



# NATIONAL ALERTING AND MONITORING SYSTEM FOR CAPTURED, DEAD, INJURED AND SICK ANIMALS OF STRICTLY PROTECTED SPECIES - PROTOCOL FOR MARINE SPECIES

~ data for the period 2015 - 2017 ~

CAEN

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Figure 1. Associate institutions involved in the Protocol. CAEN - Croatian Agency for Environment and Nature; RCP - Rescue Centre of the Marine Educational Centre Pula; NPRD - National Protection and Rescue Directorate

**INTRODUCTION:** Croatian Agency for Environment and Nature (CAEN) runs National Alerting and Monitoring System for captured, dead, injured and sick animals of strictly protected species. Protocols are being developed within the System. System contributes to the monitoring of pressures and threats, to conservation status assessment and finally for mitigation measures development. One of the protocols established is the *Protocol for Alerting and Monitoring of dead, sick and injured strictly protected marine species (marine mammals, sea turtles and cartilaginous fish)*. It gathers several institutions which operate 24/7 via 112 phone service of National Protection and Rescue Directorate. Experts from the Faculty of Veterinary Medicine in Zagreb are handling injured or sick and post mortem of dead marine mammals. The coastal Veterinary First Aid Centres provide first aid to injured or sick sea turtles, while experts from the Croatian Veterinary Institute conduct the post mortem, if possible. The Rescue Centre of the Marine Educational Centre in Pula conducts sea turtle rehabilitation. All data collected (species, geographic location, condition of an animal, weight, sex, age, cause of death) are the part of CAEN internal database that will be included in the National CRO FAUNA Species Database.

	SPECIES	2015	2016	2017	TOTAL	*
ST	<i>Caretta caretta</i>	52	43	76	171	202
	<i>Dermochelys coriacea</i>	0	0	2	2	
	<i>Chelonia mydas</i>	1	0	0	1	
MM	<i>Thursiops truncatus</i>	35	34	99	168	208
	<i>Stenella coeruleoalba</i>	1	0	5	6	
	<i>Balaenoptera physalus</i>	1	0	2	3	
	<i>Physeter catodon</i>	0	3	0	3	
	<i>Ziphius cavirostris</i>	0	0	2	2	
	<i>Monachus monachus</i>	0	0	4	4	
	<i>Alopius vulpinus</i>	1	0	0	1	
CF	<i>Cetorhinus maximus</i>	0	1	1	2	4
	<i>Dasyatis centroura</i>	0	0	1	1	

Table 1. Number of determined individuals per species in the period 2015 - 2017 (ST - sea turtles; MM - marine mammals; CF - cartilaginous fishes); \*Total number of recorded individuals per group in the period 2015 - 2017, undetermined individuals are included.

In the period 2015 - 2017, total of 414 individuals of strictly protected marine species have been recorded (marine mammals - 50.24%; sea turtles - 48.79%; cartilaginous fishes - 0.97%). Loggerhead turtle (*Caretta caretta*) and Bottlenose dolphin (*Thursiops truncatus*) were the most recorded species.

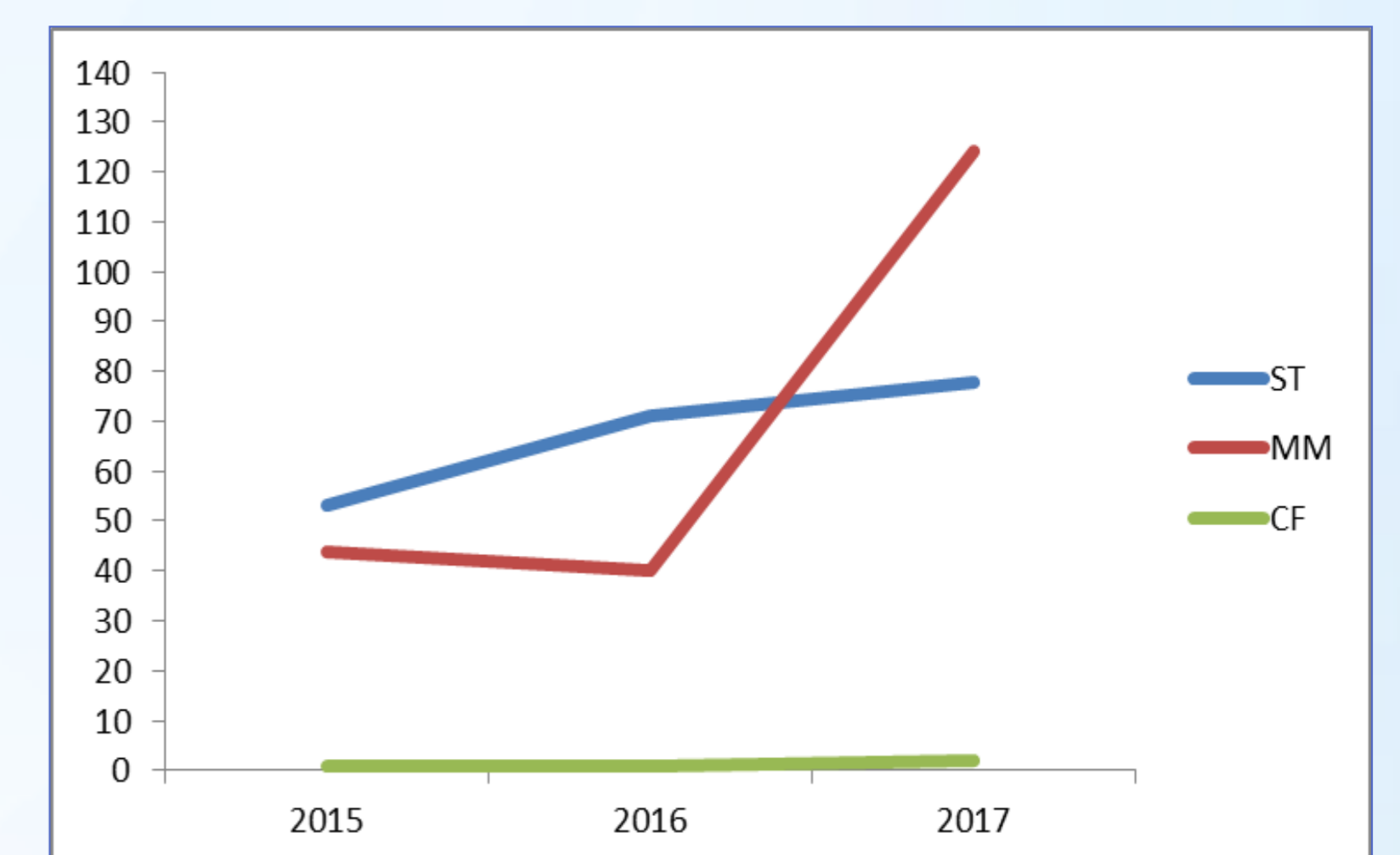


Figure 2. Number of recorded individuals per group in the period 2015 - 2017.

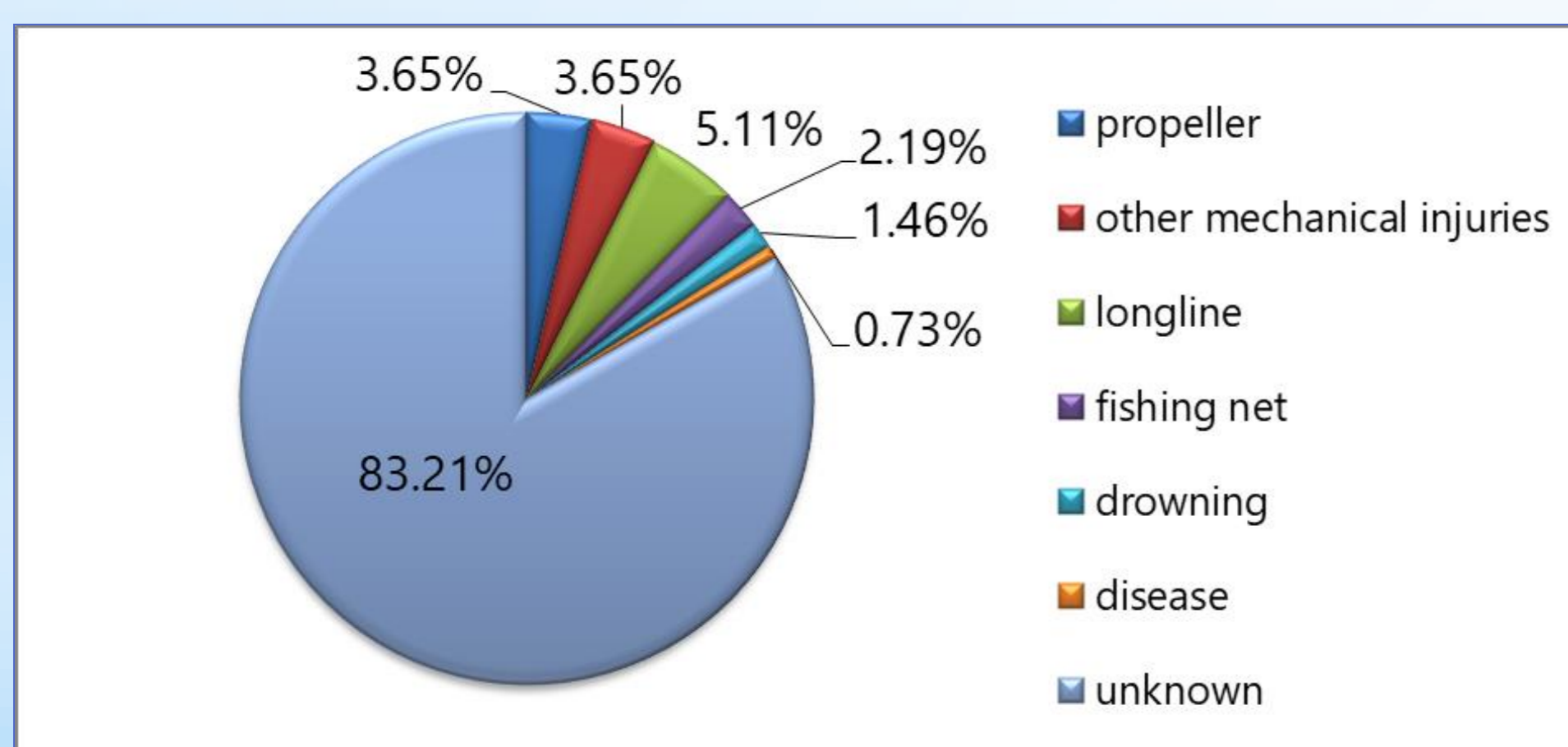


Figure 3. Percentage of mortality causes for sea turtles in the period 2015 - 2017.

One of the most important challenge is how to reduce 80% of unknown death causes.

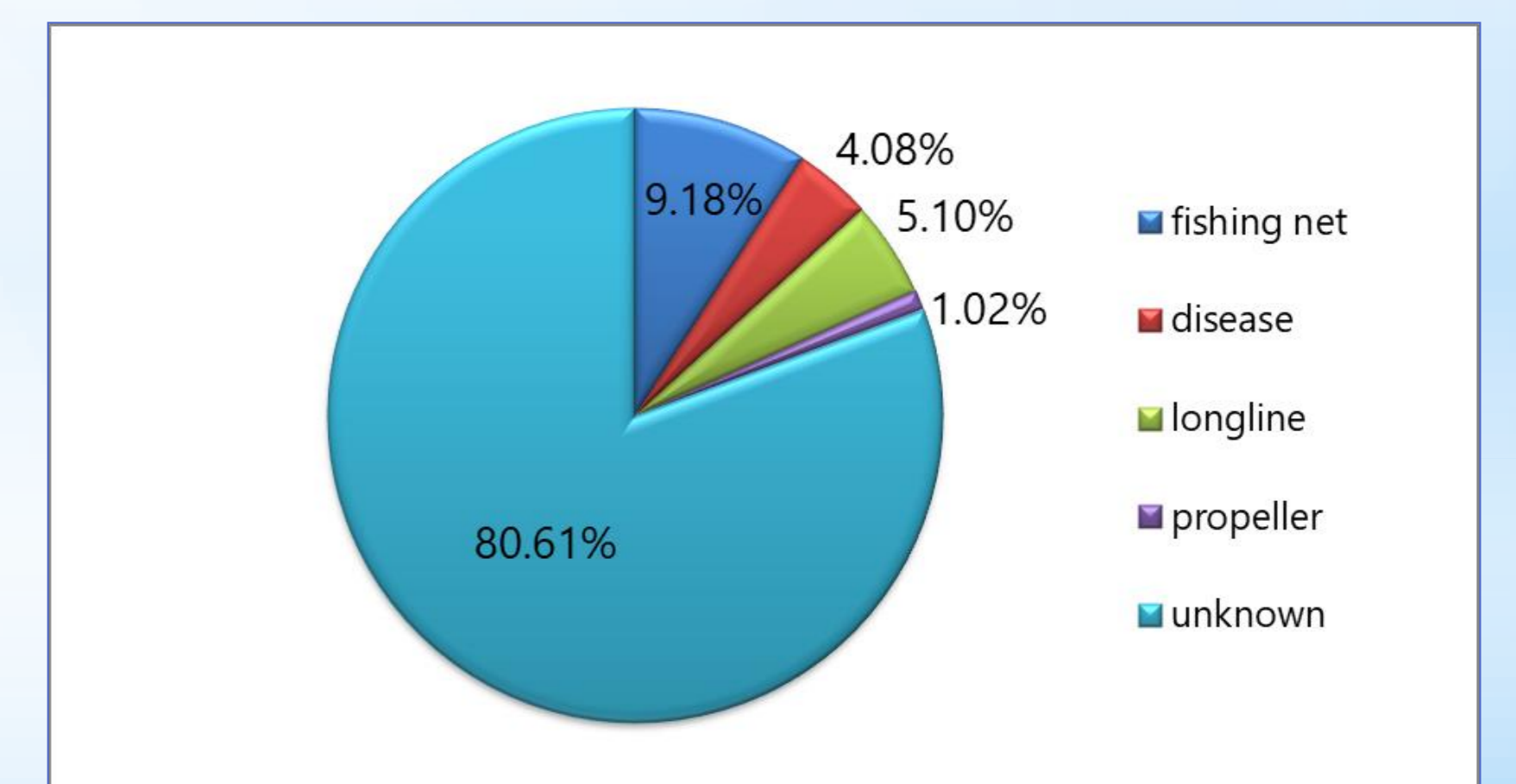


Figure 4. Percentage of mortality causes for marine mammals in the period 2015 - 2017.

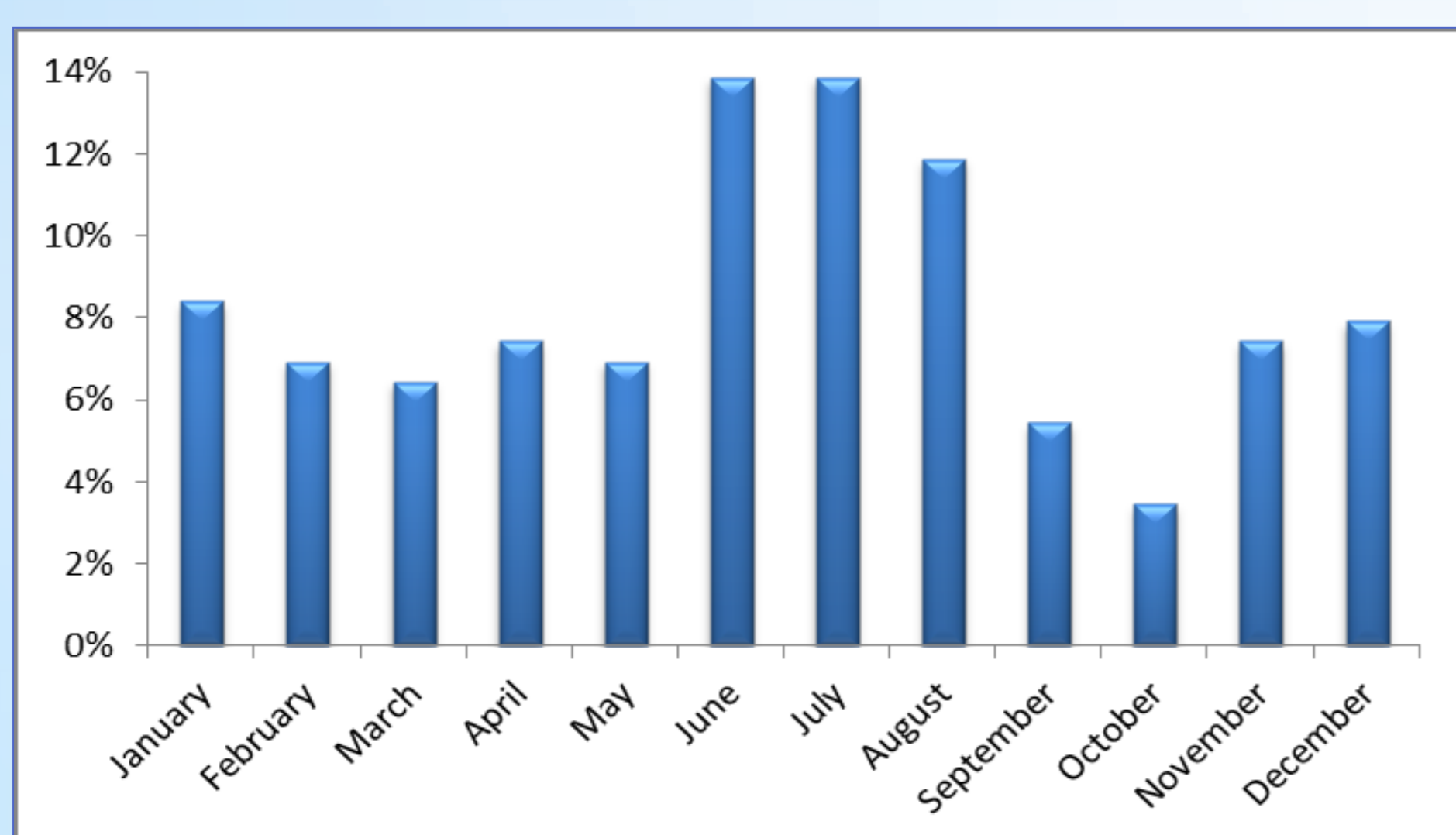


Figure 5. Percentage of recorded sea turtles per month in the period 2015 - 2017.

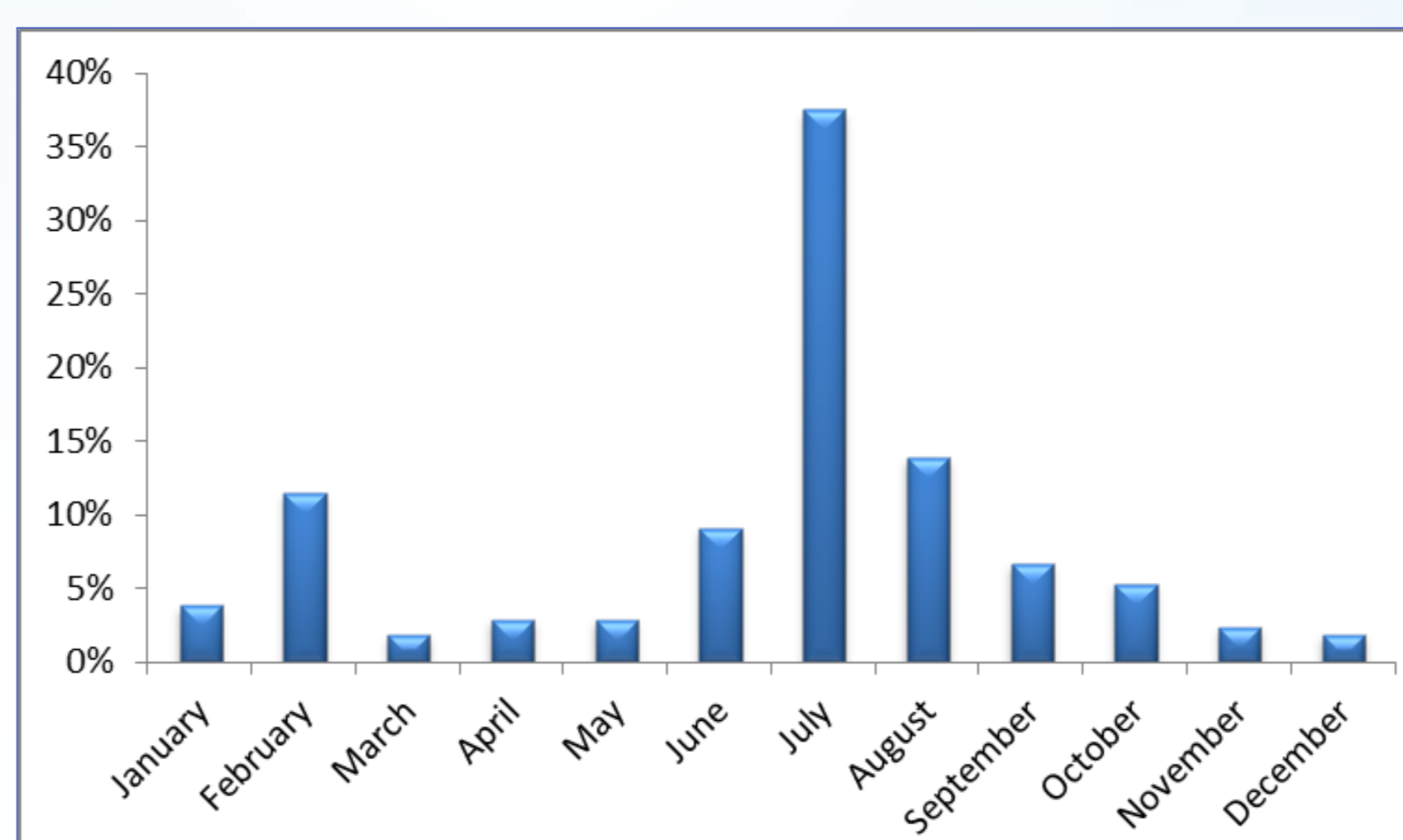


Figure 6. Percentage of recorded marine mammals per month in the period 2015 - 2017.

The highest number of recorded sea turtles and marine mammals were observed during the summer months.

58.97% of rehabilitated sea turtles through the Protocol services recovered successfully. The most common causes of injuries were drowning in fishing net and hypothermia but also various mechanical injuries (by boat propeller, collision with coastal rock etc.).

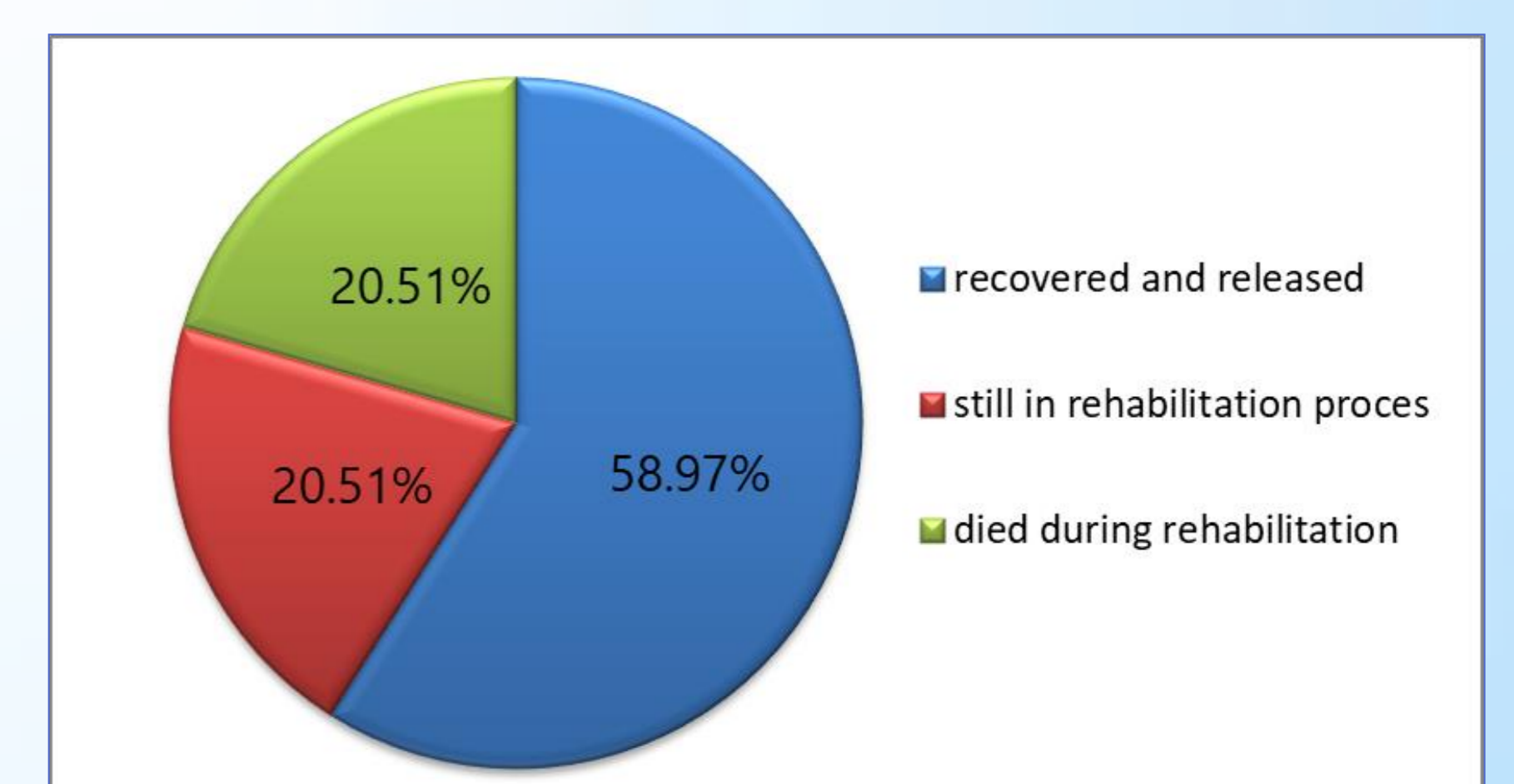


Figure 6. Results of sea turtles rehabilitation processes in the period 2015 - 2017.

**CONCLUSION:** According to known causes of death, anthropogenic effects are the primary cause of mortality. Higher number of records during the summer months can be connected with higher maritime traffic and presence of people due to tourism. A large percentage of records with unknown causes of death (marine mammals - 80.61%; sea turtles - 83.21%) is a consequence of high level carcass decomposition or inaccessibility of finding sites (remote islands or open water). Data gathered through the Protocol will serve for mitigation measures development as part of the Management Plans for strictly protected marine species. At the same time, Protocol enables better cooperation between involved institutions and contributes to public awareness on the marine species conservation importance.