

Three years of results from a mooring over a *Posidonia Oceanica* seagrass meadow (Corsica, France)

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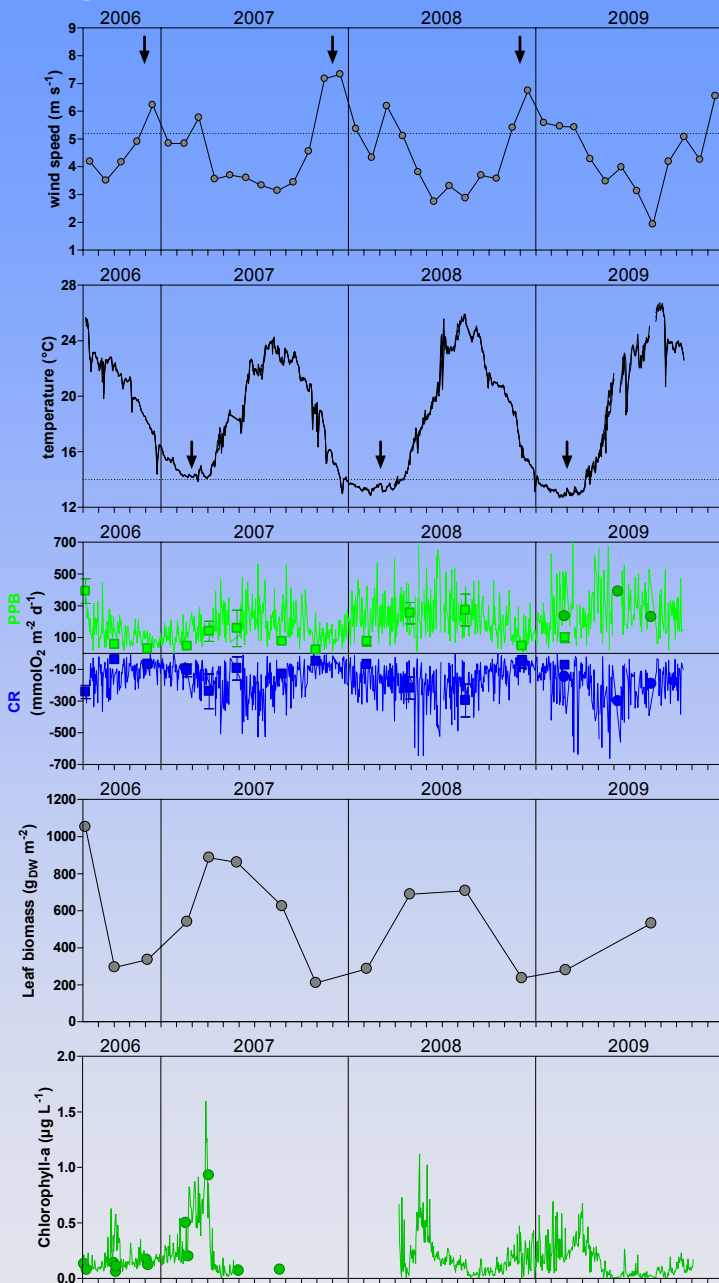
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Since August 2006, a shallow mooring (10 m depth) has been maintained over a *Posidonia Oceanica* seagrass meadow for hourly measurements of oxygen (O₂), seawater temperature at 3 depths (10m, 7m and 4m) with optodes and Chlorophyll-a in subsurface (4m) with a fluorometer.

Based on temporal changes of the integrated [O₂] we computed community respiration (CR), gross primary production (GPP) and net community production (NCP). The seasonal variations of GPP (and CR) followed those of the *Posidonia* meadow biomass. Maximum Chlorophyll-a values do not coincide with maximum GPP values suggesting in this ecosystem the dominance of benthic GPP.

GPP and CR estimated from the mass balance of O₂ measured with the optodes, agreed well with the discrete GPP and CR measurements from benthic O₂ incubations with chambers (in particular the larger chambers (10 L, circles) compared to the smaller chambers (5 L, squares)).

The net annual GPP and net community production (NCP) values were lower for the 2006/2007 period than the other two periods (2007/2008, 2008/2009). The winter of 2006/2007 was milder than the other two winters, with higher water temperatures and lower wind speeds. This probably lead to a lower winter-time replenishment of inorganic nutrients that probably lead to lower GPP in 2006/2007. Also the lower winds speeds and lower storm evens in 2006/2007 lead to the accumulation of detritus (litter of dead *Posidonia* leaves) within the meadow (under 'normal' conditions, litter is exported during fall and winter from the meadow to depth). The accumulated litter might have fuelled CR throughout the 2006/2007 period contributing to lower NCP values (in addition to lower GPP values).



	mol O ₂ m ⁻² yr ⁻¹	CR	GPP	NCP
Nov. 2006/ Nov. 2007		-58	62	4
Nov. 2007/ Nov. 2008		-65	90	25
Nov. 2008/ Nov. 2009		-67	96	29