“Indicators of seagrass communities in Campeche coast in Gulf of Mexico”

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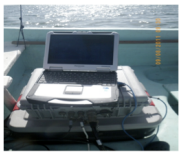
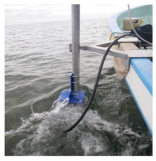
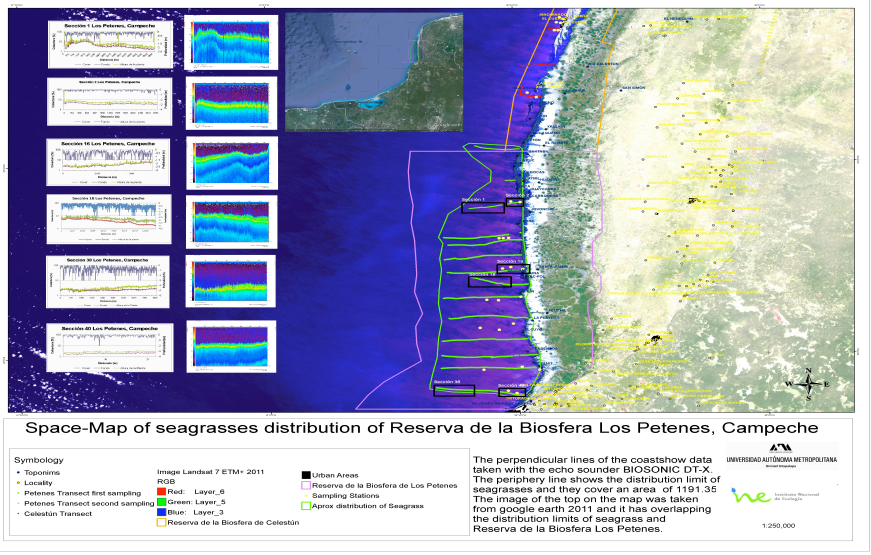
Introduction. The protected natural area ”Los Petenes", located in the coast of Campeche and Yucatan in South East in the Gulf of Mexico, develops one of the most important wetlands and Submerged Aquatic Vegetation (SAV) in the adjacent coastal shelf. The SAV is formed of monoespecific and mixed populations of *Thalassia testudinum, Syringodium filiforme, Halodule wrightii* and a lot of especies of algae. Despite its ecological importance, had not been conducted studies to assess the extention and abundance of seagrass populations in the Campeche Sonda.

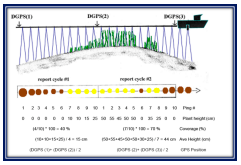
Goal. In this study we used a Biosonic Hydroacust Echo Sounder to register the extention, coverage, height and deep of seagrasses bed and analyze the main nutrients in water and sediments, determine % of carbon and organic matter, sulfate reduceing bacteria in the sediments, macrobenthic fauna and type of sediments.



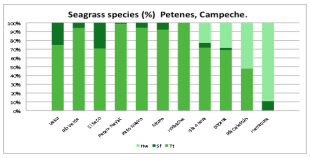
Field sample with Biosonic Hydroacust Echo Sounder

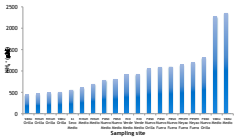


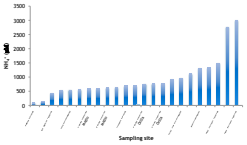


Campeche Coast Gulf of Mexico	Plant height range of seagrasses (cm)	Deep (m)	% Average cover	Average height (cm)	average minimum height(cm)	Average maximum height (cm)	% dcf Cover	Extention (km²)
Los Petenes	10 - 40	1 - 2	68%					
Natural protected Area	40 - 180	2 - 5.5		39.9	9	180	60.2	763.435
	0.5 - 30	5.5 - 6						

Seagrass cover in Campeche Coast Petenes is approximately 763.435 km2

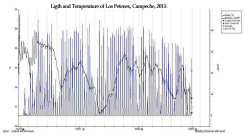


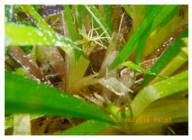

Porewater NH_4^+ concentration (> 10 cm) in seagrass communities in the Gulf of México

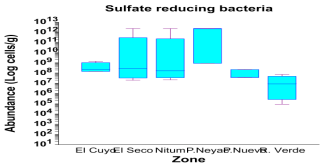

Porewater NH_4^+ concentration (< 10 cm) in seagrass communities in the Gulf of México

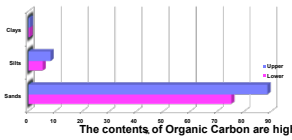
Average nutrient concentrations reported in the literature on seagrass communities.

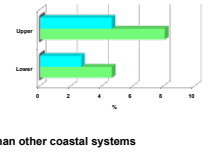
Nutrient	Water column µM	Interstitial water µM	Reference
NH_4^+	3.1	86	Hemminga y Duarte, 1998
NO_3^-	2.7	12	Hemminga y Duarte, 1998
PO_4^{3-}	0.35	3.4	Hemminga y Duarte, 1998
NH_4^+	1.7	60	Hemminga, 1998
PO_4^{3-}	0.35	6.5	Hemminga, 1998
NH_4^+	Baja a variable	1-1000	Romero et al. 2007
NO_3^-	0.0-5.0	Escaso	Romero et al. 2007
PO_4^{3-}	0.0-0.4	Hasta 20.0	Romero et al. 2007
NH_4^+	11.2	1274.12	This study
PO_4^{3-}	0.62	19.31.	This study



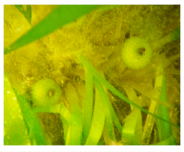


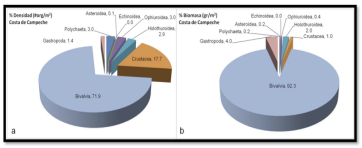


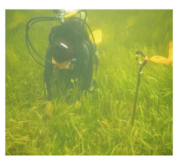




The contents of Organic Carbon are higher than other coastal systems







Class Bivalvia density is 71.9%, Crustacea 17.7%, Polychaeta and Ophiuroidea with 3% to 2.9% Holothuridae, Asteroidea represents just 0.1%, Echinoidea was not performed for this locality

Ammonium levels registered on this study are relatively higher tan those reported in the literature (see annex table), however within the normal range according to Romero et al (2007). However it is important to underscore that most studies have been performed in temperate environments, where dominant species *Cymodoces serrulata, Zoostera marina, Z. capricorni, Enhaulus acoroides*) are different that the ones present on this study (*Thalassia testudinum, Syringodium filiforme*) (Touchette y Burkholder, 2000).