



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

DENR MIMAROPA  
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**JUN 07 2023**

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BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
TIME: **6 2023** DAYS NO. \_\_\_\_\_

**MEMORANDUM**

**FOR** : The Regional Executive Director  
DENR MIMAROPA Region  
1515 DENR By the Bay Building, Roxas Boulevard,  
Barangay 668, Ermita, Manila

**THRU** : The ARD for Technical Services

**FROM** : The OIC, PENR Officer

**SUBJECT** : **TAMARAW COUNT 2023 PRELIMINARY REPORT**

Forwarded is the memorandum dated May 09, 2023 of TCP Coordinator together with other pertinent documents regarding Tamaraw Count 2023. Based on the preliminary report submitted by the TCP two (2) methodologies was employed in this year's tamaraw count, the Intensive Concentrated Count-Simultaneous Multi-Vantage Point Count (ICC-SMVPC) or the traditional counting methodology and Double Observer Count (DDC) method.

As per consolidation workshop held on April 26, 2023, the estimated account of tamaraw for 2023 was **Three Hundred Twenty-Five (325)**. Numerous improvements were developed in this year's count method to lessen errors biases and come up with the closest estimate of the true number of tamaraw in Mounts Iglit-Baco Natural Park (MIBNP). Likewise, various factors were also presented in the aforementioned preliminary report that influenced the decline in the population of tamaraw.

For information and record

  
**ERNESTO E. TAÑADA**

TSD-CDS5/11/2023

Copy Furnished:

1. Planning Section
2. File

So. Pag-asa, Brgy. Payompon, Mamburao, Occidental Mindoro  
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Republic of the Philippines  
Department of Environment and Natural Resources  
MIMAROPA Region  
Provincial Environment and Natural Resources Office  
**TAMARAW CONSERVATION PROGRAM**

May 09, 2023

**MEMORANDUM**

**FOR** : The OIC, PENR Officer  
Mamburao, Occidental Mindoro

**FROM** : The TCP Coordinator  
San Jose, Occidental Mindoro

**SUBJECT** : **TAMARAW COUNT 2023 PRILIMINARY REPORT**

The tamaraw is a small hoofed mammal belonging to the family Bovidae. It is endemic to the island of Mindoro in the Philippines. The tamaraw was originally found all over Mindoro, from sea level up to the mountains (2000 meters above sea level), but because of human habitation, hunting, and logging, it is now restricted to only a few remote grassy plains.

*Bubalus mindorensis* Heude is the only bovid native to the Philippines and is the country's largest native animal (Rabor, 1977). It is also known as the **Mindoro dwarf buffalo** (Hedges *et al.*, 2008). It was first described by Huede in 1888 in Calapan, Oriental, Mindoro.

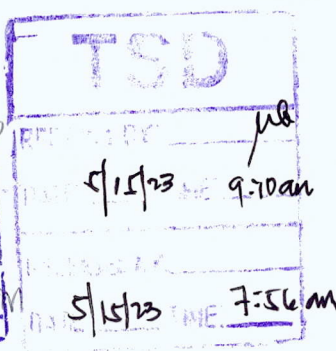
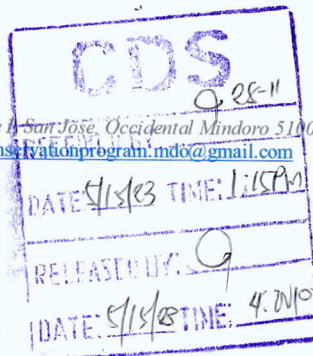
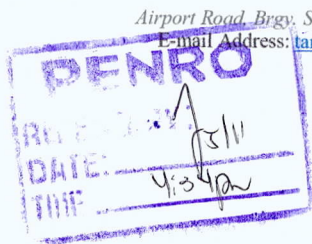
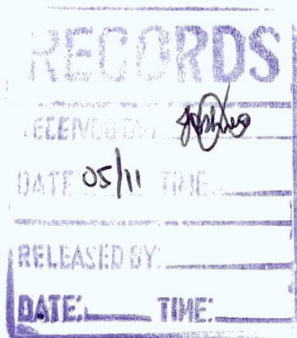
The species is currently classified as Critically Endangered under DENR Administrative Order No. 2004-15 and on the IUCN Red List of Threatened Species. Life span of tamaraw is about 20-25 years (Walker, *et. al.*, 1964).

In partial fulfillment of the TCP target under DENR Wildlife Resources Conservation Subprogram – Protection and Conservation of Wildlife – 2. Tamaraw – population survey conducted and for the purpose of compliance for the Means of Verification (MOV) of the said activity, submitted is the preliminary report on the conduct of Tamaraw Count 2023 in Mts. Iglit-Baco Natural Park on April 16 to April 24, 2023. To follow is the detailed technical report, Complete Staff Work (CSW), and data analysis.

Two (2) methodologies was employed in this year's tamaraw count, the Intensive Concentrated Count – Simultaneous Multi-Vantage Point Count (ICC-SMVPC) or the traditional counting methodology, and the Double Observer Count (DDC) method.

Results of the traditional counting method will be subjected to two (2) data treatment, the traditional consolidation data processing which results are presented in this report, and the data analysis using statistical tool to determine the range of observed tamaraws during the counting process, that will be presented in the technical report.

Data analysis of DDC is being undertaken by D'Aboville Foundation and Kristoff Bonnenfant, a large mammal monitoring expert that employs tested algorithms in data analysis of this year's count results.







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For 2023 Tamaraw count, aside from TCP and MIBNP-PAMO, participants are from partner NGOs (DAF and MBCFi), LGUs (ENRO Oriental Mindoro), and other DENR Offices (PENRO Occidental Mindoro, Biodiversity Corridor Project, and Apo Reef Natural Park).

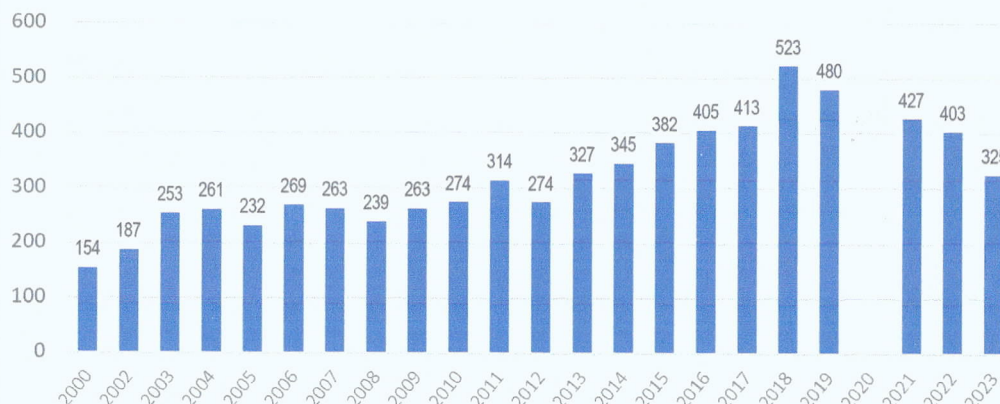
Numerous improvements were developed in this year's count method to build confidence for the data gathered, lessen errors and biases, and come up with the closest estimate of the true number of tamaraws in MIBNP. These improvements are as follows:

- Improved communication between vantage points. A radio base was erected in Magawang station with the team of PASu Hector Aragones Jr. in constant monitoring of all vantage points. The clear communications during the time of observation helped a lot in elimination of double counting across vantage points. For example, a group of tamaraws seen in Malitwang vantage point that transcended in Loibfu observation area were agreed by both observers to be recorded in Malitwang data sheet and not in Loibfu, ensuring elimination of double observation and recording. This is true and employed across all vantage points.
- Traditional point count usually lasts up to eight (8) sessions. This year, sessions were reduced to five (5) observations to reduce the possibility of accumulation of errors and double observations.
- Trainings and workshops were conducted before the count proper to fully equip assigned personnel in carrying out the activity. Observers and recorders were trained on and off site for observation and data entry.
- Pre-counting briefing and workshop were also conducted involving all participants to explain and discuss the Do's and Don'ts, rules and regulations, schedules, and assignments.
- Meal plans were also prepared per camp to avoid the issue of insufficient provisions.
- The number of participants were significantly reduced this year to about 25%, almost bare minimum to lessen distraction, noises, and congestion.

The activity concluded in the conducted Consolidation Workshop on April 26, 2023 and arrived at the number **Three Hundred Twenty Five (325)** - total estimated tamaraw count for 2023 in MIBNP. The figure less than 20% of the estimated count last year, April 2022. Below is the trend in the population of tamaraw in MIBNP from 2000 to 2023.



Estimated Tamaraw Population in MIBNP 2000-2023  
using ICC-SVIC Method



Decline in the population can be attributed to numerous factors, some of which are:

- Changes in the methodology- Refinement and improvement in the traditional counting methodology was applied in this year's counting to have a more reliable data that the estimated outcomes are close to the true number of tamaraws in MIBNP.
- Burning Phase-out plan - This year, so as to observe the burning phase-out plan, only 40% of observation areas were burned. This limits the observation of animals since tall cogon and talahib grasses in unburned observation areas somehow hindered sightings of tamaraws.
- Encroachment and habitat loss - This year, kaingins in and around the tamaraw core habitat, strict protection zone, and agreed no hunting zone of 1,600 has were scattered, driving the tamaraws into the center of the habitat.
- Intensified hunting activities – Traps still litter the periphery of the strict protection zone and sometimes within the SPZ.
- Weather – During the counting, weather was constantly cloudy; gloomy and raining. This hampers the observation and somehow changes feeding behavior of the tamaraws. Usually, tamaraw feeds in early morning and late afternoon, which is why the observation time were set at these hours. During the counting, it was always gloomy in the morning and raining in the afternoon, thus the tamaraws were only seen feeding at high noon, which were never recorded and entered in the data sheets since it was not during the observation time.
- Carrying Capacity – As stipulated in the Tamaraw Count 2022 Technical Report, the tamaraw core habitat in MIBNP have reached its carrying capacity as implied by obvious indications such as sharp drop in population, lesser %





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recruitment by birth, increased bull fighting and mortality, among others. Immediate expansion of the core habitat is eminent.

- Change in Management of the Core Habitat – starting 2021, the management of the core habitat was tasked to the MIBNP Protected Area Management Office. TCP were the one doing patrolling, monitoring and protection activities in the core habitat together with select MIBNP PAMO staff until 2021. The change in management in the core habitat might have some implications in the continuous decrease in populations for a number of reasons.

These factors will be discussed in detail in the technical report being prepared and later to be submitted. Other factors, recommendations, and immediate actions, issues and concerns, methodologies and analysis will also be included in the said report.

Attached is the traditional consolidation report and photos for your references.

For your information and record.

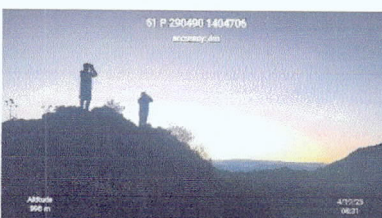
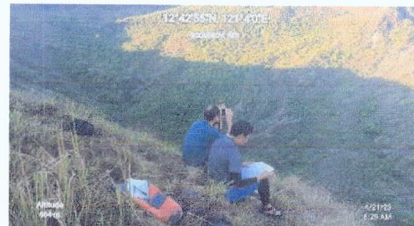
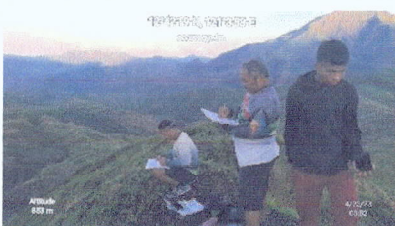
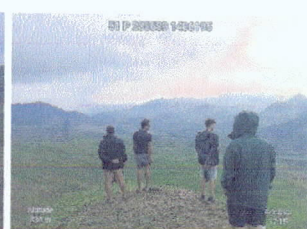
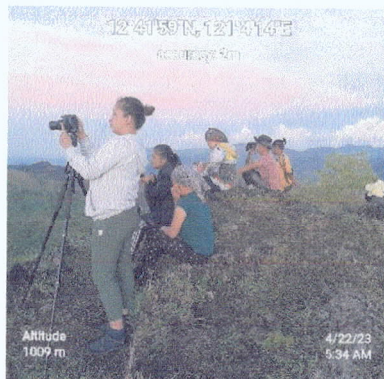
  
NEIL ANTHONY DEL MUNDO







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## CONSOLIDATED DATA ON TAMARAW SIGHTINGS, YEAR 2023

STATION NO. & AREA	TOTAL NUMBER SIGHTED										POSSIBLE DOUBLE/MULTIPLE COUNTS										ACTUAL NUMBER OF INDIVIDUALS SIGHTED										Grand Total										
	Adult					Juvenile/Sub-adult					Yearling					Calf					Adult					Juvenile/Sub-adult						Yearling					Calf				
	Bull		Cow		U	Total	M	F	U	Total	M	F	U	Total	M	F	U	Total	Bull	Cow	U	Total	M	F	U	Total	M	F	U	Total		Bull	Cow	U	Total	M	F	U	Total		
	U		U																																						
1. LIOBFU - A	3	3		6	1	2		3																													1	1	11		
2. LIOBFU - B	2	3	1	6	1	1	1	3																													1	1	10		
3. Magawang	26	35		61	1		23	24					21	21																								4	4	64	
4. Bayokbok	38	74		112	3	1	52	56					15	15																								7	7	84	
5. Bato Fidel	10	8		18			4	4					3	3																								0	22		
6. Inubon	4	8		12	1	3	5	9					3	3																							0	19			
7. Mbiuan	4	5		9		2	9	11					0																								0	12			
8. Nagbobong				0									0																									0	0		
9. Fangandatan	1	2		3			0						1	1																							1	5			
10. Anyayos	4	5		9	2	1	3		3	2	5																											2	19		
11. Lanas I	6	9		15		3	2	5					3	3																							1	16			
12. Iyan	4			4			0						0																								0	2			
13. Tarzan	1			1			0						0																								0	1			
14. Talafu West	2	2		4			0						0																								2	6			
15. Talafu East	5	8		13			0						5	5																							1	19			
16. Melitwang	6	3		9	1	3	4		1	1			1	1																							0	10			
17. Lanas II	9	14		23		4	4		9	9																											0	17			
18. Saliguil east/Tangle	5	1		6	1	3	4		2	2																											0	8			
19. Malibayong				0			0						0																								0	0			
GRAND TOTAL																																						325			

M = Male; F = Female; U = Unidentified

Consolidated and Verified by:


EDUARDO B. BATA  
Supervising Ranger

Certified Correct:


NEIL ANTHONY A. DEL MUNDO  
TCH Coordinator