In Calvi Bay, C. nodosa meadows cover an area of 0.496 km² (Fig. 4). This value seems underestimated due to the difficulty in identifying side scan sonar images sparse meadows settled on sand.

The intermediate depth range (11-20 m) stores more than 60% of the total carbon stored by C. nodosa in Summer and more than 80% in Winter (Tab. 2). The greater storage capacity of this bathymetrical zone can be explained by its lower exposure to water movement, however, with enough light to sustain the plant growth. The nitrogen storage capacity follows the same pattern, with a lower amount of nitrogen stored in C. nodosa leaf biomass in Winter when leaves are exported to other marine systems by storms.

When compared with P. oceanica meadows and the other C. nodosa meadows stored in their leaves in Summer (Velimirov et al. 2016), the capacity of C. nodosa meadows to be a major carbon sink appears negligible. However, their capacity to act through the export of their leaves as a source of nitrogen in Winter for other nearby systems must cannot be denied.

## Methods

### LEAF SAMPLING, BIOMETRY AND ELEMENTAL CONTENTS

Shoot density and non-destructive sampling (delos Santos et al. 2016; Fig. 3a) were measured in Winter and Summer 2015 by cutting leaves (Fig. 3b) at several depths (5, 11, 15 and 23 m) at different locations within the bay (Calvi Beach, Alga Bay and Oscelluccia Bay). Leaf length and epiphyte biomass are measured in laboratory. Carbon and nitrogen contents are measured with an elemental analyser (Fig. 3d).

### Carbon and nitrogen stocks

The quantity of carbon and nitrogen stored in its leaves decreases with depth (Fig. 5), with a maximum storage at 5 m depth.

### Morphological features

C. nodosa shows the strongest seasonal variations at the lowest depths (Tab. 1) in Alga and Oscelluccia. The quantity of carbon and nitrogen stored in its leaves decreases with depth (Fig. 5), with a maximum storage at 5 m depth.

### C. nodosa roles

When compared with P. oceanica meadows and the other C. nodosa meadows stored in their leaves in Summer (Velimirov et al. 2016), the capacity of C. nodosa meadows to be a major carbon sink appears negligible. However, their capacity to act through the export of their leaves as a source of nitrogen in Winter for other nearby systems must cannot be denied.

### Around Corsica

C. nodosa meadow shoot densities in Calvi Bay are very low compared to other C. nodosa meadows like Utinio lagoon where a carbon storage capacity of 843.7 g C m⁻² per year was reported at 1 m depth (Agostini et al. 2003). Moreover, the surface they cover in lagoons and coastal areas appears to be largely underestimated according to the last mapping campaign made around Corsica in 2015.

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**References:**


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