**Appendix S7.** Habitat variables used in the model of the occupancy (*ψ*) and detection probability (p) of Amazonian manatee.

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| --- | --- | --- | --- | --- |
| Parameter | Variable | Type | Abbreviation | Description |
| Occupancy (*ψ*) | Habitat | Categorical | *Habitat* | Defined as *várzea* or *ria* lake. |
| Distance to the community (km) | Continuous | *DistCom* | Distances were measured along water bodies based on satellite images *Landsat 8* OLI/TIRS using Quantum Gis 2.2 software. |
| Distance to the Protection zone (km) | Continuous | *DistProt* | Distances were measured along water bodies based on satellite images *Landsat 8* OLI/TIRS using Quantum Gis 2.2 software. |
| Detection (*ρ*) | Water depth (m) | Continuous | *Depth* | Average depth measured with a depth finder in four different points. |
| Water transparency (cm) | Continuous | *Transp* | Average disappearance depth of the Secchi disc in four spaced points. |
| Macrophyte cover (%) | Continuous | *Cover* | Based on visual assessment over 100m, in four spaced points. |
| Perimeter of sample site (km) | Continuous | *Peri* | Perimeter of the sampling site calculated using GPS tracks of boat route. |
| Macrophyte composition | Categorical | *Comp* | Based on visual inspection over 100m, in four spaced points.\* |
| Weather condition | Categorical | *Clim* | Description of cloud cover.\*\* |
| River state | Categorical | *River* | Beaufort Scale used to describe river and wind state.\*\*\* |

\*0=Absent; 1=Only *Paspalum repens*; 2=*Paspalum repens* and other species; 3=Mix of species without *Paspalum repens*. \*\*Sun/Clear=0; Cloudy/Overcast=1. \*\*\*0=Water surface smooth and mirror-like; 1=Scaly ripples, no foam crests; 2=Small waves, no foam crest.