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Introduction

- ▶ Zooplankton:
 - is **abundant**, world-wide spread and highly diverse;
 - ensures **vital ecosystem roles** in food webs, organic carbon flux and microbial communities;
 - represents **bio-indicators** of climate change.
- ▶ **Long time series** are crucial to understand long-term changes of the ecosystem.
- ▶ This study was conducted in the framework of the **STARECAPMED** program.

Materials and Method

- ▶ Sampling was carried out in the Calvi Bay (Corsica, France), NW of the Mediterranean Sea (**Fig. 1**). Sub-surface samples were collected bimonthly from 2004 to 2016, using a WP2 net (200 μ m) and preserved in formaldehyde.
- ▶ In addition, 10 variables (physical, biological and chemical) were registered.
- ▶ Zooplankton data were obtained through **digital imaging** and **automatic classification** (**Fig. 2**) using the **Zoo/PhytoImage** software and a **high resolution scanner** (**Fig. 3**).

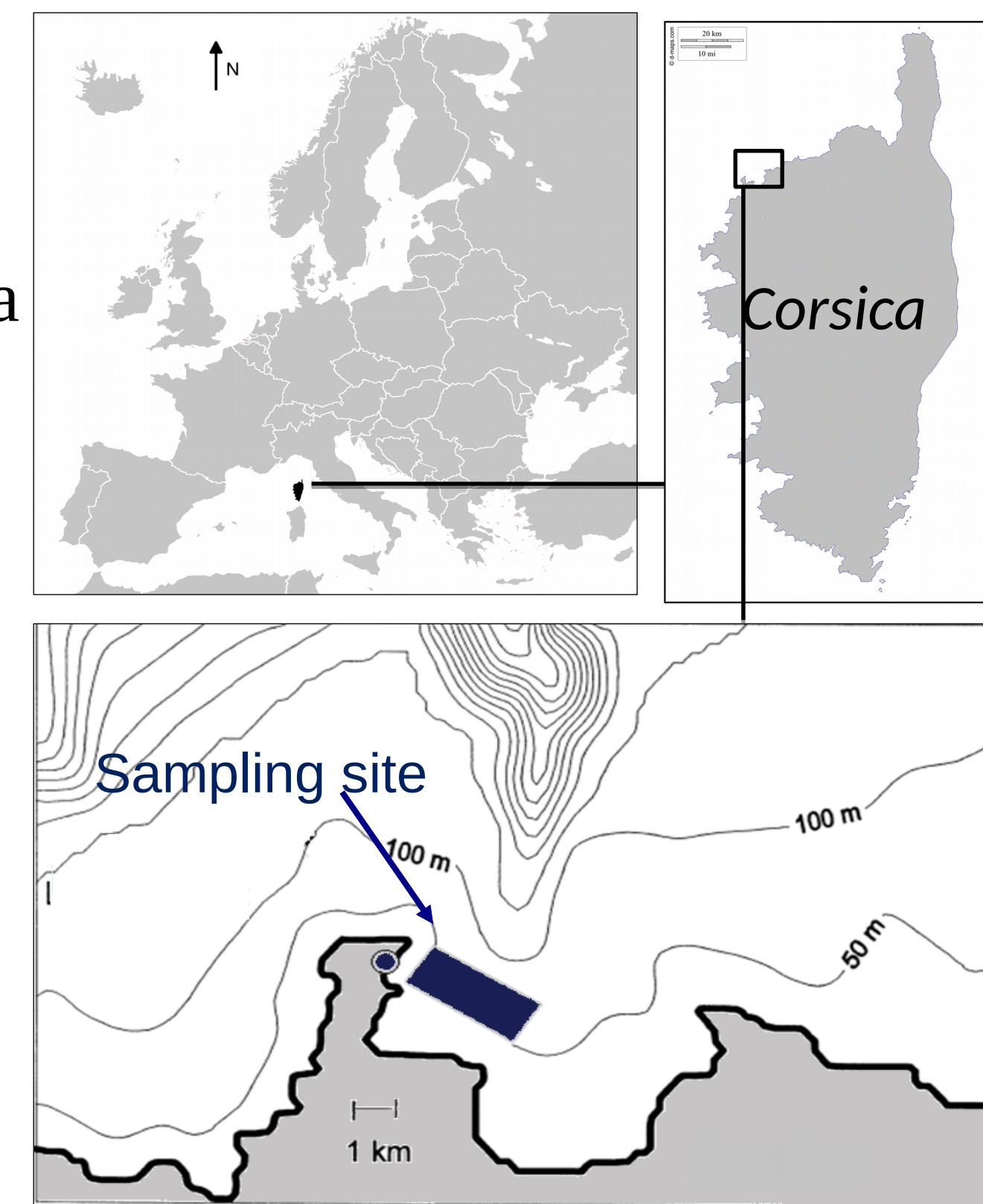


Fig. 1: Sampling area location

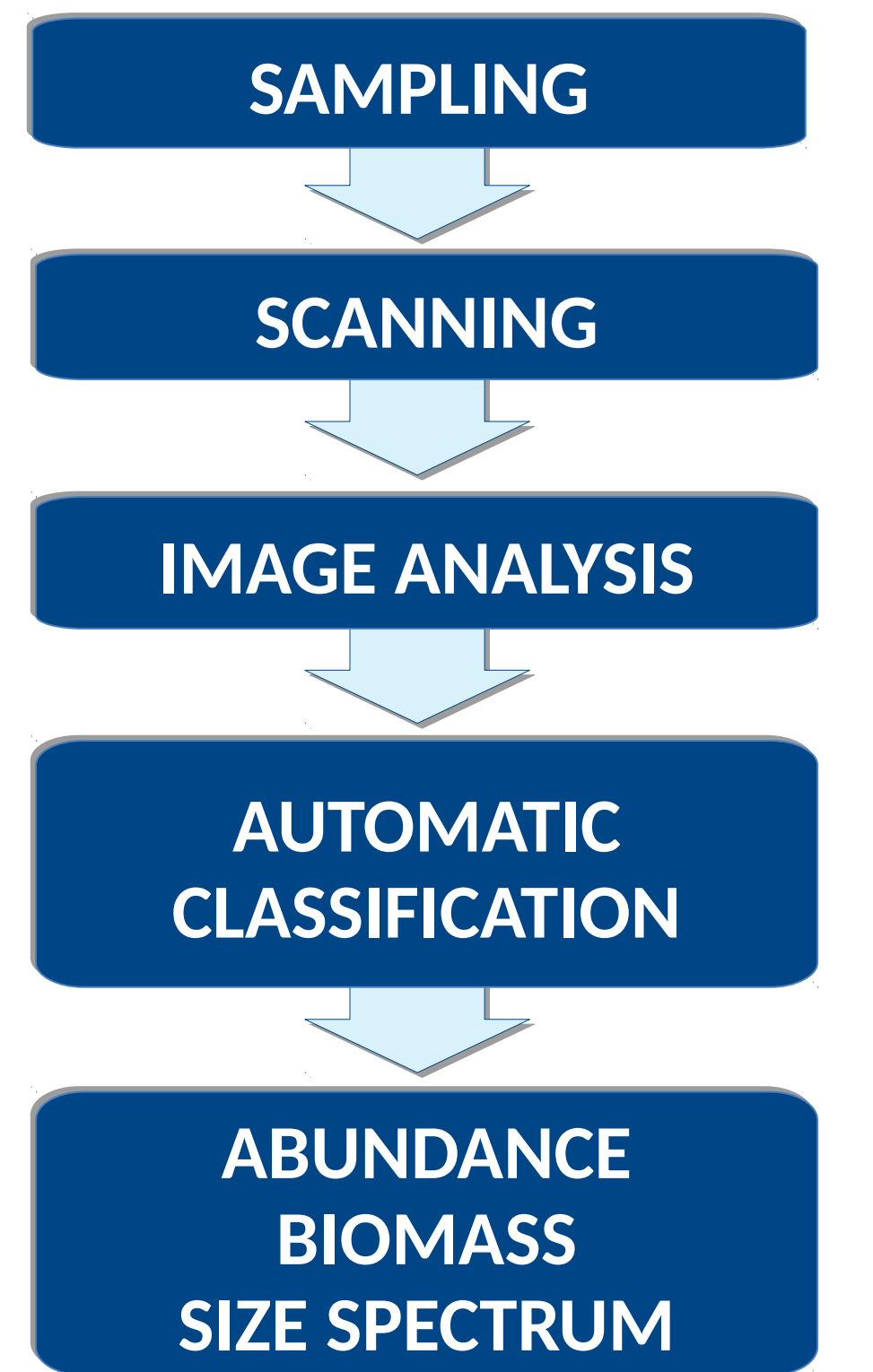


Fig. 2: Data acquisition workflow

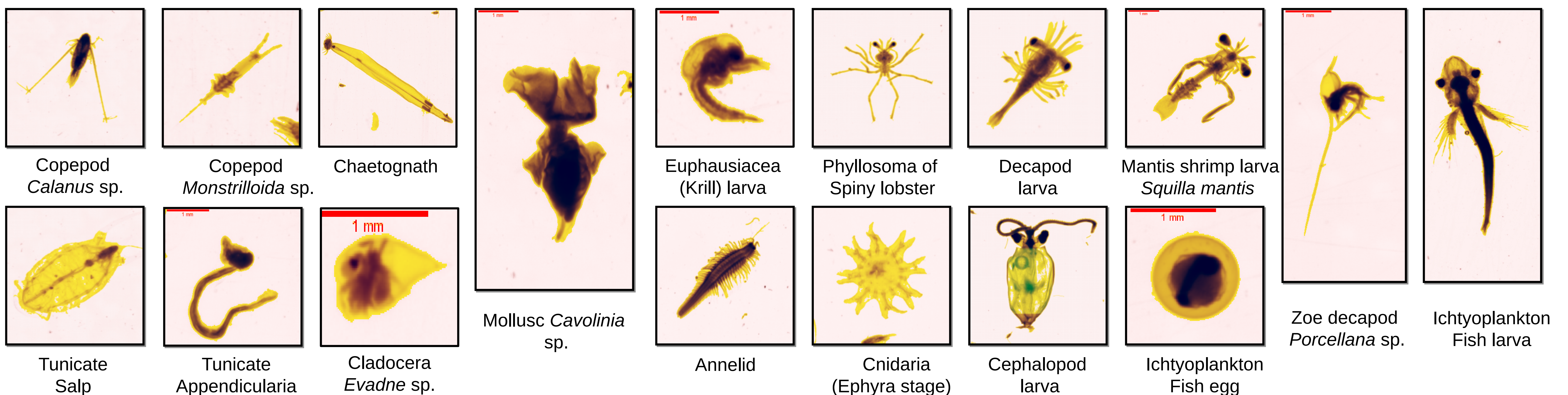


Fig. 3: Examples of acquired plankton images

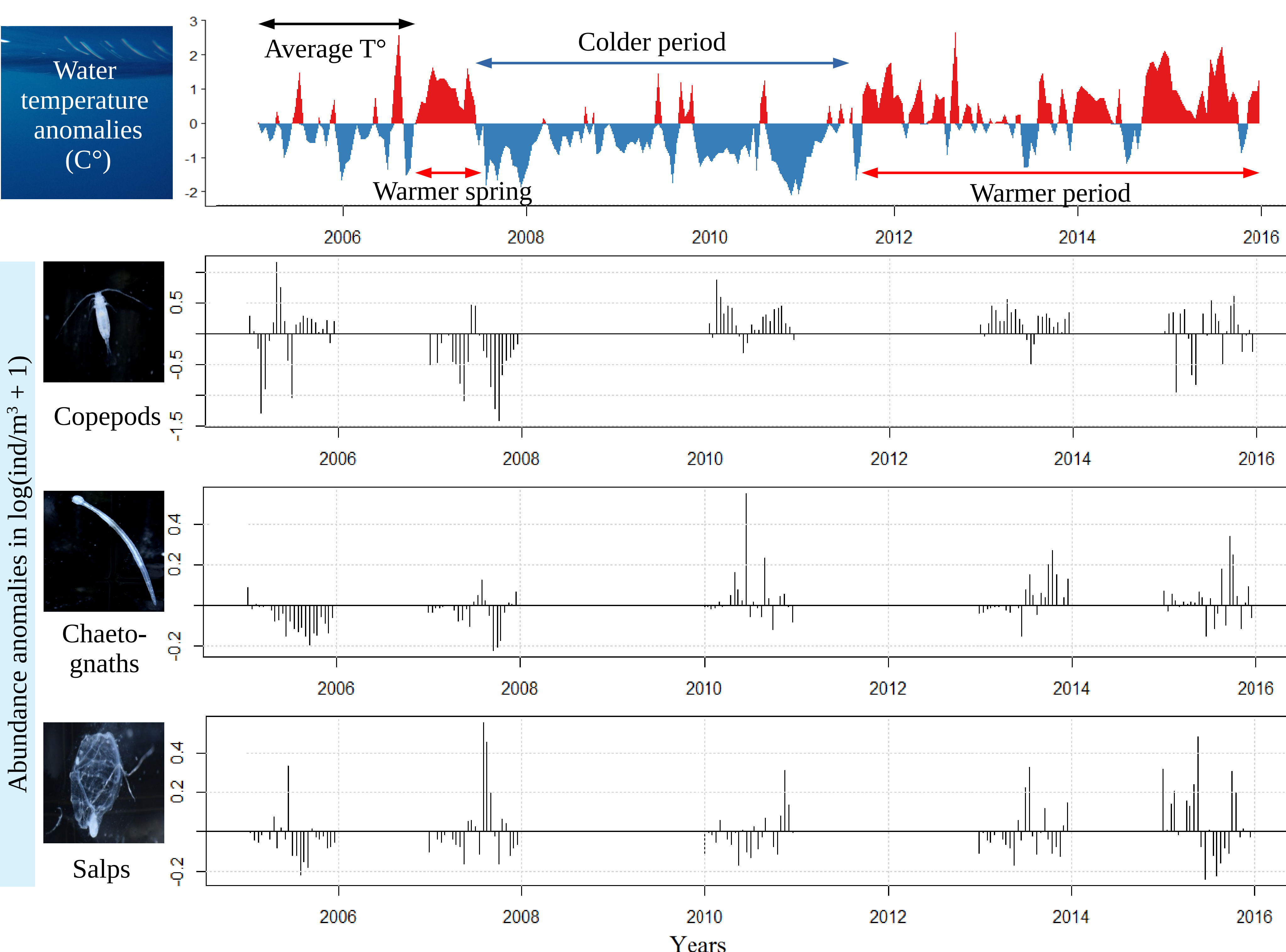


Fig. 4: Partial analysis of the plankton series (five years). Temporal evolution of water temperature and the abundance of a few taxonomical plankton groups. Interannual differences are already observable.

Preliminary results

- ▶ Strong interannual variations.
- ▶ Contrasting results regarding the relationship between water temperature and plankton abundances.
- ▶ Chaetognaths positive anomalies coincide with positive anomalies of copepods abundances.
- ▶ Salps show sporadic swarms and coincide with warmer water temperatures.

Perspectives

With the complete series (13 full years) we will be able to:

- ▶ identify seasonal or annual patterns and trends of the mesozooplankton community over the last 13 years,
- ▶ identify correlations with environmental variables,
- ▶ identify interactions between plankton components (cascade events),
- ▶ check whether the size spectra is shifting with climate changes .

Final results are still to come, we'll be back...