlands International. (2021). *Waterbird Population Estimates – Fifth Edition*. Retrieved from https://wpe.wetlands.org