جامعة عبد المالك السعدي
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Université Abdelmalek Essaadi

Pole for Doctoral Studies
Center for Doctoral Studies Sciences and Techniques and Medical Sciences

ANNOUNCEMENT OF DOCTORAL THESIS DEFENSE

Ms. HAMICHE Fatima Zahra

Will present their research work with the aim of earning a Doctorate

Doctoral program: Biology, Geology, and Chemistry
Discipline: Biology
Specialty: Biology marine, Ecology, Environment and Biodiversity Conservation

On 27/06/2026 at 10H30 at the Meetings Hall, Biology Department, Faculty of Sciences of Tetouan, UAE
Under the Theme

Bycatch and Stranding of Sea Turtles in the Moroccan Mediterranean Sea : Spatiotemporal patterns, Drivers, and Conservation Implications

Front of the jury composed of :

First Name & Last Name	Establishment	Designation
Pr. MOUKRIM Abdellatif	Hassan I University of Settat	President
Pr. BENNAS Nard	FS of Tetouan, UAE	Reviewer
Pr. BEN EL CAID Mohamed	FS of Agadir, UIZ	Reviewer
Pr. TAHERI Ahmed	FS of Tetouan, UAE	Reviewer
Pr. KETTANI Kawtar	FS of Tetouan, UAE	Examiner
Pr. EL BIARI Khouzaima	FS of Tetouan, UAE	Examiner
Dr. BENHARDOUZE Wafae	Hassan II High School of Tetouan, MENPS	Guest
Pr. AKSISSOU Mustapha	FS of Tetouan, UAE	Supervisor

Host Research Structure: Laboratory Ecology, Systematics and Biodiversity Conservation (LESCB), URL- CNRST N°18

Abstract

Sea turtle populations have experienced significant declines in recent years, primarily due to anthropogenic threats. Both loggerhead and leatherback sea turtles are globally threatened species, and are classified as Vulnerable on the IUCN Red List. This study investigates strandings and interactions between sea turtles and fisheries along the Moroccan coasts. A total of seventy-six sea turtle individuals were recorded as stranded, with Caretta caretta being the most frequently observed specie (n = 52, 9.9%), followed by Dermochelys coriacea (n = 24, 4.6%). Stranding events along Moroccan coasts increased significantly between 2014 and 2023, with a pronounced rise from 2020 to 2023, likely reflecting both increased anthropogenic pressures and enhanced observation efforts. Sea turtles were present year-round and at various life stages, with no significant variation in stranding season ($p > 0.05$). The majority of strandings were linked to human activities, with bycatch identified as the primary cause in 32.9% of cases, indicating the critical role of fishing interactions in sea turtle mortality.

To further assess bycatch patterns, structured, questionnaire-based interviews were conducted with 436 fishermen across twenty coastal locations in the Moroccan western Mediterranean Sea. Fishermen reported ninety-nine bycatch events over five years, with an overall mortality rate of 32.3% (n = 32), resulting in an annual mortality estimates of 80.5 events for Caretta caretta. Loggerhead turtle accounted for 79.8% of reported bycatch (n = 79), while leatherback sea turtle comprised 20.2% (n = 20). Bottom gillnets were identified as the most harmful fishing gear (n = 56, 56.5%). The fishing fleet working along Morocco's western Mediterranean coastline is estimated to result in an annual bycatch of approximately 449.6 loggerhead individuals and 171.6 leatherback sea turtle individuals. Both bottom gillnets and trawls each accounted for 16.2% of the total mortality, exclusively affecting loggerhead sea turtle. Bycatch was spatially concentrated in central fishing grounds and peaked during summer (67.7%).

A Random Forest model highlighted fishing gear type, fishing depth, vessel length, and distance to shore as key factors influencing sea turtle bycatch. It may indicate that fishing activities conducted farther offshore, where turtles are more commonly present or where monitoring is less intensive, raise the likelihood of bycatch. Sea turtle bycatch remains a major conservation concern in the Mediterranean. Bycatch findings underscore the significant threat posed by fishing gears and demonstrate the value of Local Ecological Knowledge (LEK) as a cost-effective and innovative tool for rapidly acquiring essential data on bycatch of sea turtle, particularly in the Moroccan context. The sea turtle stranding results contribute to a better understanding of sea turtle populations along Moroccan coasts, giving crucial data for the research, management, and protecting marine turtles.

Keywords: Sea turtles, Bycatch, Stranding, Caretta caretta, Dermochelys coriacea, Local Ecological Knowledge, Fisheries, Conservation, Mediterranean Sea, Morocco.