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## DOLPHIN CONSERVATION DEBRIEF

September 2024

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## BACKGROUND

WWF-Cambodia has implemented several programs within the Mekong Flooded Forest landscape to address threats to wildlife. These initiatives aim to enhance the resilience of freshwater and forest ecosystems while making biodiversity accessible via ecotourism, contributing to a sustainable economy and supporting local livelihoods.

The Cambodian Mekong Dolphin Conservation Project (CMDCP) operates along a 121km stretch of the lower Mekong River between the Kratie township and Stung Treng province. Collaborating closely with the Fisheries Administration of the Ministry of Agriculture, Forestry and Fisheries, the CMDCP seeks to ensure the long-term survival of the critically endangered Mekong Irrawaddy dolphin. Since 2007, the project has monitored dolphin populations, tracked new births, assessed mortality rates, investigated causes of death and worked to reduce threats to dolphin survival.

## ABOUT THE IRRAWADDY DOLPHIN



In the last four to five decades, Irrawaddy dolphins once thrived in the Mekong River, tributaries like the Sekong, Sesan and Srepok rivers, and the Tonle Sap Great Lake. However, their habitat has significantly diminished to only 121km of the Mekong mainstream. Their range currently spans from Koh Trung island in the provincial town of Kratie to the Khone waterfalls in Stung Treng province.



During the dry season, dolphins primarily gather in the deep pools of four core zones, including Kampi and Koh Pdao in Kratie province and Tboung Kla and Koh Konsat in Stung Treng province. These core zones were established on September 2012 under the Royal Government of Cambodia's Sub-Decree No. 155 on "The Mekong Dolphin Protection and Management Zones."



The Irrawaddy dolphin in the Mekong River was classified as 'Critically Endangered' on the IUCN Red List in 2004 (Smith & Beasley, 2004) and recognized as one of the 58 threatened species under Sub-Decree No. 123 on "Determination of Types of Fisheries and Endangered Fisheries Product," in 2009. It is also considered an Appendix I species by CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora).

## RESEARCH & POPULATION MONITORING ACTIVITIES

### 1997–2000

Using direct counts and land-based surveys, the Mekong River's Irrawaddy dolphin population was estimated to be fewer than approximately 200 individuals.

### 2001–2007

Utilizing photo identification with mark and recapture methodology, our researchers estimated 127 individuals present from 2001 to 2005 and 93 individuals from 2004 to 2007.

### 2007–PRESENT

Today, we use photo identification with mark-resight methodology\*, obtaining four population estimates since 2007:

- 2007–2010: 85 individuals
- 2010–2015: 80 individuals
- 2015–2017: 92 individuals
- 2017–2020: 89 individuals

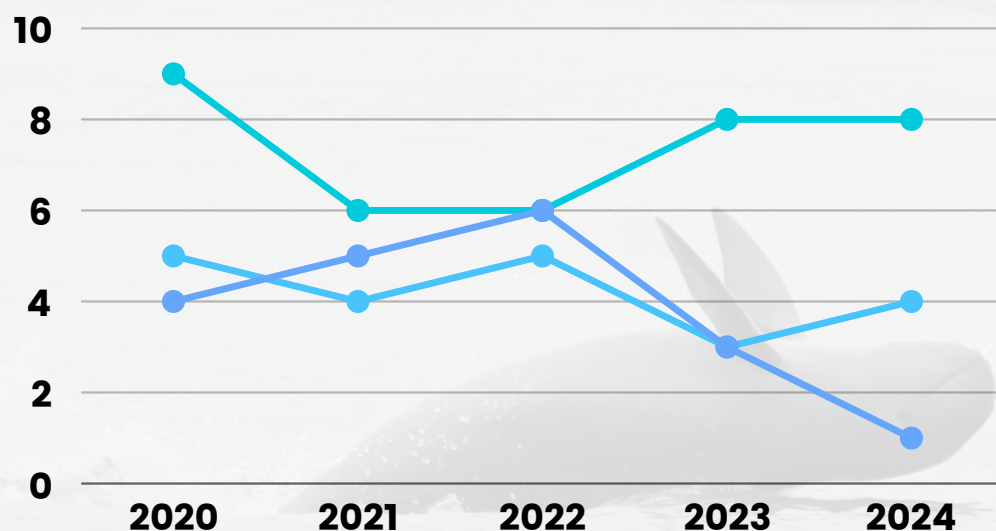
\*Mark-resight models, specifically the robust design (zero-truncated) Poisson-Lognormal estimator (ZPNE) developed under the program MARK (White and Burnham, 1999; McClintock et al., 2009; and McClintock and White, 2012) are utilized to estimate the Mekong dolphin population size.



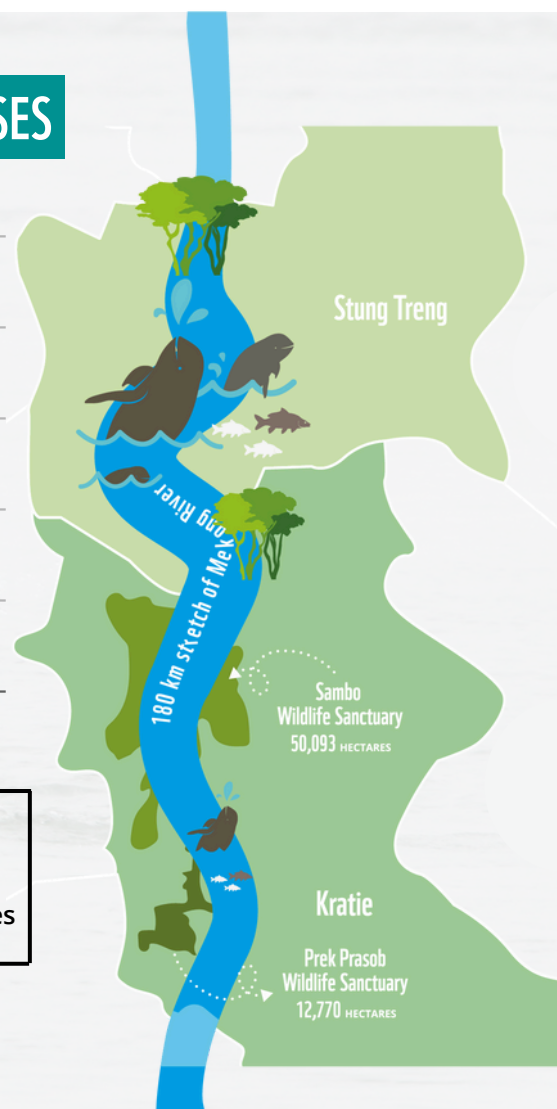
# POPULATION ESTIMATES OF IRRAWADDY DOLPHINS IN THE MEKONG RIVER, 1997–2020

Survey Years	Population Estimate	95% Confidence Interval	Population Growth	Decline Rate	Reference
1997	<200	N/A	N/A	N/A	Baird and Beasley, 2005
2001–2005	127	108–146	N/A	6.4%	Beasley et al. 2009
2004–2007	93	86–101	0.93	7%	Beasley et al. 2012
2007–2010	85	78–91	0.978	2.2%	Ryan et al. 2011
2010–2015	80	64–100	0.984	1.6%	Phan et al. 2015
2015–2017	92	80–106	0.979	2.01%	Phan et al. 2018
2017–2020	89	78–102	1.02	–2.09%	Eam et al. 2020

## CALF MONITORING AND COLLECTION OF DOLPHIN CARCASSES



- Calves recorded
- Calf carcasses collected
- Adult carcasses collected
- Total: 37 calves
- Total: 21 calf carcasses
- Total: 19 adult carcasses





## LAW ENFORCEMENT

Seventy-two river guards are stationed at 16 outposts along the Mekong River dolphin habitat, recruited by the governors of Kratie and Stung Treng provinces from the Fisheries Administration Cantonments, local communities and provincial police departments. Their primary responsibility is to conduct daily patrols aimed at eliminating the use of gillnets and other illegal fishing equipment within the core and buffer zones of the Mekong River Dolphin Management and Protection Zones.

River guards are equipped and trained according to Asian Standardized Law Enforcement Tactics. Between 2020 and 2023, they confiscated banned equipment and managed illegal fishing cases as follows:



**239,256** metres of gillnets



**234,909** metres of hook long-lines



**137** cases of electric shock fishing



**28** suspected perpetrators arrested and sent to court



**20** perpetrators sentenced to jail

## CHALLENGES FACED BY THE CMDCP PROJECT

A science-based approach to monitoring Mekong Irrawaddy dolphins is crucial for obtaining reliable information on population dynamics over time. However, this requires high skills and adequate facilities. The CMDCP has implemented a standardized dolphin photo identification technique and monitored new calf births and mortality rates, but a lack of understanding of their reproductive history remains. Nevertheless, the project has provided opportunities to enhance staff capacity in dolphin photo identification and behavioural studies. Project administrators have explored various avenues for better understanding Irrawaddy dolphin behaviour, fostering partnerships with international specialist groups to improve the capacity of national staff and governmental officials as well as increase access to resources.



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