STRENGTHENING THE HEALTH SURVEILLANCE OF MARINE MAMMALS IN THE WATERS OF METROPOLITAN FRANCE BY MONITORING STRANDINGS

S. Wund (1), E. Méheust (1), C. Dars (1), W. Dabin (1), F. Demaret (1), B. Guichard (2), T. Jauniaux (3), S. Labrut (4), J. Spitz (1), O. Van Canneyt (1), F. Caurant (1)

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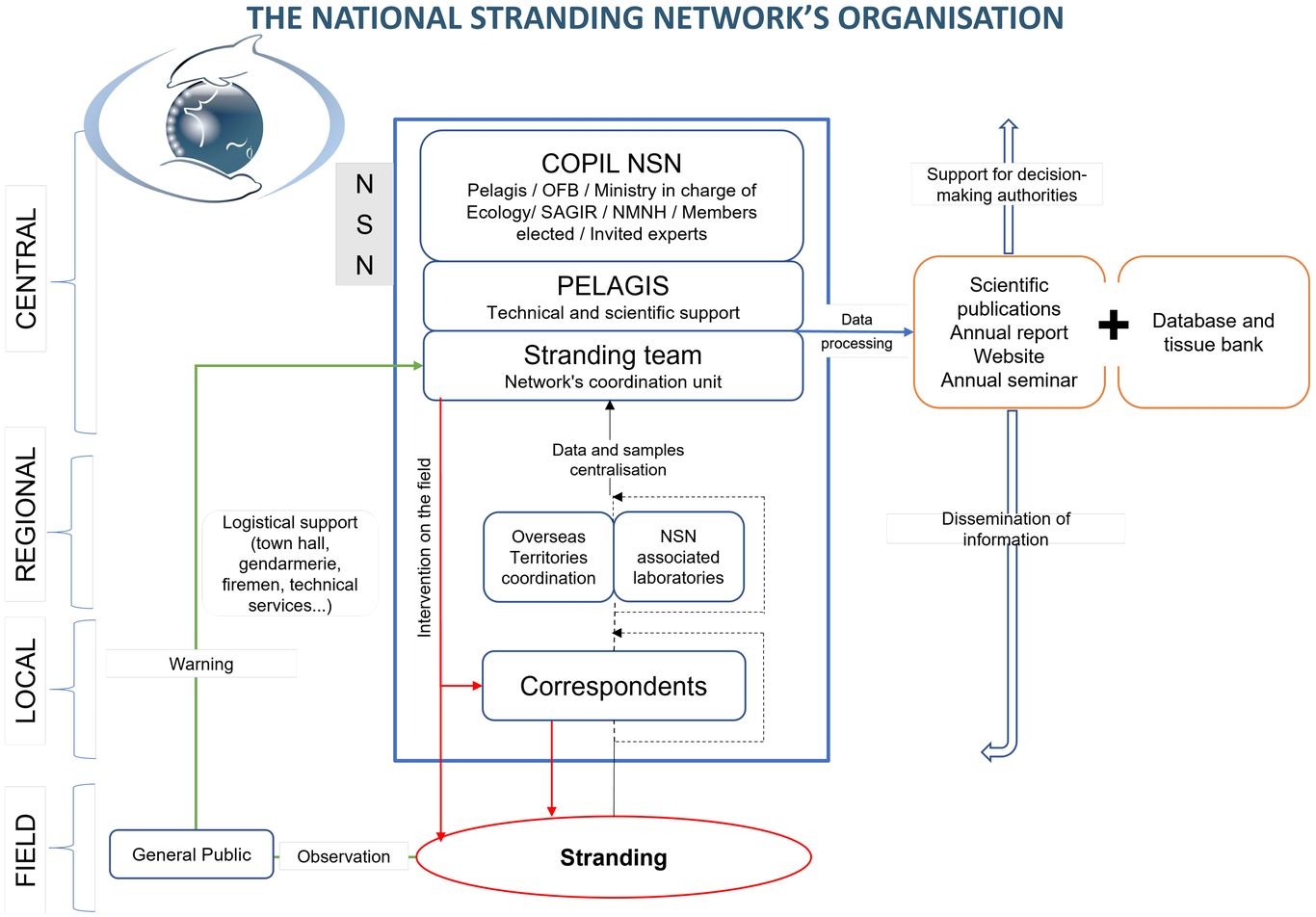
CONTEXT AND OBJECTIVES

The National Stranding Network (NSN) in France records all the marine mammal strandings, evaluates the main causes of mortality and studies the ecology of the species through the analysis of samples. Since 2016, the NSN faces to more than 2,000 strandings each year, representing more than 30 species, along 6000 km of coastline. The need to move towards monitoring the health status of populations and the numerous strandings requires to determine a strategy of epidemiological monitoring with the next objectives: (1) **Harmonise the methods** used to diagnose and **identify the causes of mortality** with greater accuracy; (2) Better **understand the main threats** to marine mammals; (3) Acquire the **ability to analyse data** through epidemiological models; (4) **Evaluate the circulation of pathogens** in these populations and their **impact** on animal and public health in case of zoonosis.

THE NATIONAL STRANDING NETWORK'S ORGANISATION



The NSN is structured in a similar way to an epidemiological surveillance network, with the different levels of organisation (field, local, regional and central).

FOUR HEALTH SURVEILLANCE MONITORING MODALITIES

GENERAL EVENT-BASED SURVEILLANCE (GES)

Concerned strandings :
All reported strandings

Objectives :
- Monitoring of the spatio-temporal distribution of strandings
- Highlight of unusual mortality events
- Acquisition of preliminary data on cause of death

PROGRAMMED SURVEILLANCE (PS)

Concerned strandings :
≈ 100 individuals
(according to the sampling plan)

Objectives :
- Acquisition of knowledge and data for epidemiological studies
- Obtaining exhaustive lesion tables and inventory of aetiologies and causes of death
- Inference of the obtained results to the monitored population

SPECIFIC EVENT-BASED SURVEILLANCE (SES)

Concerned strandings :
Rare species
Emblematic species
Phenomena of particular interest
Diseases of priority interest

Objectives :
Strengthening of surveillance on cases defined as priorities

SYNDROMIC SURVEILLANCE (SyS)

Concerned strandings :
Continuous collection, according to the indicators monitored

Objectives :
Early detection via algorithms of expected (or unexpected) phenomena and assessment of the impact (or lack of impact) of a phenomenon

DISCUSSION AND CONCLUSION

The French stranding network provides a case study: the conceptual framework will be confronted with reality, considering the objectives, structure, functioning and tools of the NSN, which will need to evolve further to better meet the requirements of the strategy. The high number of strandings, combined with logistical, financial and human resources, implies that the highest level of examinations cannot be implemented on every stranded marine mammal. However, a minimum of common routine analysis should be considered at the European scale in order to obtain more global and representative data of these highly mobile populations and to ensure a large-scale health surveillance. Finally, this strategy falls within the field of eco-epidemiology while integrating the "One Health" approach.

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1 PELAGIS UAR 3462 - LRUniv - CNRS — cnrs — La Rochelle Université — 2 OFB Office Français de la Biodiversité — 3 Liège université Médecine Vétérinaire — 4 LABOCEA Laboratoire public Conseil, Expertise et Analyse en Bretagne