

**Sélection de sites adéquats pour  
entreprendre la restauration de la  
mangrove rouge  
(*Rhizophora mangle* )  
en utilisant un SIG**



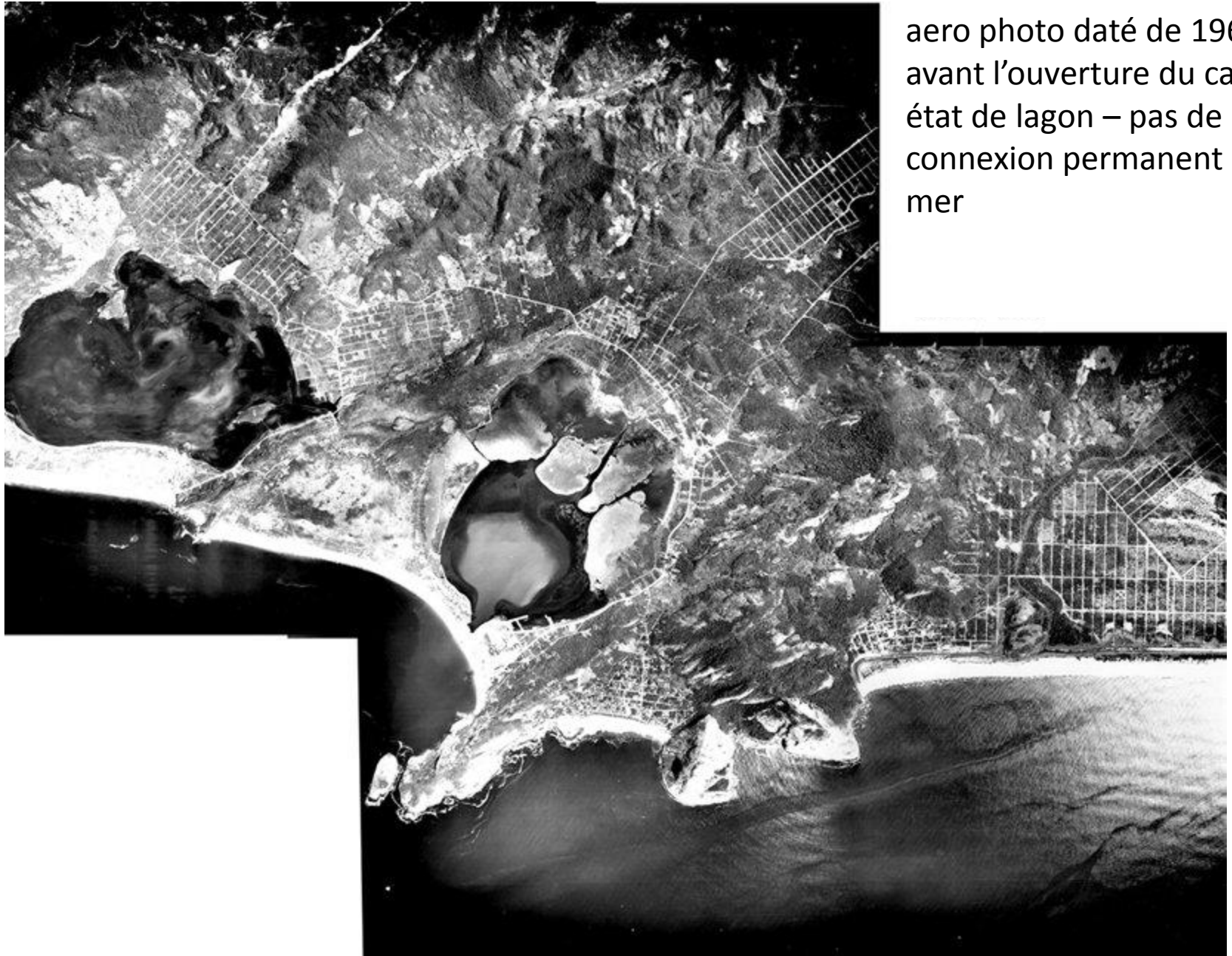
*Rhizophora mangle* -



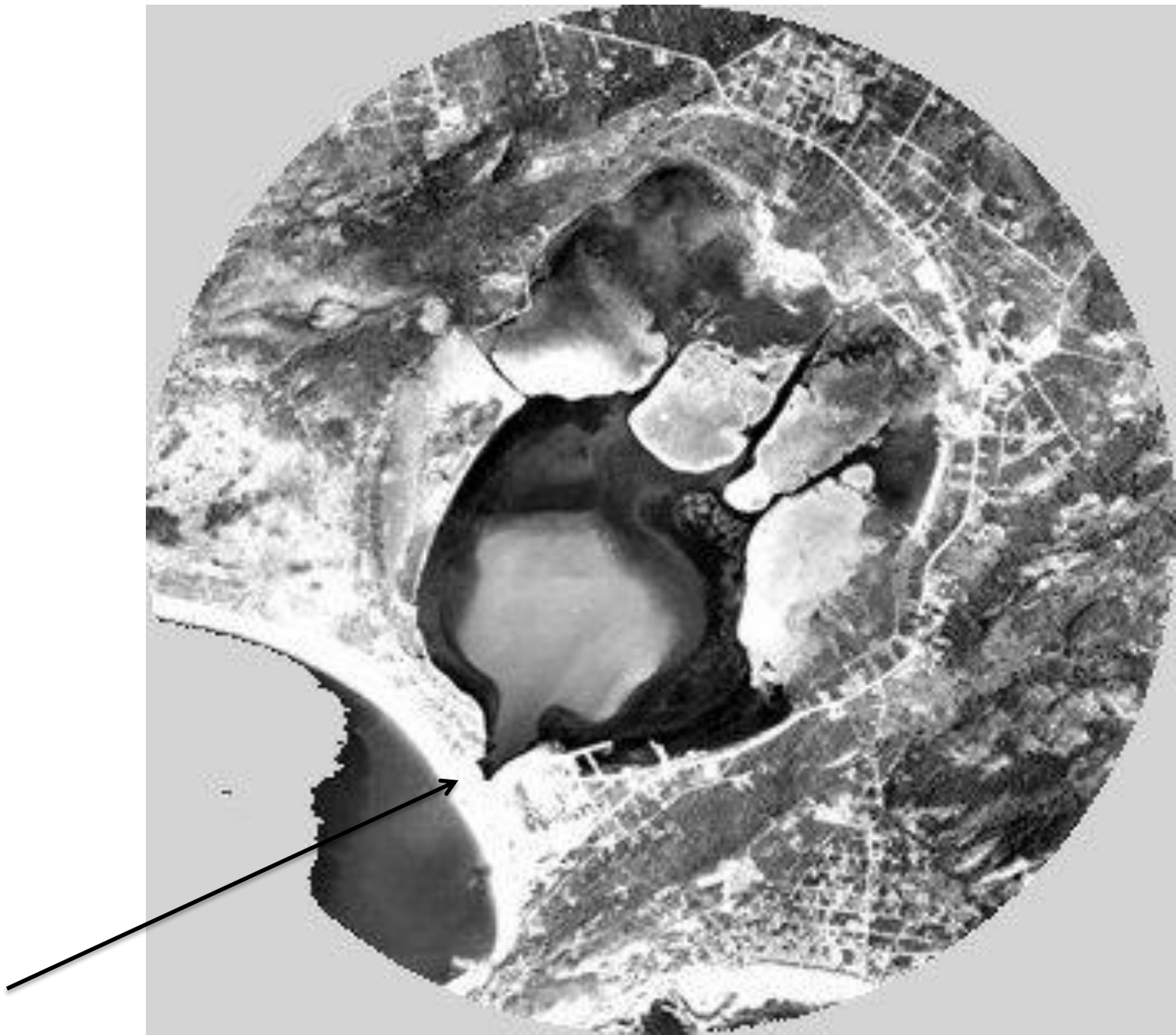


Zone côtière, avec mangroves





aero photo daté de 1964  
avant l'ouverture du canal –  
état de lagon – pas de  
connexion permanent avec la  
mer







**Figure 1 – Intertidal zone in black**

# Les paramètres plus importantes pour définir l'habitat idéal de la mangrove

**Table 1** – Environmental parameter ranges typical of red mangrove sites.

Parameters	Range	References
Taille du sédiment	< 0.125mm	Carmo, 1998; Cintrón and Schaeffer-Novelli, 1983; Louro et al.; 1994; Chen and Twilley, 1998.
Contenu de matière organique	> 10%	Carmo, 1998; Cintrón and Schaeffer-Novelli, 1983; Louro et al. 1994; Twilley et al. 1995; Tomlinson, 1986.
Salinité de l'eau du mer interstitiel	>25 < 55 psu	Soto and Jiménez, 1982; Cintrón and Schaeffer-Novelli, 1983; Schaeffer-Novelli, 1995; Chen and Twilley, 1998; McKee, 1993b apud: Chen and Twilley, 1998.



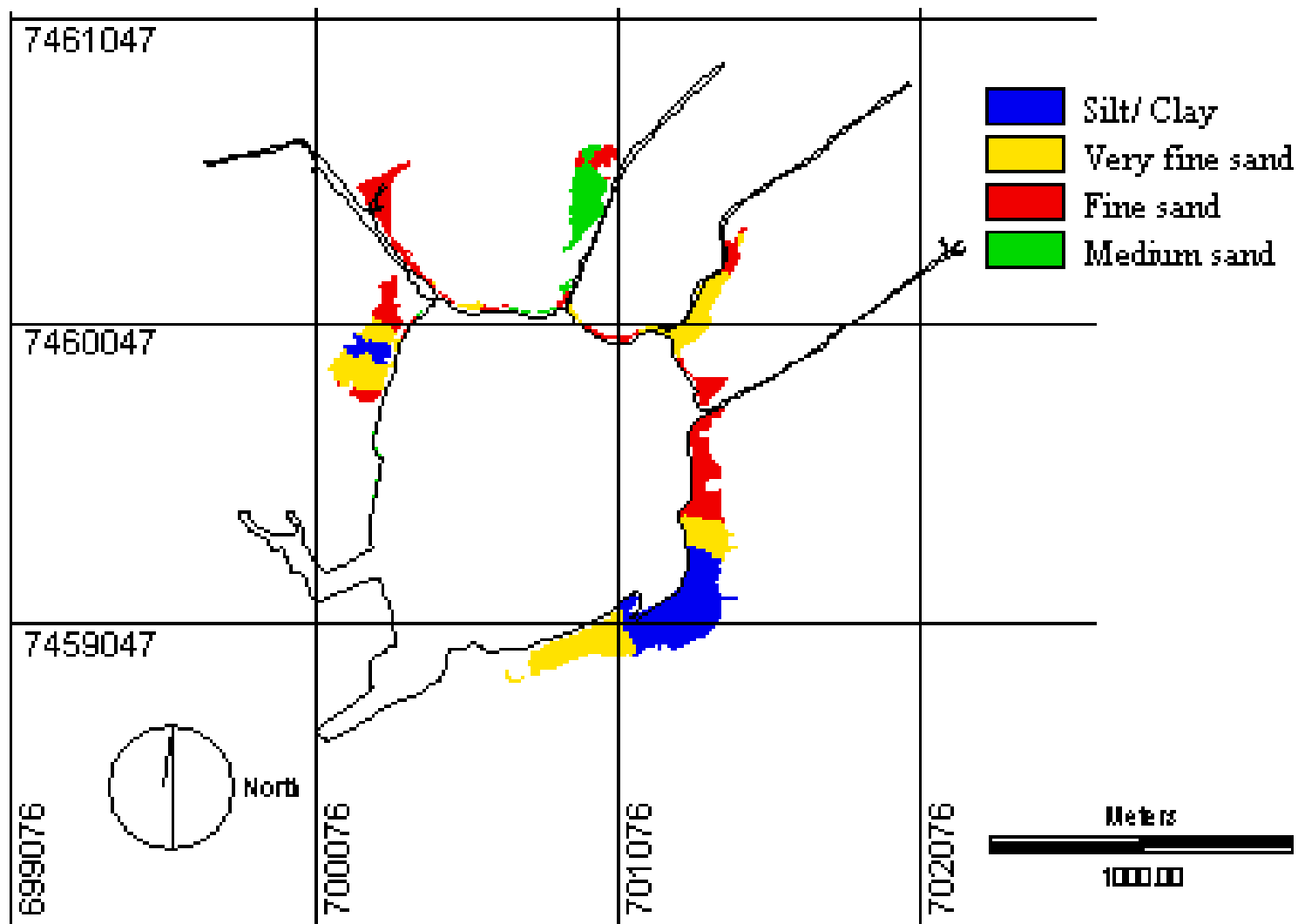
**Table 2 - Ranges for environmental variables found in the study area and reclassification criteria used.**

<b>Particle size (<math>\mu\text{m}</math>)</b>	<b>Aggregate name (Wentworth Classification)</b>	<b>Organic mater Content (%)</b>	<b>Salinity (PSU)</b>
3.90 – 62.5	* Silt/Clay	1 – 5	1- 15
62.5 – 125	* Very fine sand	* 5 – 10	* 15 – 25
125 – 250	Fine sand	* 10 – 15	* 25 – 35
250 – 500	Medium sand	* 15 – 20	35 – 45
		* 20 – 25	45 – 55
		* 25 – 30	55 – 66



**Figure 1 – Intertidal zone in black**

# Sediment classes

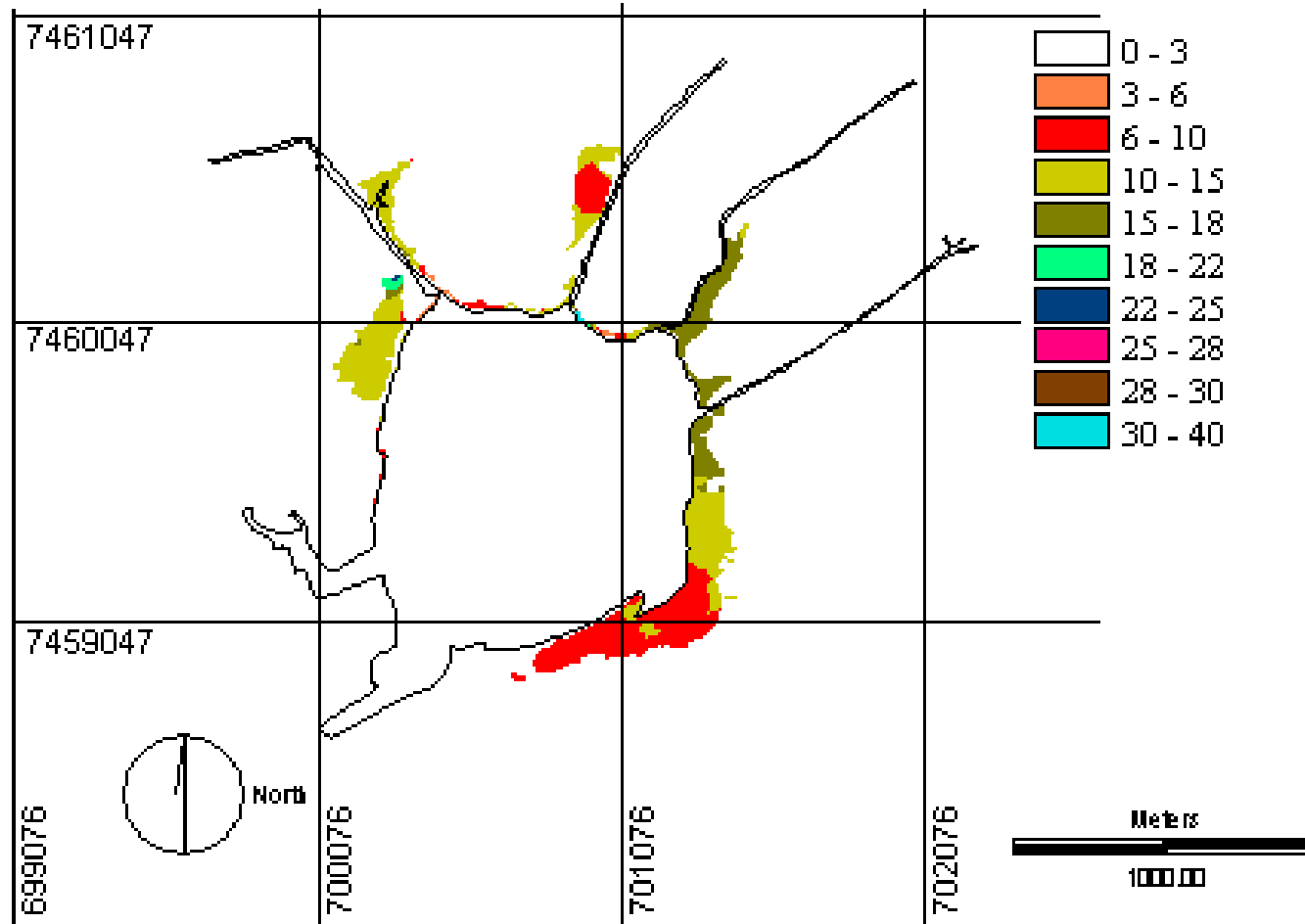






**Figure 1 – Intertidal zone in black**

# Soil organic matter content (%)





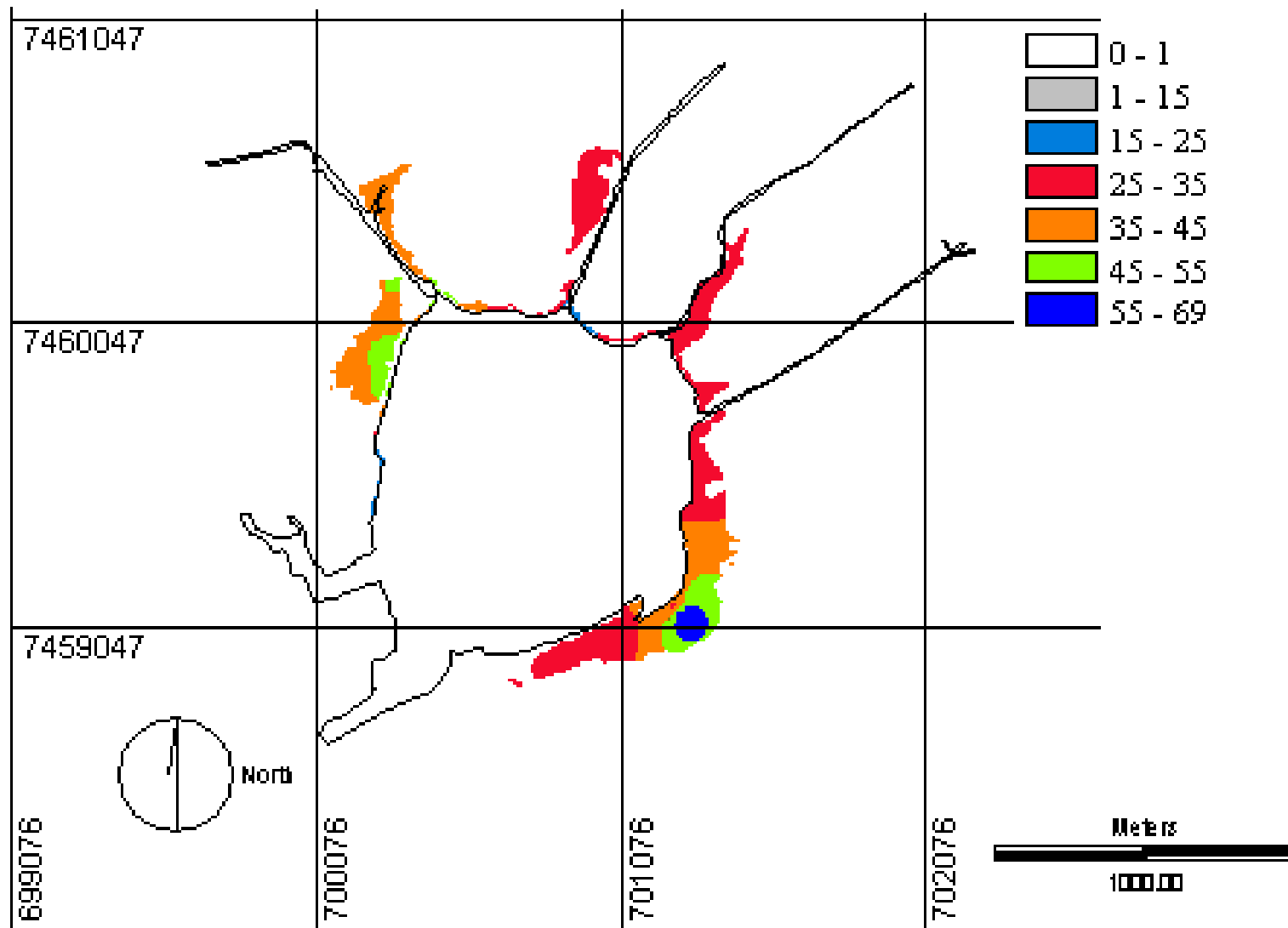
**Figure 1 – Intertidal zone in black**



**Table 1** – Environmental parameter ranges typical of red mangrove sites.

<b>Parameters</b>	<b>Range</b>	<b>Refererences</b>
SEDIMENT PARTICLE SIZE	< 0.125mm	Carmo, 1998; Cintrón and Schaeffer-Novelli, 1983; Louro et al.; 1994; Chen and Twilley, 1998.
SOIL ORGANIC MATTER CONTENT	> 10%	Carmo, 1998; Cintrón and Schaeffer-Novelli, 1983; Louro et al. 1994; Twilley et al. 1995; Tomlinson, 1986.
INTERSTITIAL WATER SALINITY	>25 < 55 psu	Soto and Jiménez, 1982; Cintrón and Schaeffer-Novelli, 1983; Schaeffer-Novelli, 1995; Chen and Twilley, 1998; McKee, 1993b apud: Chen and Twilley, 1998.

# Interstitial water salinity (psu)



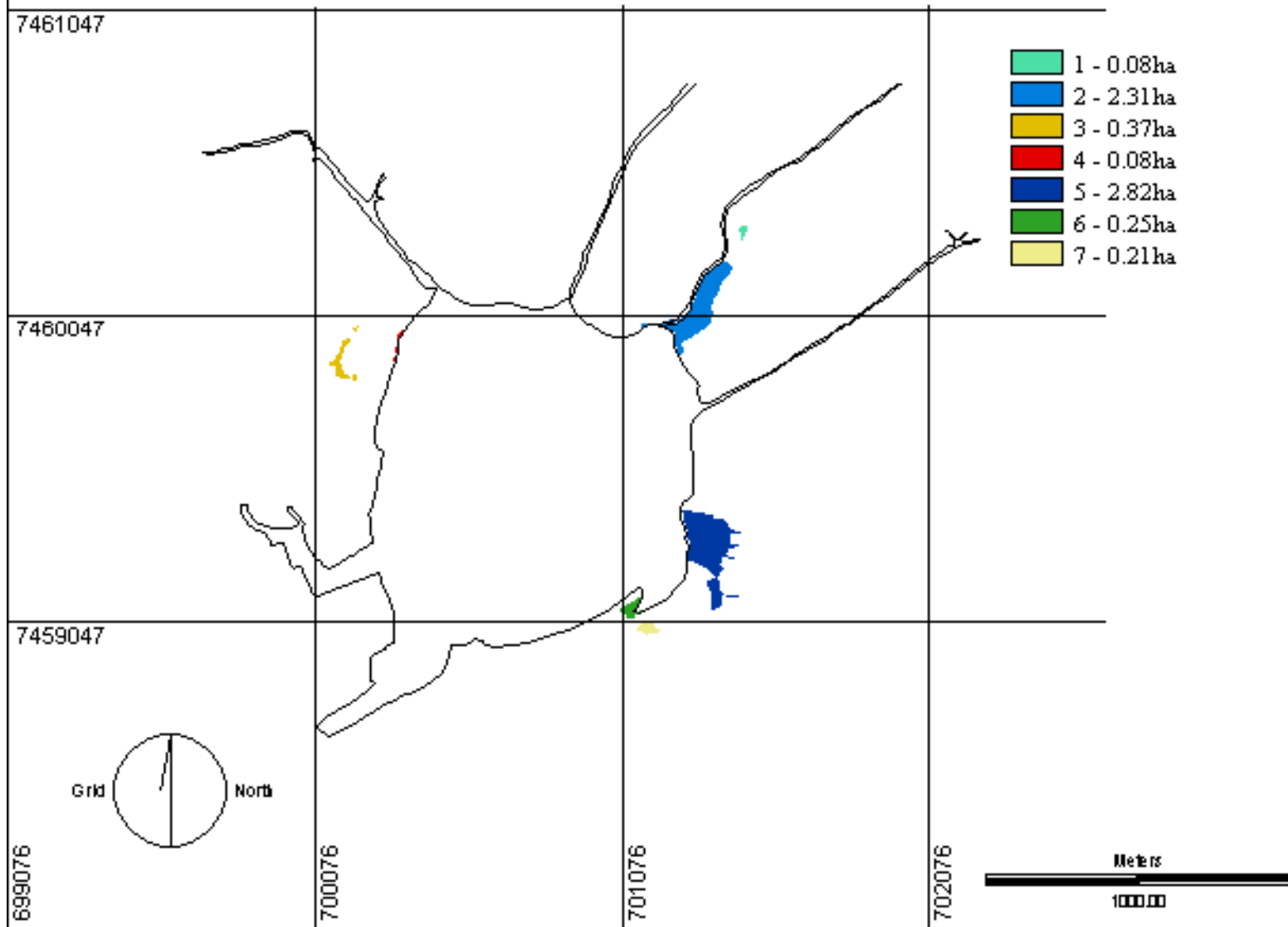
*Suitable areas =*

*( Suitable\_particle\_Size \*  
Suitable\_Organic \*  
Suitable\_Salinity) \*  
(Intertidal\_Areas \*  
No\_Mangroves)*

Contraintes = zones ou il-y-a déjà de mangroves, e zones dehors l'action ou zone de la marée



# Suitable areas for Red mangrove (ha)



**Table 3 - Areas suitable for red mangrove planting and number of propagules and approximate costs.**

<b>Classes</b>	<b>Area ID</b>	<b>Size (Ha)</b>	<b>Propagules needed (spacing 2x2m)</b>	<b>Planting cost (US\$)</b>
Large (> 0.4ha)	5	2.82	7,050	5,929.91
	2	2.31	5,775	4,857.48
Medium (0.20 – 0.4ha)	3	0.37	925	778.04
	6	0.25	625	525.70
	7	0.21	525	441.59
Small (<0.08 – 0.20ha)	1	0.08	200	168.22
	4	0.08	200	168.22
<b>Total</b>	<b>7</b>	<b>6.12</b>	<b>15.300</b>	<b>12,869.16</b>