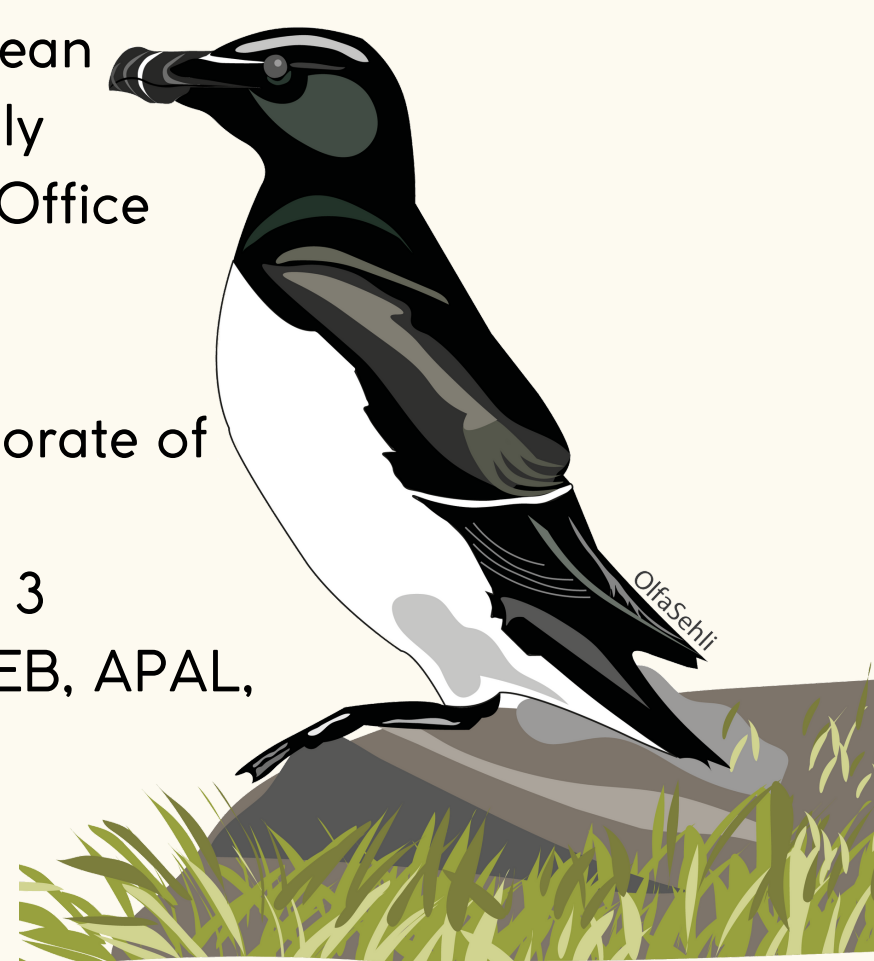


INVESTIGATION OF THE EXCEPTIONAL PRESENCE OF THE RAZORBILL (*ALCA TORDA*) ALONG THE TUNISIAN COASTLINE

Ridha Ouni, Aymen Nefla, Hannibal Hamrouni, Faouz Kilani, Foued Hamza, Mohamed Ali Chokri, Habib Dlensi, Badreddine Jemaa, Hamed Mallat, Ahmed Ben Hmida, Hassen Zaghdoudi, Housseem Ben Othmen, Oussema Fersi, Maram Aziza, Bayrem Miladi, Slim Alilech, Omar El Golli, Faycel Ghzaïel, Amira Ben Othmen, Khouloud Hamzi, Ahmed Ghdira, Sahbi Doraii, Amjed Khaïreddine, Naoufel Hamouda, Naceur Ghliis, Sami Ben Haj, Kamel El jad, Wael Ben Aba.

ABSTRACT The Tunisian coastline is known for its pelagic avifauna diversity, which occupy various marine ecosystems throughout the year. In addition to the eight pelagic bird species regularly encountered during breeding and wintering seasons, we exceptionally recorded an occasional species, the Razorbill *Alca torda*. This accidental occurrence was due to stormy weather conditions in the Atlantic which have pushed back a significant number of Razorbill specimens into the Mediterranean basin, including our Tunisian coasts. In order to understand this phenomenon and explain this recent remarkable irruption, monitoring across the entire Tunisian coastline and offshore and specifically on fishing ports and beaches, was carried out during November and December 2023. Throughout our campaign (45 days with 60 participants and specialists) we documented a total of 89 individuals observed, including 32 individuals washed up on the beaches.

METHODS This action was financially supported by "Small Mediterranean Islands" (PIM) initiative, Regional Activity Center for Specially Protected Areas (CAR/ASP), and the Environmental Study Office (OKIANOS). Administrative supporters are "Agence de Protection et d'Aménagement du Littoral" (APAL) and the General Directorate of Forests (DGF). Logistics and field work was realized by 7 associations and 3 institutions: ASPEN, ATVS, MAN, NGB, ZHST, AJEM, ASSEB, APAL, DGF and the Pasteur Institute.



FUNDING



GOVERNMENTAL PART



NON-GOVERNMENTAL NETWORK



STUDY AREA

MARINE ZONE

The studied marine area covered around 1000 linear km and approximately 2000 km², offshore 5-10km, aboard boats, going from Tabarka to Zarzisse including the islands of Zembra, Kuriat, Kerkennah, Kneiss and Jerba and the islets of Pilau, Plane, Canii and Fratelli.

TERRESTRIAL ZONE

The prospected coastal terrestrial zone reached approximately 2400 km² along of 1200 km going from Melloula to Bengerden alternating walking (300 km) and cars transects



CONCLUSION

The originality of this action was clearly demonstrated through: The complexity of the stakeholders' network that included international organizations, government structures, the private sector, the academic field and particularly a large number of NGOs collaborating in complete harmony and coherence. The context of anticipation and vigilance regarding the occurrence of any type of rare or unusual phenomenon or event Such a complete investigation of the entire Tunisian coastline was carried out for the first time in the history of Tunisian ornithology. The action allowed us to record a total of 89 Razorbills specimens, of which 36% (32) were dead and 64% (57) alive. All virological tests were negative, reinforcing the hypothesis of mortality due to migratory exhaustion.

RESULTS

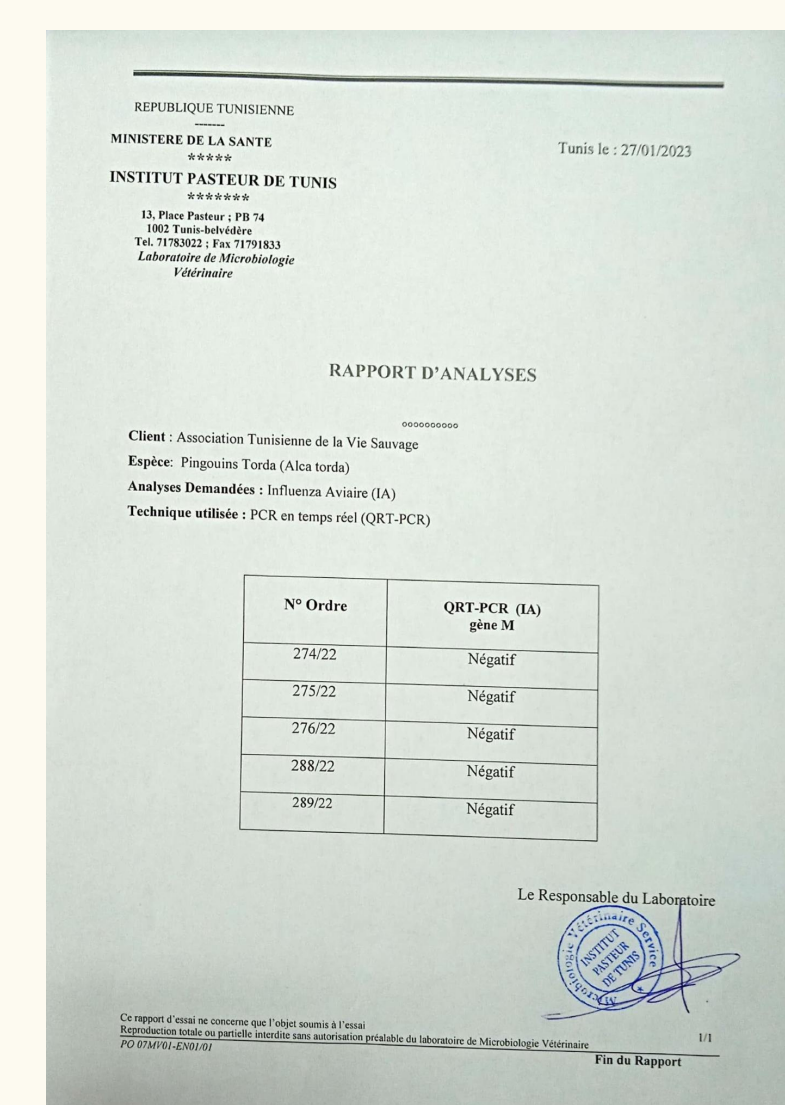
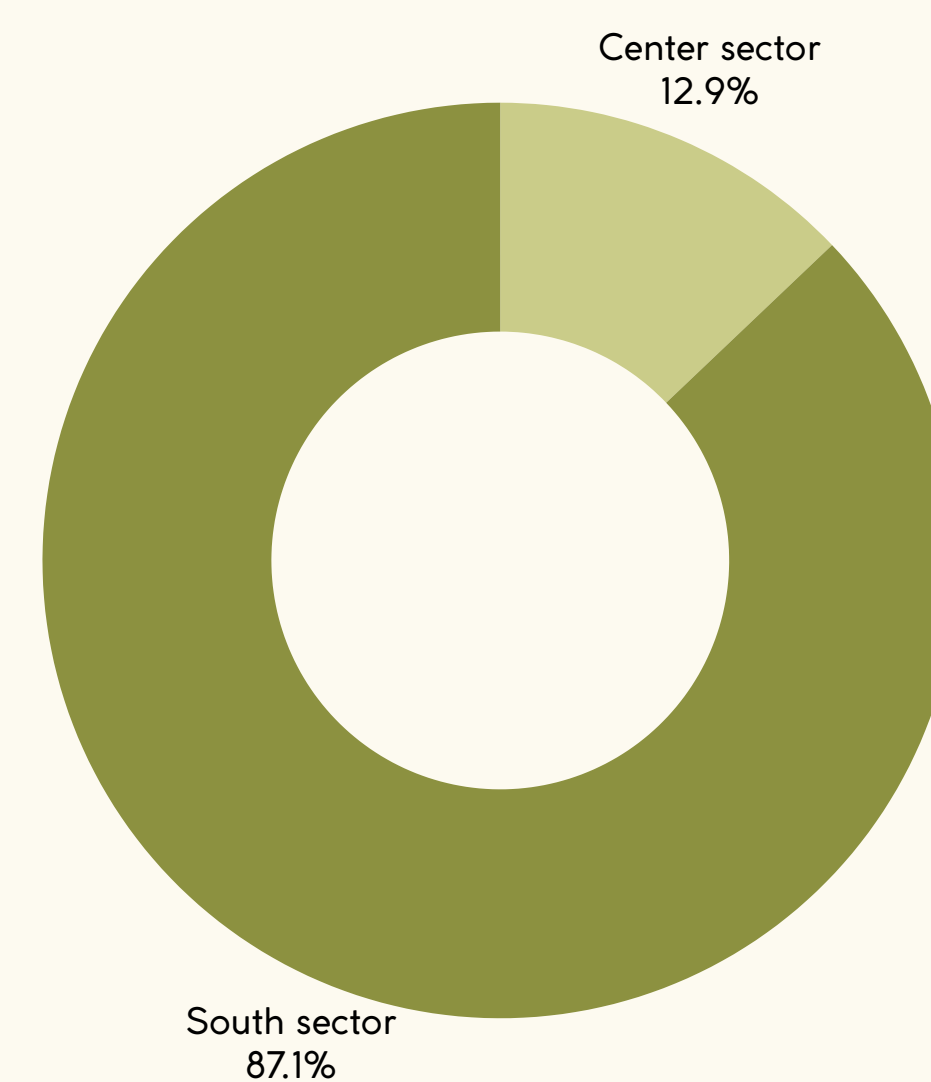
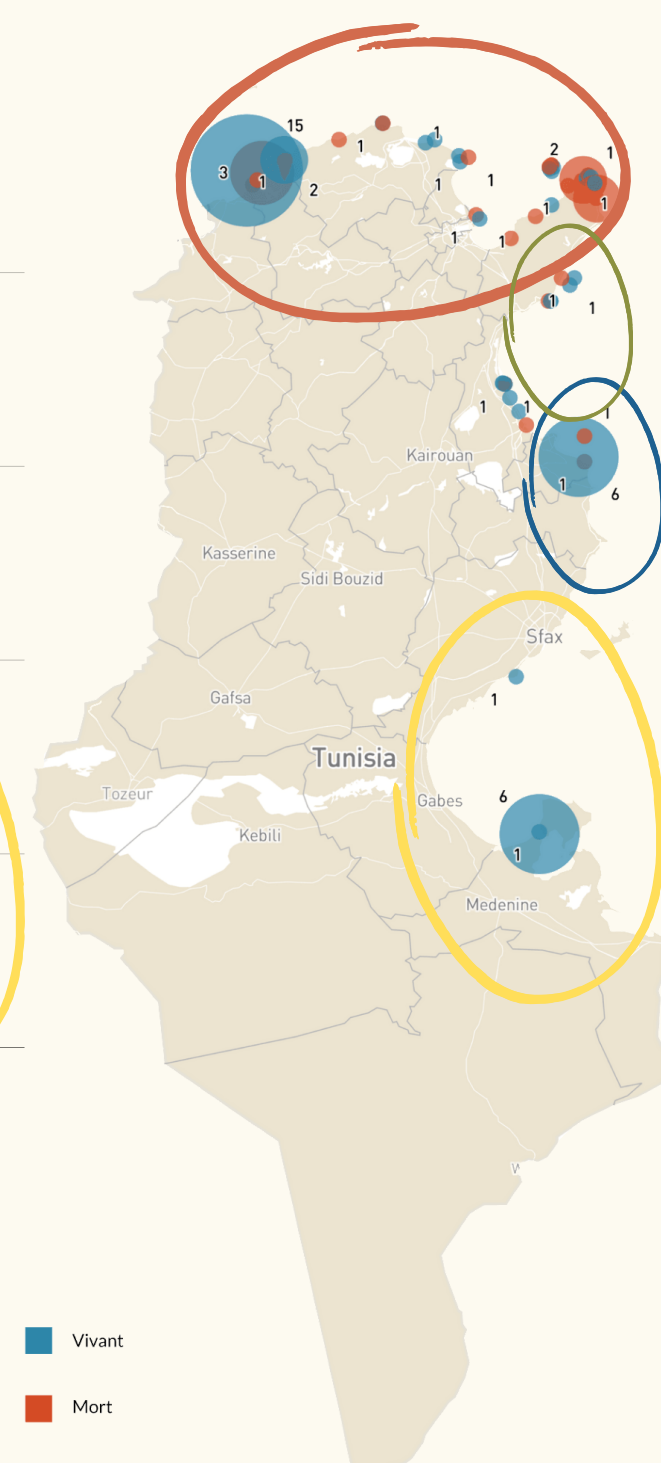
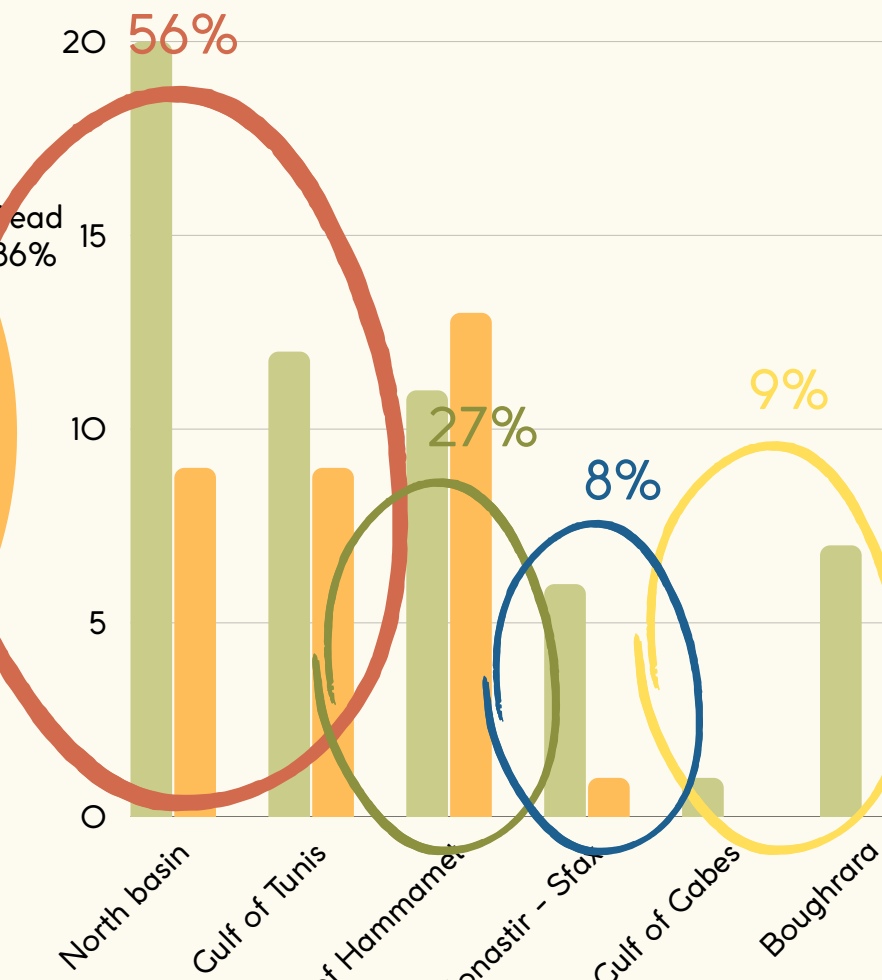
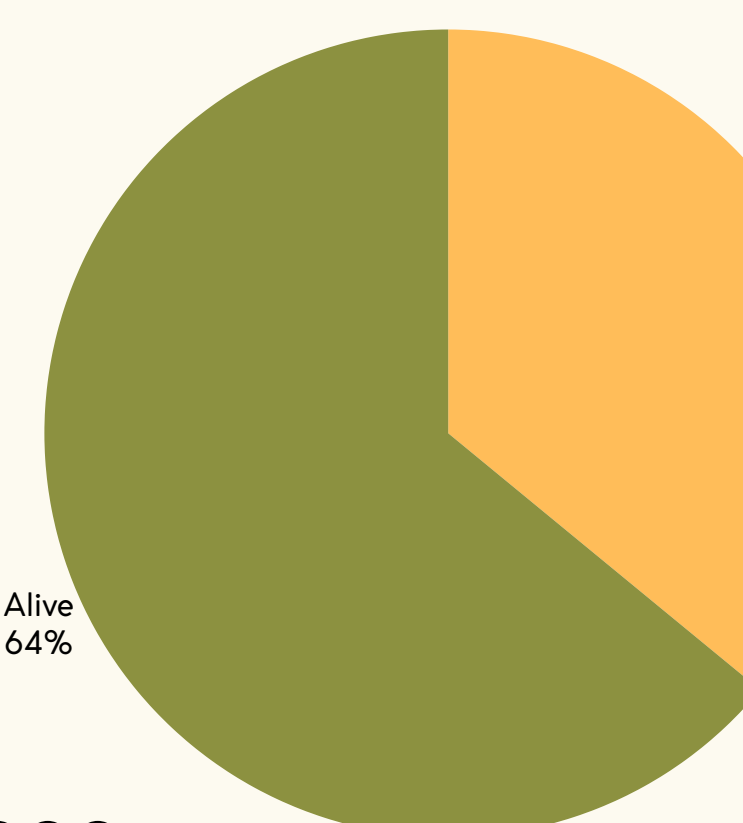
A total of 89 individuals were observed over 45 days of field work, from 11/19/2022 to 01/05/2023.

Around 35.95% of recorded Razorbills were found stranded along coasts, probably dead offshore and pushed back onto the beaches. Major dead cases were recorded from the North to the Center of the country (Tabarka-Monastir).

7 individuals from all 32 deaths were analyzed, 6 in Pasteur's laboratory and 1 individual in the laboratory of the veterinary research unit of the Ministry of Agriculture. All analyzes confirmed a negative contamination by avian influenza viruses.

In fact, mortality was probably caused by fatigue and lack of nutrition due to the strong storm in the Atlantic basin in mid-November which prevented several hundred individuals of Rasorbills from sheltering in the Mediterranean basin which simultaneously underwent the same unfavorable weather conditions. Additionally, exceptional high temperature in the southern Mediterranean basin further contributed to the complete exhaustion of a species known from cold countries.

The largest living population (35.1%) was observed in the northern basin of the country (Bizerte-Tabarka), while the largest number of corpses was recorded in the Gulf of Tunis estimated at 46.9% (fig 1 and 2). The map shows that the majority of observations were recorded in the North basin, the Gulf of Tunis and the Gulf of Hammamet, 82.02% against 17.98% in the Monastir-Sfax basin, the Gulf of Gabes and the Gulf of Boughrara (fig . 3 and 4).



RECOMMENDATIONS

In order to know the trends in the numbers and diversity of marine avifauna, including Razorbill populations, and the ecological factors that influence it, we recommend: Planning regular annual census campaigns along the Tunisian coast, Establish a multi-party unit responsible for annual censuses at sea, Involve all co-managers of marine protected areas and include other environmental NGOs in these types of missions Organize field training to strengthen the capacities of associations and improve their birdwatching skills,

