

## Supplement S2: Steps in statistical model selection

We used the StepAIC function from the R package MASS (Ripley et al. 2013), which combines forward and backward model selection. Starting from an intercept-only model the model was expanded with explanatory variables, and their two-, and three-way interactions, until the model with the lowest Akaike Information Criterion (AIC) was found, which was considered the best fit. The steps taken are reported here.

**Table S2. Probability of occurrence of *Carcharhinus perezii***

<b>Full model:</b>	Probability of occurrence = Intercept + Location + Habitat type + Management zone + Depth zone + <i>interactions</i>	
<b>Step #</b>	<b>Model</b>	<b>AIC</b>
<b>0</b>	Probability of occurrence = <b>Intercept</b>	<b>351.34</b>
<b>1</b>	<b>+ Habitat type</b>	<b>337.74</b>
	+ Management zone	343.83
	+ Depth zone	344.58
	+ Location	345.92
<b>2</b>	<b>+ Management zone</b>	<b>333.10</b>
	+ Location	336.49
	+ Depth zone	338.79
	– Habitat type	351.34
<b>3</b>	<b>+ Habitat type x Management zone</b>	<b>324.93</b>
	+ Location	334.48
	+ Depth zone	335.43
	– Management zone	337.74
	– Habitat type	343.83
<b>4</b>	+ Location	326.07
	+ Depth zone	328.16
	– Habitat type x Management zone	333.10
<b>Final model:</b>	Probability of occurrence = <b>Habitat type + Management zone + Habitat type x Management zone</b>	

**Table S3. Probability of occurrence of *Ginglymostoma cirratum***

<b>Full model:</b>	Probability of occurrence = Intercept + Location + Habitat type + Management zone + Depth zone + <i>interactions</i>	
<b>Step #</b>	<b>Model</b>	<b>AIC</b>
<b>0</b>	Probability of occurrence = <b>Intercept</b>	<b>256.84</b>
<b>1</b>	<b>+ Habitat type</b>	<b>248.87</b>
	+ Management zone	254.94
	+ Depth zone	255.87
	+ Location	257.36
<b>2</b>	<b>+ Management zone</b>	<b>247.14</b>
	+ Location	250.86
	+ Depth zone	251.81
	– Habitat type	256.84
<b>3</b>	<b>– Management zone</b>	<b>248.87</b>
	+ Depth zone	249.62
	+ Location	249.83
	+ Habitat type x Management zone	251.18
	– Habitat type	254.94
<b>Final model:</b>	Probability of occurrence = <b>Habitat type</b>	

**Table S4. Size (total length) of *Carcharhinus perezii***

<b>Full model:</b>	Total length = Intercept + Location + Habitat type + Management zone + Depth zone + <i>interactions</i>	
<b>Step #</b>	<b>Model</b>	<b>AIC</b>
<b>0</b>	Total length = <b>Intercept</b>	<b>625.83</b>
<b>1</b>	+ Depth zone + Location + Habitat type + Management zone	<b>612.28</b> 623.40 626.86 627.77
<b>2</b>	+ Management zone + Habitat type + Location – Depth zone	614.22 615.30 615.51 625.83
<b>Final model:</b>	Total length = <b>Depth zone</b>	

**Table S5. Size (total length) of *Ginglymostoma cirratum***

<b>Full model:</b>	Total length = Intercept + Location + Habitat type + Management zone + Depth zone + <i>interactions</i>	
<b>Step #</b>	<b>Model</b>	<b>AIC</b>
<b>0</b>	Total length = <b>Intercept</b>	<b>554.58</b>
<b>1</b>	<b>+ Depth zone</b> + Location + Habitat type + Management zone	<b>545.25</b> 546.04 547.43 553.92
<b>2</b>	<b>+ Habitat type</b> + Location + Management zone – Depth zone	<b>533.04</b> 540.47 545.35 554.58
<b>3</b>	+ Location + Management zone + Habitat type x Depth zone – Habitat type – Depth zone	533.17 534.21 538.65 545.25 547.43
<b>Final model:</b>	Total length = <b>Depth zone + Habitat type</b>	

## Reference

Ripley B, Venables B, Bates DM, Hornik K, Gebhardt A, Firth D, Ripley MB (2013) R package 'mass'. Cran R 538. <https://cran.r-project.org/package=MASS>