

How good is your marine protected area at curbing threats?

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Abstract :

Marine protected areas (MPAs) are key tools to mitigate human impacts in coastal environments, promoting sustainable activities to conserve biodiversity. The designation of MPAs alone may not result in the lessening of some human threats, which is highly dependent on management goals and the related

specific regulations that are adopted. Here, we develop and operationalize a local threat assessment framework. We develop indices to quantify the effectiveness of MPAs (or individual zones within MPAs in the case of multiple-use MPAs) in reducing anthropogenic extractive and non-extractive threats operating at local scale, focusing specifically on threats that can be managed through MPAs. We apply this framework in 15 Mediterranean MPAs to assess their threat reduction capacity. We show that fully protected areas effectively eliminate extractive activities, whereas the intensity of artisanal and recreational fishing within partially protected areas, paradoxically, is higher than that found outside MPAs, questioning their ability at reaching conservation targets. In addition, both fully and partially protected areas attract non-extractive activities that are potential threats. Overall, only three of the 15 MPAs had lower intensities for the entire set of eight threats considered, in respect to adjacent control unprotected areas. Understanding the intensity and occurrence of human threats operating at the local scale inside and around MPAs is important for assessing MPAs effectiveness in achieving the goals they have been designed for, informing management strategies, and prioritizing specific actions.

Highlights

► We present and operationalize a cost-effective framework to quantify local threats inside and outside MPAs. ► We assess how good MPAs are at curbing extractive and non-extractive threats. ► Fully protected areas effectively eliminate extractive threats. ► Fully protected areas attract non-extractive threats, when allowed. ► Small scale fishing intensity is larger in partially protected areas than outside.

Keywords : Fully protected area, Partially protected area, Management, Extractive activities, Non-extractive activities, Marine use

34 1. Introduction

35 The effects of human coastal activities often combine into cumulative impacts on many
36 marine ecosystems (Halpern et al., 2015; 2008). Marine protected areas (MPAs) represent the
37 most common tool used in marine spatial planning to mitigate human impacts on marine
38 ecosystems (Lubchenco and Grorud-Colvert, 2015; Lubchenco et al., 2003) and are being
39 increasingly used worldwide both for conservation and fisheries management (Boonzaier and
40 Pauly, 2015). Understanding how MPAs target threats they've been designed to address is
41 essential to inform decision-making and optimize conservation outcomes (Guarderas et al.,
42 2008; Hockings et al., 2004). Some MPAs are located in regions of high cumulative human
43 impact, as shown both in the Mediterranean Sea (Coll et al., 2012; Rodríguez-Rodríguez et
44 al., 2015) and in the Atlantic (Batista et al., 2014). This led to debate about their
45 appropriateness at effectively reducing threats (Agardy et al., 2011; Jameson et al., 2002;
46 Rodríguez-Rodríguez et al., 2015).

47
48 Most studies that aimed at evaluating MPAs effectiveness at reducing threat intensities were
49 based on large scale assessments, with resolutions of 500 m (Batista et al., 2014) or 1 km²
50 grid cells (Micheli et al., 2013; Portman and Nathan, 2015). Little emphasis has been given
51 on mapping MPAs' specific threats acting at smaller spatial scales -- possibly with some
52 heterogeneity across MPA zones in the case of multiple-use MPAs --, those at which MPAs
53 and their respective management actions are primarily designed to operate in (MPAs being a
54 local spatial management tool; Olsen et al., 2013). This can result in difficulties to translate
55 research findings into management actions, compromising potential benefits of MPAs
56 (Agardy et al., 2011; Freed and Granek, 2014; Kearney et al., 2012; Mills et al., 2010).

57
58 The effectiveness of MPAs in reducing threats should be assessed at a local scale, where
59 protection schemes are implemented. To achieve this goal, it is crucial to understand the
60 differences in occurrence and intensity of human activities between the protected and
61 unprotected areas (Claudet and Guidetti, 2010; Portman and Nathan, 2015). This helps to
62 determine whether an MPA is actually successful in mitigating threats or whether the trends
63 observed are merely an indicator of what is occurring outside of the protected area, at larger
64 scales (Hargreaves-Allen et al., 2011).

65 Two broad types of MPAs exist. First, fully protected areas (FPAs); where all extractive
66 activities (e.g., fishing) are prohibited and where some non-extractive actives (e.g., diving)
67 can be allowed. They are also known as no-take areas or marine reserves. Second, partially
68 protected areas (PPAs); where some activities are prohibited (e.g., spearfishing), others
69 regulated (e.g., fishing with trammel nets) and others allowed (e.g., boating). Those PPAs can
70 be further classified down according to the impact allowed and regulated uses have on
71 species and habitats (Horta e Costa et al., 2016). Different levels of partial protection,
72 together with full protection, can be combined spatially within multiple-use MPAs.
73 Accordingly, the capacity of MPAs to reduce threats will differ depending on their type,
74 design, regulations and level of enforcement (Di Franco et al., 2016; Guidetti et al., 2008;
75 Scianna et al., 2015). Therefore, information on the intensity of threats within each MPA
76 zone and in the surrounding external areas is necessary to assess MPA effectiveness in
77 reducing threats.

78 Obtaining detailed information on threats is resource demanding, both in terms of time and
79 costs, as the sources of information are largely heterogeneous (Levin et al., 2014). There is a

80 need for a reliable, cost-effective method to assess the threat-reduction capacity of MPAs,
81 robust to the heterogeneity of data sources and associated levels of confidence based on data
82 quality. In addition, methods need to be standardized across MPAs as to allow both threat
83 comparisons, among different zones within individual MPAs, and across MPAs.

84
85 Here, we developed a cost-effective framework to quantify threats at local scale and assess
86 how MPAs are good (or not) at mitigating extractive and non-extractive local area-based
87 threats (Fig. 1). We trialed the framework on 15 Mediterranean MPAs. MPAs in the
88 Mediterranean Sea are a good model since this basin combines a high intensity of human uses
89 (Claudet and Fraschetti, 2010; Portman and Nathan, 2015) together with a high conservation
90 priority (Coll et al., 2010). This information is essential to inform local management as well
91 as forthcoming regional marine spatial planning (European Commission, 2017).

92 93 **2. Materials and methods**

94 *2.1. Data collection*

95 We first identified human threats that affect marine ecosystems at a local scale and that can
96 be managed by the MPA staff through regulations. This allowed the identification of 8 threats
97 (Table 1). Threats were either assigned to extractive (i.e., professional and recreational
98 fishing) or non-extractive uses (i.e., activities related to touristic frequentation).

99 We then developed indicators for each threat accounting for both availability of the data and
100 the quality of the information given. The set of indicators selected was tailored to the data
101 context of the study case, here the Mediterranean, where data availability can be poor in some
102 regions. Data relevant for quantifying threat indicators were collected by means of
103 questionnaires distributed to local managers and scientists. Local expert had to preferably
104 obtain threat indicator values from scientific studies, technical reports or other official
105 documents. When such sources were not available, expert opinion was considered. Three
106 levels of confidence were applied for the estimated threat values (qualitative: high, medium,
107 low). Threat indicator values were considered as high confidence when they were obtained
108 directly from recent quantitative data (e.g., from monitoring data), as medium confidence
109 when estimated from less recent quantitative data and as low confidence when no quantitative
110 data were available and local experts of the particular MPA provided the estimation of the
111 threat indicator value.

112
113 Threat indicators were quantified both within and outside 15 coastal MPAs in the
114 Mediterranean Sea (MPAs listed in Appendix A). In case of multiple-use MPAs (n=13), data
115 was obtained for each full (no-take/no-entry or no-take zones) or partial protection level. We
116 used two approaches to delineate the outside area, depending on the characteristics of the
117 threat: i) for commercial fishing with trawlers and purse seiners a 10 km radius surrounding
118 the MPAs was applied, while ii) for all other threats originating closer to the shore the coastal
119 section at a maximum distance from the shore equal to the MPAs most offshore limit was
120 considered (Fig C.1.). This specific outside areas were chosen following consultations with at
121 least one expert of each MPA. The two approaches aimed to reflect the nature and occurrence
122 of that threat in order to avoid over- or underestimation of threat intensities, respectively, in
123 the outside areas.

124
125 The total size of each zone within each MPA was obtained directly from managers and/or

126 from management plans, whilst the outside surface areas were calculated using QGIS 2.8/1
127 (QGIS Development Team, 2015).

128

129 All the raw data collected in this study can be found in Appendix B.

130

131 2.2. Threat indices

132

133 2.2.1. Threat intensity

134

135 Using the raw threat values (Table B.1), we calculated the intensity TI_{ijk} of each threat i
136 within each protection level j (full protection, partial protection and no protection-outside) for
137 each MPA k , as follows:

138

$$139 \quad TI_{ijk} = T_{ijk} / A_{jk}$$

140 where T_{ijk} is the value of threat i in zone j of MPA k , and A_{jk} is the area (km²) of zone j in
141 MPA k . We have then normalized threat intensity values (TI) by dividing each value with the
142 maximum threat intensity value (TI) of each threat, which resulted in a standardized scale of
143 [0;1]. These normalized values were then used to calculate the mean threat intensity of each
144 threat in each protection level to explore the variability of threat intensity amongst protection
145 levels. Detailed descriptive statistics of the normalized threat intensity index can be found in
146 Appendix C.

147

148 2.2.2. Threat reduction capacity

149

150 The threat reduction capacity TR_{ijk} of each protection level j (excluding the outside area) of
151 each MPA k was calculated as:

$$152 \quad TR_{ijk} = - \left(1 - \frac{TI_{ijk}}{TI_{o,ik}} \right)$$

153

154 where TI_{ijk} is the intensity of threat i inside zone j of MPA k , and $TI_{o,ik}$ is the threat intensity
155 of threat i outside of the MPA k . A negative value of TR indicates that the threat intensity is
156 reduced inside the protected area relative to the outside; a positive value of TR indicates that
157 the threat intensity is higher inside the MPA relative to the outside. The mean threat
158 reduction capacity values (TR_{ijk}) were used to compare the reduction capacity of the fully and
159 partially protected zones for every threat. Detailed descriptive statistics of the threat reduction
160 capacity index can be found in Appendix C.

161

162 2.2.3. Zone threat reduction score

163

164 The zone threat reduction score (zT) was calculated as:

$$165 \quad zT_{jk} = \frac{\sum_i TR_{ijk} * w_i}{\sum_i w_i} ,$$

166 where TR_{ijk} is the threat reduction capacity defined above and w_i is the weight associated to
167 threat i (Table 1). The weights for each threat were derived from Horta e Costa et al. (2016)

168 and were rescaled to values between 0 and 1, with 1 being the weight assigned to the threat
 169 with the greatest ecological impact (i.e. trawling). The weights were used to discriminate
 170 between different potential ecological impacts of each threat and were obtained with expert
 171 knowledge, but based on previous studies (see detailed explanation in Appendix A of Horta e
 172 Costa et al., 2016).

173

174 2.2.4. MPA threat reduction score

175

176 The MPA threat reduction score $mpaT$ was calculated as:

177

$$178 \quad mpaT_k = \frac{\sum_j zT_{jk} * A_{jk}}{\sum_j A_{jk}},$$

179 where zT_{jk} is the threat reduction score of zone j of MPA k , and A_{jk} is the surface area of
 180 zone j of MPA k . When the zone or MPA threat reduction score is negative, threats are being
 181 effectively reduced inside the zone and/or MPA compared to outside. When the threat
 182 reduction score is positive the MPA is actually enhancing threats rather than reducing them.

183 2.2.5. Local threat index

184 To account for the context in which MPAs are sited we calculated a local threat index lTI as
 185 follows:

186

$$187 \quad lTI_{ik} = \frac{TI_{o,ik}}{\max TI_{o,i}},$$

188 where the $TI_{o,ik}$ is the intensity of threat i outside MPA k and $\max TI_{o,i}$ is the maximum
 189 intensity value of threat i recorded from all the outside areas of all considered MPAs. The
 190 local threat index ranges from 0 to 1, indicating a local low and high intensity, respectively,
 191 of a particular threat in the area outside an MPA compared to the broader context.

192 2.2.6. MPA local threat index

193 Local threat indices were aggregated at each MPA scale to calculate the MPA local threat
 194 index $mpa.lTI$ as follows:

$$195 \quad mpa.lTI_k = \frac{\sum_i lTI_{ik} * w_i}{\sum_i w_i}$$

196 where lTI_{ik} is the local threat index of threat i of MPA k , as calculated above, and w_i is the
 197 weight of threat i . The values of the MPA local threat indices were normalized by dividing by
 198 the maximum local threat index value, resulting in a standard scale of 0-1, with low scores
 199 indicating a low local threat intensity, that is an overall low intensity of threats in the area

200 outside the MPA, when compared to threat intensities in area outside the other MPAs in the
201 region.

202 203 2.3. Data analyses

204
205 The relationship between the MPA threat reduction score (*mpaT*) and the MPA local threat
206 index (*mpa.LTI*) were explored using a linear model. Additionally, the relationship between
207 the threat reduction score, *mpaT*, and the age and size of the MPA were also tested with a
208 regression to investigate whether these design characteristics affect the threat reduction
209 capacity of MPAs.

210
211 The data on the confidence level associated with each threat type and zone protection level
212 was analysed using chi-square tests to assess whether there is an association between data
213 quality and zone type or threat type, respectively.

214
215 All analyses were conducted using R (R Development Core Team, 2016). The R script is
216 available in Appendix D.

217 218 3. Results

219
220 Mean threat intensities (*TI*) differed amongst protection levels threat type (Fig. 2). Fully
221 protected zones had no extractive threats (by definition), however they had the highest
222 intensity of all non-extractive threats. On average, the intensity of non-extractive threats was
223 2.6 and 16 times greater in fully protected zones compared to partially protected zones and
224 the area outside of the MPAs, respectively.

225
226 All threats were present in partially protected zones, with the highest levels of both
227 recreational and artisanal fishing (Fig. 2). In the area outside MPAs, the intensity of
228 extractive threats was up to 18 times greater than the intensity of non-extractive threats.

229 The threat reduction capacity (*TR*) differed across protection level and threat type (Fig. 3).
230 Fully protected areas removed all extractive threats, while on average, partially protected
231 zones did not reduce extractive threats. The intensities of large commercial fisheries (trawling
232 and purse-seine) were reduced in partially protected zones compared to the outside, yet the
233 intensities of artisanal and recreational fishing were approximately 4.9 times greater than in
234 the surrounding areas. All non-extractive threats were increased within fully and partially
235 protected zones, compared to the outside surrounding areas.

236 The mean zone threat reduction score (*zT*) for non-extractive threats was, on average, 4.8
237 greater for fully protected zones compared to partially protected zones, yet this value was
238 highly variable (Fig. 3).

239
240 The MPA threat reduction score (*mpaT*) ranged between -0.8 and 116 (Fig. 4). Overall, only
241 three MPAs reduced all threats relative to the outside. Five MPAs reduced all extractive
242 threats and two MPAs reduced all non-extractive threats relative to their outside area.

243
244 The intensity of threats in the areas outside of MPAs varied greatly among MPAs (Fig. C.2 in
245 Appendix C). There were no significant relationship between the MPAs' threat reduction
246 score (*mpaT*) and the MPA local threat index (*mpa.LTI*), indicating that the capacity of MPAs
247 to reduce threats was independent on the intensity of threats in their surrounding areas

248 (p>0.05, see Fig. C.3 in Appendix C). Likewise, there were no significant relationships
249 between the MPA threat reduction score and the age or size of the MPA (p>0.05, see Fig. C.4
250 and C.5 in Appendix C).

251
252 The confidence levels associated with estimates of threat intensities differed among zones of
253 MPAs and the outside areas (chi-squared test, $\chi^2=153.54$, p<0.001). More than half of the
254 values from the areas outside were given low confidence (Fig. 5). In contrast within the
255 MPAs, the majority of threat values had high confidence, 65% and 50% in fully and partially
256 protected zones, respectively.

257
258 Confidence levels also differed amongst threats (chi-squared test, $\chi^2=233.63$, p<0.001). For
259 all extractive threats, the greatest proportion of values had high confidence (Fig. 6). Scuba-
260 diving and commercial boating were among the non-extractive threats with the highest
261 proportion of high confidence, while the values attributed to private boating and bathing had
262 low confidence.

263 264 **4. Discussion**

265
266 This study was designed to provide a framework of the effectiveness of MPAs at curbing
267 threats at the scale they are designed, developing indices of the intensity of threats at the scale
268 of single MPAs (Fig. 1). The information provided was scaled to support management
269 actions designed to enhance the success of each MPA in achieving its goals (Hockings et al.,
270 2004).

271
272 Our most compelling result is that threats can indeed increase in MPAs compared to outside
273 areas. Even if absent for fully protected zones, many extractive threats were larger in
274 partially protected zones compared to outside. Contrary to fully protected zones, partially
275 protected zones do not necessarily have the objective to eliminate threats (e.g., via a fishing
276 ban), but to regulate their intensity towards sustainable levels. Implementing management
277 strategies that allow and maintain ecologically sustainable uses ensures long-term benefits
278 from ecosystem services benefiting local economies and, hence, local communities (Roberts
279 et al., 2005). In the Mediterranean Sea, the regulatory regimes of partially protected areas
280 vary from MPA to another, however there are some common modalities (Portman et al.,
281 2012).

282
283 Artisanal and recreational fishing are permitted in partially protected zones of many MPAs,
284 although most of the time subjected to restrictions in the type of gear allowed. The intensity
285 of artisanal and recreational fishing was up to 4.8 times higher inside partially protected
286 zones compared to outside control areas. While the regulatory regime in partially protected
287 zones may be stricter than in the surrounding outside areas, the former still attract more
288 fishers and hence increase fishing pressure. Most of the partially protected zones considered
289 in this study surround fully protected areas (Appendix A) and may attract fishermen. Full
290 protection enhance fish abundance and size (Guidetti et al., 2014; Sala et al., 2012), often
291 resulting in the spillover of larvae and adults to adjacent unprotected areas (Di Franco et al.,
292 2015; 2012; Di Lorenzo et al., 2016; Garcia-Rubies et al., 2013; Goñi et al., 2010; Stobart et
293 al., 2009), hence concentrating fishing effort (Kellner et al., 2007; Stelzenmüller et al., 2007).

294
295 The intensity of non-extractive threats was also higher within MPAs than in the areas outside,
296 and at least 4 times higher in fully protected zones compared to partially protected zones. By
297 definition, fully protected areas are places aiming to protect the full spectrum of biodiversity

298 by limiting all kinds of extractive and destructive activity within them (Allison et al., 1998),
299 yet this does not exclude all human activity. Indeed, most fully protected zones allow and, as
300 we show here, *attract* visitation with the intent of non-extractive activities (Thurstan et al.,
301 2012). Increasing non-extractive touristic activities are viewed as a positive socioeconomic
302 output of MPAs in the Mediterranean Sea and worldwide (Leisher et al., 2007; Pascual et al.,
303 2016), as they promote education, support employment and generate revenue (Hargreaves-
304 Allen et al., 2011; Pascual et al., 2016; Spalding et al., 2017). Increasing tourism is, therefore,
305 often listed as a looked-for objective of MPAs (Hargreaves-Allen et al., 2011). Thurstan et al.
306 (2012) suggest that unless all activities are adequately managed, regulation of extractive
307 activities alone may not guarantee the levels of biodiversity protection expected from fully
308 protected zones.

309 Only three MPAs were effective in reducing the intensity of threats in respect to adjacent
310 unprotected areas. Examining the context in which MPAs are established is, nevertheless,
311 central to understanding the capacity of MPAs in addressing threats and their conservation
312 potential (Portman and Nathan, 2015). The majority of MPAs in this study are multiple-use
313 MPAs that accommodate a variety of uses. This type of MPAs is common for densely
314 populated systems (Agardy et al., 2003), such as the Mediterranean Sea, where reducing all
315 threats is unlikely. Portman et al. (2015) showed that the variety of activities occurring within
316 the Mediterranean MPAs is often greater than in the coastal unprotected areas of many
317 Mediterranean countries. Yet, multiple use MPAs and particularly partially protected areas
318 alone are now the most common type of MPAs being implemented worldwide (Claudet,
319 2017). They are being established to meet the international targets of protection (Agardy et
320 al. 2016), with the stated objectives of biodiversity conservation. Our results point that the
321 achievability of their goals should be questioned, as here, we show that not only the variety,
322 but also intensity of threats is generally greater within MPAs than in the areas outside (see
323 also Mora et al., 2006) that leads to the low threat reduction capacity of MPAs.

324 The capacity to reduce (or not) threats was not dependent on the threat local context, the age
325 or the size of the MPA. This suggests that the relationship between threat-intensity and
326 reduction-capacity is mainly a function of management objectives and capacity (Gill et al.,
327 2017), corresponding regulations (Horta e Costa et al. 2016) and enforcement (Guidetti et al.,
328 2008) of each MPA rather than the magnitude of the outside threat intensities or design
329 features. Hargreaves et al. (2017) examined the differences in threats inside and outside coral
330 reef MPAs and they showed that MPAs with reduced threats had more staff and invested
331 more funds into active management. Indeed, management has been identified as one of the
332 most important factors affecting the effectiveness of MPAs (Gill et al., 2017). Understanding
333 how different management regimes affect the threat reduction capacity of zones in multiple-
334 use MPAs should be further investigated as it could shed light onto the highly variable
335 responses we have observed among protection levels.

336
337

338 Our framework uses threats, and their respective indicators, that are most common and were
339 easily obtained in the Mediterranean MPAs. While we were able to trial our framework using
340 the information available, the assessment of the MPAs threat reduction capacity could be
341 refined with more detailed and robust data. Besides, we do acknowledge that other types of
342 threats may be present in other systems yet this issue can be easily overcome, as our
343 framework can be adapted to suit a variety of systems, by incorporating new threats and their
344 corresponding indicators.

345

346 We did not include poaching as one of the threats in our framework. Poaching levels can
347 often be higher than assumed in MPAs (Bergseth et al., 2017) and represent an important
348 threat to the effectiveness of MPAs. While we initially planned to collect data on poaching,
349 we faced strong difficulties to quantitatively standardize this threat across MPAs. If
350 standardized data can be obtained across a range of MPAs, this can easily be added in the
351 framework as an additional threat.

352

353 Our results point out that we have greater confidence about what is happening inside MPAs
354 than in their surrounding areas. The low confidence associated with threat values in the
355 unprotected, outside, areas might have affected the precision of our results. The areas outside
356 MPAs are usually less monitored or completely unmonitored and estimating threat values for
357 these areas was challenging. Good management should require regular monitoring, both for
358 the ecological and environmental status of the MPA habitats (Fraschetti et al., 2013), but also
359 should incorporate monitoring of the main activities that can lead to potential threats both
360 inside and beyond the borders of the MPA (Claudet and Guidetti, 2010; Hargreaves-Allen et
361 al., 2017; Parravicini et al., 2013).

362

363 Evaluating the success of MPAs is essential to maximize their conservation potential (Agardy
364 et al., 2016; Pomeroy et al., 2005), especially within an adaptive management framework
365 (Scianna et al., 2015). Contrary to previous assessments (Coll et al., 2012; Micheli et al.,
366 2013) our approach uses data specific to each zone of the MPA, where strong heterogeneity
367 among threats intensity can occur, and accounts for manageable threats at manageable scales
368 relevant for MPA managers. We therefore believe this work has general and wide
369 applications, especially for managers and planners who need to assess the success of MPAs at
370 achieving marine spatial planning goals (Partelow et al., 2015).

371 **Management implications**

372 By providing the ability to easily compare threat intensities and the capacity of a given MPA
373 to reduce threats, our proposed framework can help prioritize management actions.
374 Management actions should first be directed towards reducing threats that would prevent
375 achieving the MPA objectives. Besides, the threat assessment framework can help identify
376 unexpected indirect effects of MPA creation, such as increased non-extractive threat due to
377 increase attendance.

378

379 By providing the ability to easily compare threat reduction score among zones, in the case of
380 multiple-use MPAs, our proposed framework can help guide local spatial planning.
381 Assigning different uses in different zones can have trade-offs in terms of biodiversity
382 conservation and ecosystem services delivery and threat assessment is a first step towards the
383 identification of acceptable thresholds of uses. When scaled-up regionally, the threat
384 assessment framework can help guide regional spatial planning.

385

386 The threat assessment framework could be incorporated into monitoring programs. First,
387 monitoring threat evolution over time helps identify the management actions able to reduce
388 threats. Second, this would necessarily imply to monitor and collect data, which is a
389 condition of proper MPA effectiveness assessments.

390

391

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396

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604 **Tables**

605 **Table 1.** Local threats that can affect marine protected area (MPA) effectiveness and that can
 606 be managed by the MPA regulations. Indicators were chosen considering trade-offs between
 607 reliability and data availability. Weights reflect the potential impact of a given activity on both
 608 species and habitats and were rescaled after Horta e Costa et al. (2016)

609

Threat	Threat Indicator	Scaled weight
<i>Extractive threats</i>		
<i>Recreational fishing</i> : hook and line	Number of people (nb/year)	0.56
<i>Recreational fishing</i> : spearfishing	Number of people (nb/year)	0.33
<i>Artisanal fishing</i> : Professional fishing except trawlers/purse-seiners	Number of boats (nb/year)	0.82
<i>Commercial fishing</i> : Professional fishing trawlers/purse-seiners	Number of boats (nb/year)	1
<i>Non-extractive threats</i>		
<i>Tourism</i> : bathing/tramplng	Number of people (nb/year)	0.11
<i>Tourism</i> : scuba-diving	Number of dives (nb/year)	0.11
<i>Tourism</i> : private boating	Number of private boats (nb/year)	0.22
<i>Tourism</i> : commercial boating	Number of commercial touristic boats (nb/year)	0.22

610

611

612

613

614 **Figure legends**

615

616 **Fig. 1.** The framework to assess how good are marine protected areas (MPAs) at curbing
617 threats.

618

619 **Fig. 2.** Mean threat intensities (\pm SE) across fully protected, partially protected and outside
620 zones of 15 marine protected areas.

621 **Fig. 3.** Mean threat reduction capacity (\pm SE) for each threat across zones of different
622 protection levels. The last bar of each panel represents the zone threat reduction score (zT).
623 Negative values of the threat reduction capacity indicate that the threat is reduced in the marine
624 protected area (MPA) relative to the outside, while positive values indicate that threats are
625 higher inside the MPA relative to the outside.

626 **Fig. 4.** Threat reduction score of marine protected areas (MPAs) for all threats combined (top
627 panel), extractive (bottom left panel) and non-extractive threats (bottom right panel). Negative
628 values of the threat reduction score indicate that threats are being effectively reduced within an
629 MPA relative to the outside, while positive threat reduction score values indicate that the MPA
630 is not effective at reducing threats compared to the outside.

631

632 **Fig. 5.** Level of confidence (low, medium and high) associated to threat values corresponding
633 to the fully protected zones, partially protected zones and the outside areas of the marine
634 protected areas.

635

636 **Fig. 6.** Confidence levels (low, medium and high) associated to threat values for each threat.
637 The red and blue outlines separate extractive and non-extractive threats.

638

639

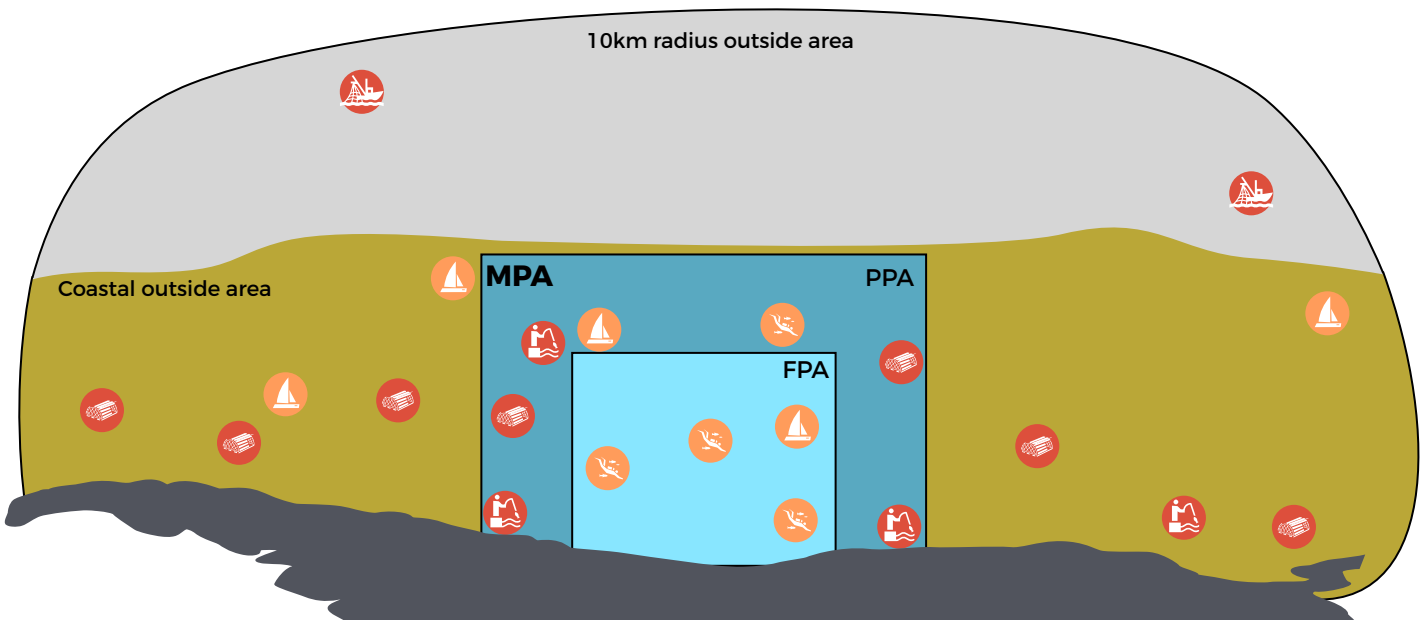
640

How good is your MPA at curbing threats?

Step 1. Identify threats



Step 2. Quantify threats inside and outside the MPA



MPA - Marine Protected Area

FPA - Fully Protected Area

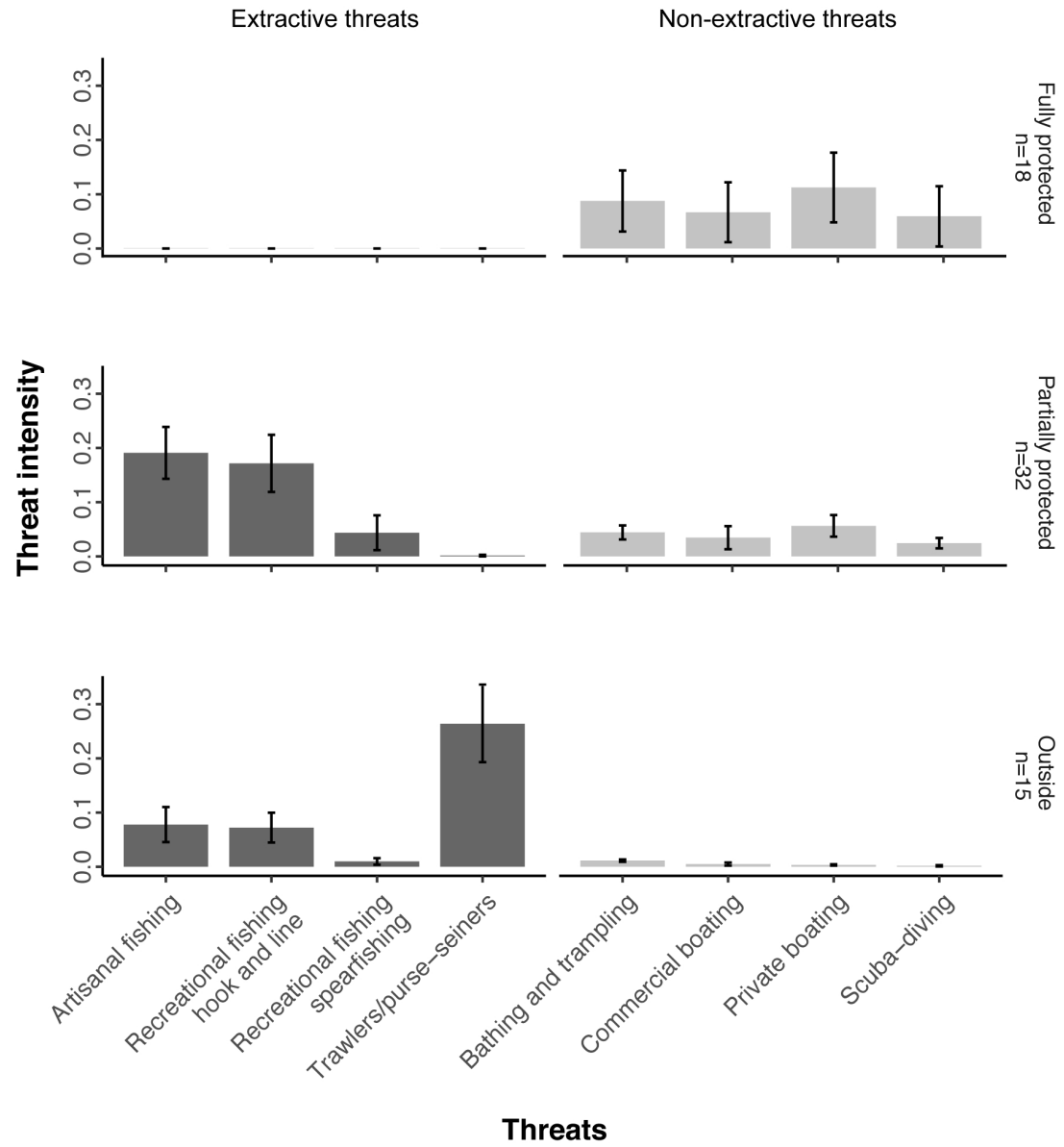
PPA - Partially Protected Area

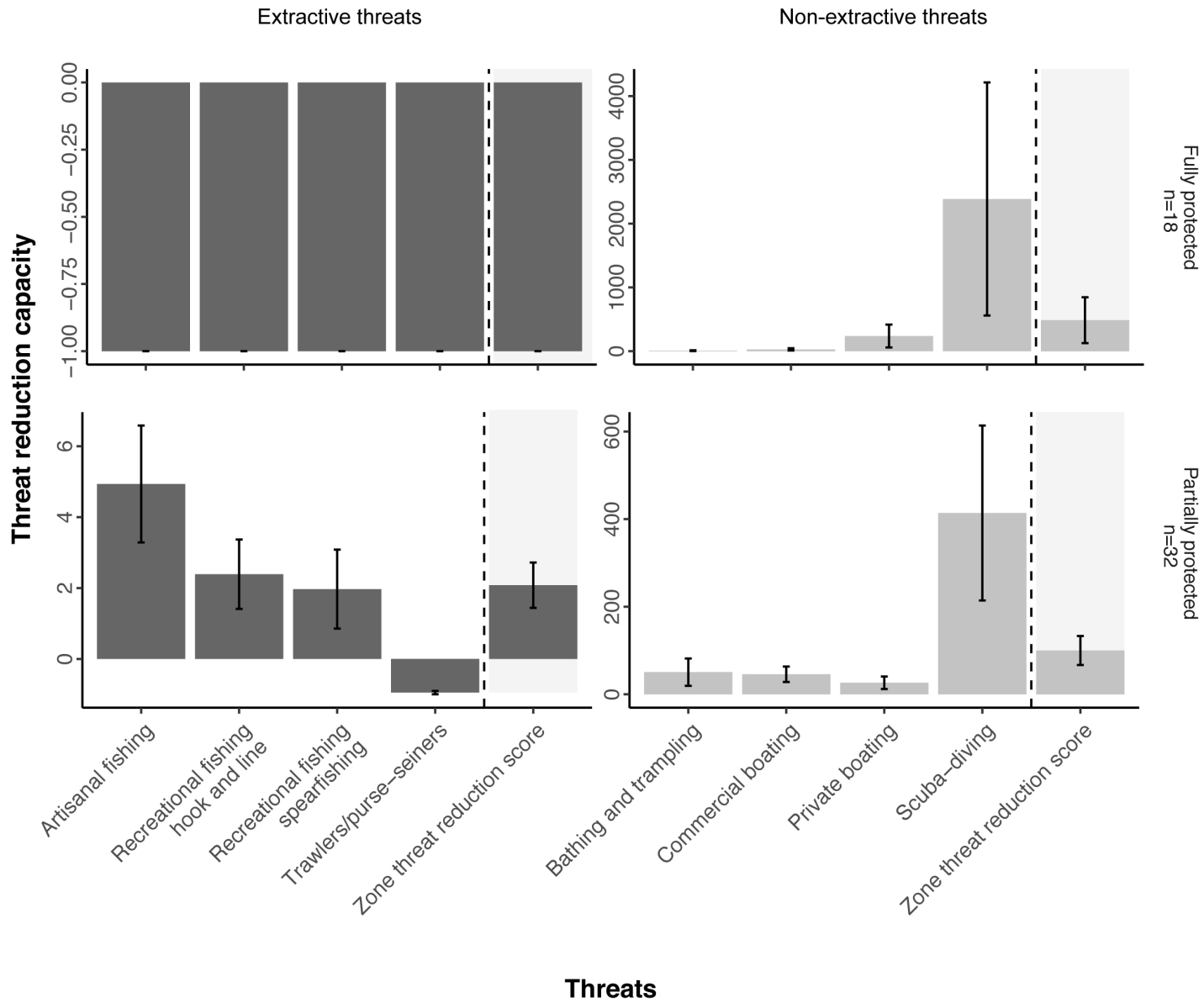
Step 3. Calculate indices

TI	Threat intensity	TRC	Threat Reduction Capacity	ZTR	Zone Threat Reduction	MTR	MPA Threat Reduction
	What is each threat intensity in each zone and inside the MPA overall?		Is the threat being reduced compared to the outside area?		Does the zone reduce threats compared to the outside area?		Does the MPA reduce threats compared to the outside area?

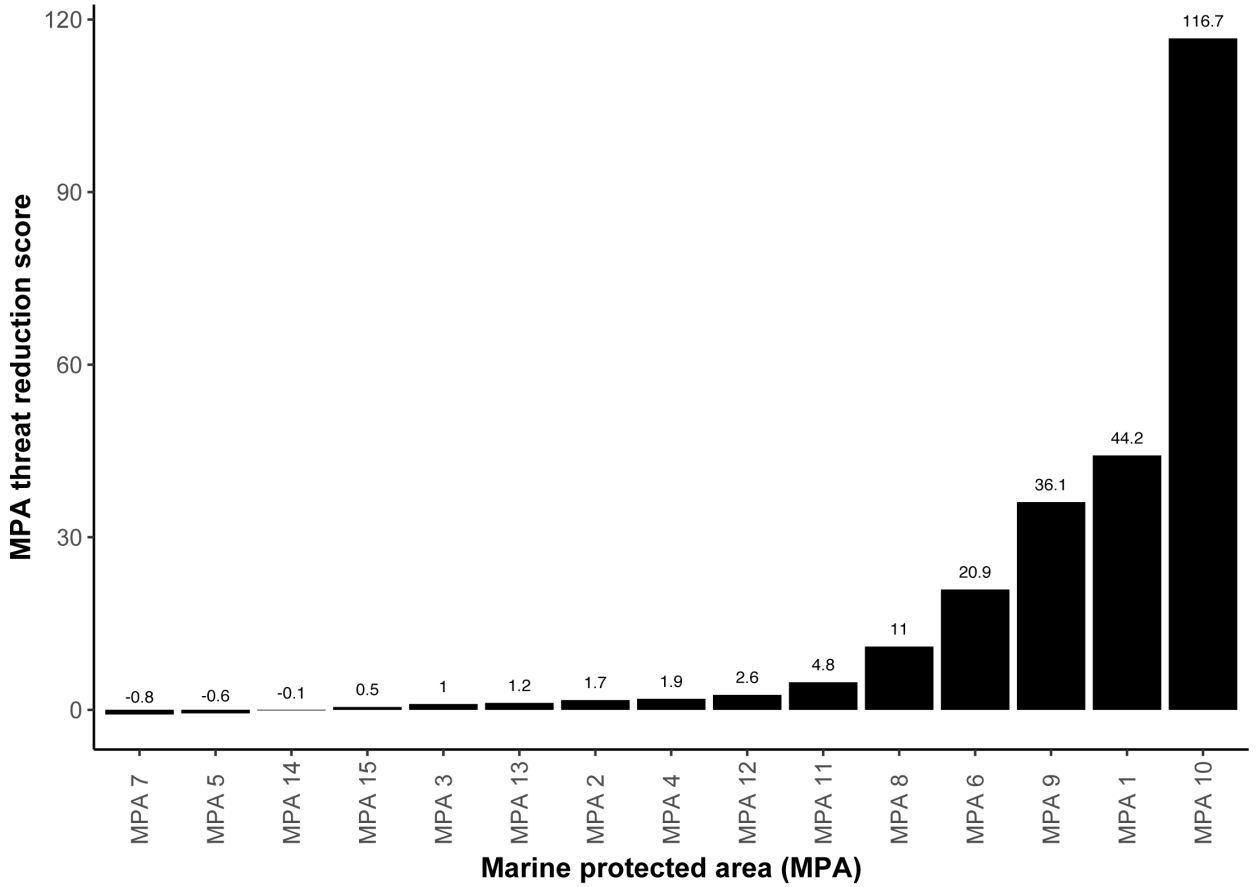
Step 4. Management implications

- Study spatial distribution of threats
- Threat evolution over time
- Evaluate the performance of MPAs
- Compare zones and MPAs
- Prioritization of management actions
- and more.

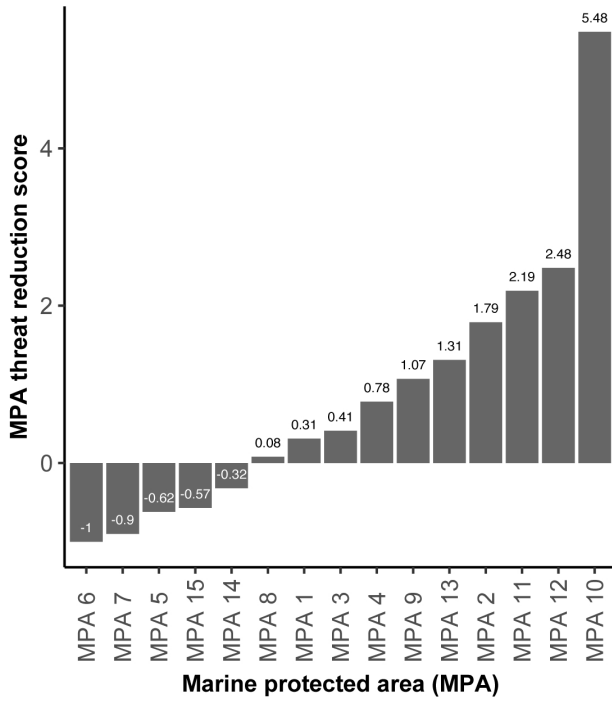




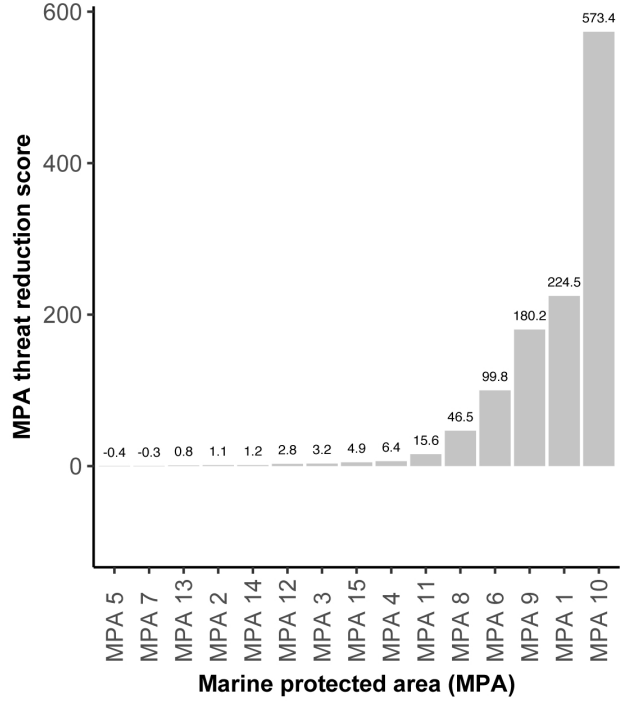
All threats

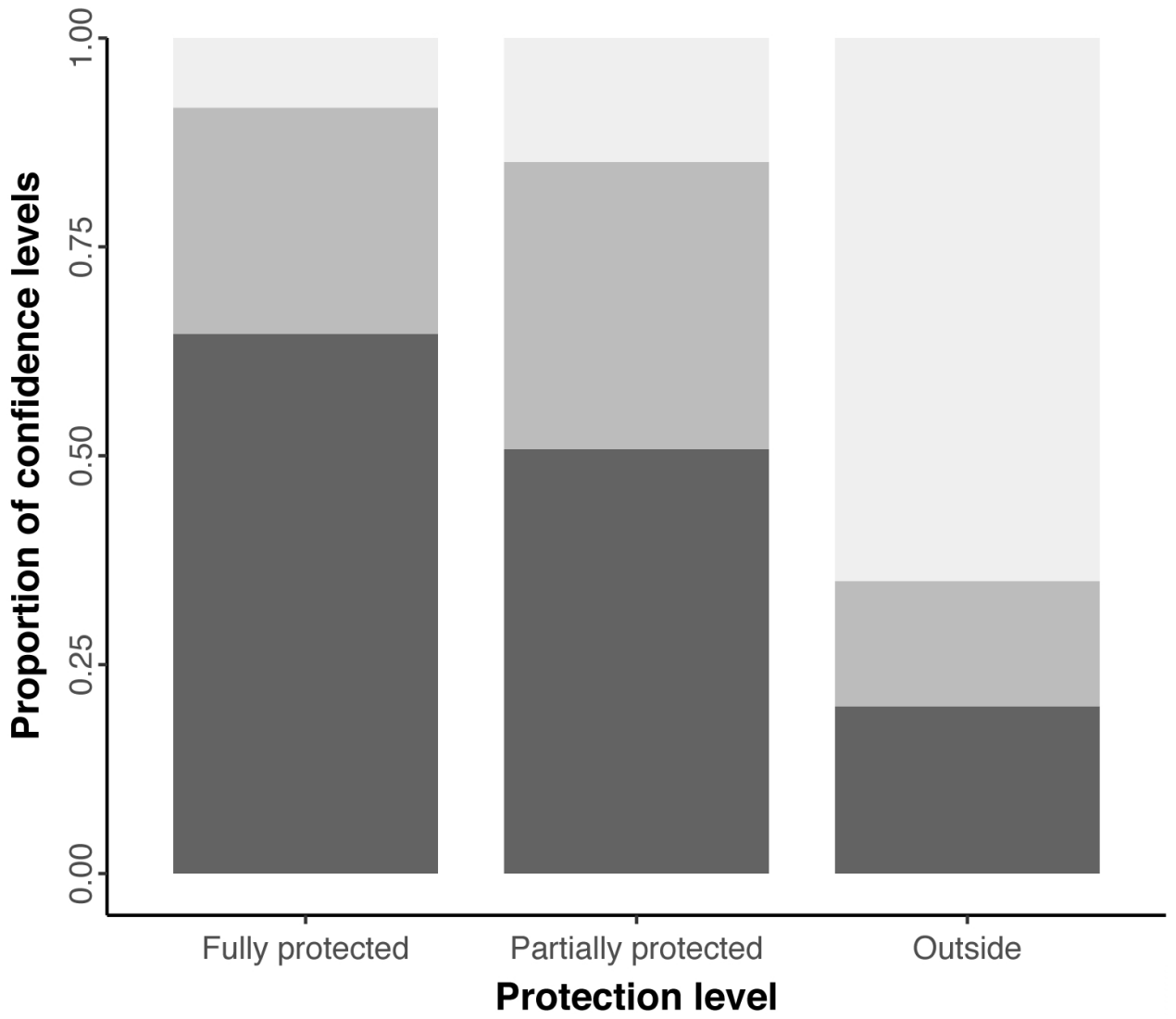


Extractive threats

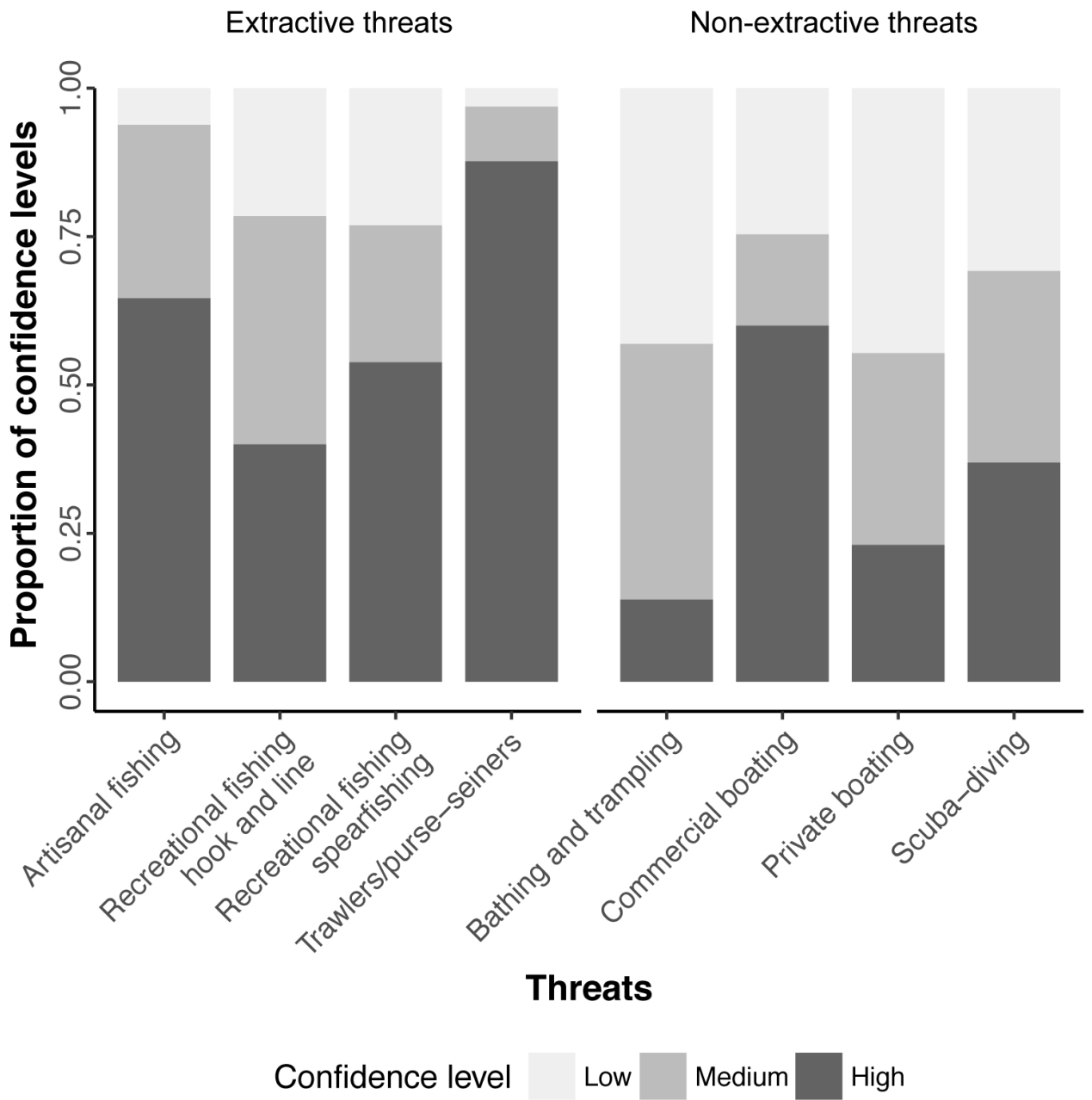


Non-extractive threats





Confidence level Low Medium High



Appendix A
Database of marine protected areas used in the present study

Table A.1: The characteristics of each of the marine protected areas (MPAs) included in this study. Zone name represents the official name on the basis of the establishment decree. Zones were classified according to the level of protection: fully protected zones (no-entry and no-take areas) and partially protected zones. The size of each zone within the MPA was obtained from managers and/or management plans, whilst the outside surface areas were calculated using QGIS 2.8/1 (QGIS Development Team, 2015). Commercial fisheries using trawlers and purse seiners were assessed in a 10km radius outside area whereas recreational and artisanal fishing and tourism were assessed in the coastal outside area.

MPA code	MPA name	Zone name	Protection level	Zone size (km ²)	MPA size (km ²)	Year of establishment	Outside area – coastal (km ²)	Outside area- 10 km radius (km ²)
MPA 01	AMP Portofino	Zona A	Fully protected (no entry)	0.18	3.94	1998	15.13	190.98
		Zona B	Partially protected	1.95				
		Zona C	Partially protected	1.81				
MPA 02	Al Hoceima	Zona A	Fully protected (no take)	17.8	24.2	2004	183.7	631.53
		Zona C	Partially protected	6.4				
MPA 03	Cerbere-Banyuls Natural Marine Reserve	Zone de protection renforcée	Fully protected	0.65	6.5	1974	55.33	194.02
		Zone de protection partielle	Partially protected	5.85				
MPA 04	Dwejra MPA	<i>one zone only</i>	Partially protected	2.29	2.27	2007	24.75	347.66
MPA 05	Levante de mallorca-cala Rajada	Amortiguación	Partially protected	93.86	112.86	2007	156.25	684.03
		Integral	Fully protected (no take)	19				

MPA 06	Masia Blanca	Buffer	Fully protected (no take)	2.07	2.50	1999	36.43	196.48
		Integral	Fully protected (no take)	0.43				
MPA 07	NP Brijuni	Zone A	Fully protected (no take)	31.24	34.01	1983	68.1	398.78
		Zone B	Partially protected	2.77				
MPA 08	National rine Park of Zakynthos	Peripheral zone	Partially protected	31.94	83.31	1999	171.12	1050.33
		Zone A	Partially protected	8.01				
		Zone B	Partially protected	35.95				
		Zone C	Partially protected	7.40				
MPA 09	Parc Natural de Cap de Creus	Parc Natural Cadaques	Partially protected	9.6	30.5	1998	76.52	557.97
		Parc Natural Cap de Creus	Partially protected	2.3				
		Parc Natural Cap Gros	Partially protected	7.1				
		Parc Natural Cap Norfeu	Partially protected	3.3				
		Reserva Natural Integral des Encalladora	Fully protected (no entry)	0.02				
		Reserva Natural Parcial del Cap de Creus	Partially protected	2.9				
		Reserva Natural Parcial del Cap Norfeu	Partially protected	2.7				
		Reserva Natural Parcial dels Farallons	Partially protected	2.6				

MPA 10	Parc Natural del Montgrí, el baix Ter i les Medes	Reserva Natural Parcial de les Illes Medes	Partially protected	9.4	15.19	2010	94.35	348.87
		Reserva Natural Parcial de les Illes Medes	Fully protected (no take)	1				
		Parc Natural Marí	Partially protected	4.79				
MPA 11	Parque Nacional marítimo terrestre del Archipiélago de Cabrera	Reserva marina	Fully protected (no entry)	2.12	87.05	1991	64.91	800.32
		Uso especial	Fully protected (no take)	0.71				
		Uso moderado	Partially protected	77.98				
		Uso restringido	Fully protected (no take)	0.68				
		Uso restringido pesquero	Partially protected	5.62				
MPA 12	Porto Cesareo	Zone A	Fully protected (no take)	1.99	164.87	1997	307.91	407.17
		Zone B	Fully protected (no take)	30.21				
		Zone C	Partially protected	132.66				
MPA 13	Rdum Majjiesa to Ras ir-Raheb	<i>one zone only</i>	Partially protected	8.49	8.49	2007	115.8	308.29
MPA 14	Torre Guaceto	Zona A	Fully protected (no take)	1.85	22.33	1991	76.87	282.03
		Zona B	Fully protected (no entry)	18.85				
		Zona C	Partially protected	22.33				

MPA 15	Kornati	Anchoring subzone (3a)	Partially protected	1.41	216.78	1994	462.13	1269.35
		Recreation subzone (2b)	Partially protected	2.36				
		Settlement subzone (3b)	Partially protected	0.64				
		Strict protection subzone (1b)	Fully protected (no take)	111.52				
		Tradition and culture subzone (2a)	Partially protected	82.22				
		Very strict protection subzone (1a)	Fully protected (no entry)	18.64				

Appendix B

Raw threat data collected of marine protected areas used in the present study

Table B.1. Raw data collected for all threat indicators for each zone of all marine protected areas (MPAs) used in this study. The source of data and confidence level associated to each threat value are also presented. Zone name represents the official name on the basis of the establishment decree. Zones were classified according to the level of protection: fully protected zones (no-entry and no-take areas), partially protected zones and the unprotected-outside areas. The size of each zone within the MPA was obtained from managers and/or management plans, whilst the outside surface areas were calculated using QGIS 2.8/1 (QGIS Development Team, 2015). Commercial fisheries using trawlers and purse seiners were assessed in a 10km radius outside area whereas recreational and artisanal fishing and tourism were assessed in the coastal outside area.

MPA Code	Zone name	Protection level	Zone size (km ²)	Threats	Indicators	Value	Data source	Confidence	Details
MPA 01	Zona A	No-entry	0.175	Artisanal fishing	Number of boats (nb/year)	0	data	high	MPA regulations
MPA 01	Zona A	No-entry	0.175	Recreational fishing: hook and line	Number of people (nb/year)	0	data	high	MPA regulations
MPA 01	Zona A	No-entry	0.175	Recreational fishing: spearfishing	Number of people (nb/year)	0	data	high	MPA regulations
MPA 01	Zona A	No-entry	0.175	Tourism: bathing/trampl ing	Number of people (nb/year)	0	data	high	MPA regulations
MPA 01	Zona A	No-entry	0.175	Tourism: commercial boating	Number of commercial touristic boats (nb/year)	0	data	high	MPA regulations
MPA 01	Zona A	No-entry	0.175	Tourism: private boating	Number of private boats (nb/year)	0	data	high	MPA regulations
MPA 01	Zona A	No-entry	0.175	Tourism: scuba-diving	Number of dives (nb/year)	0	data	high	MPA regulations
MPA 01	Zona A	No-entry	0.175	Trawlers/purse -seiners	Number of boats (nb/year)	0	data	high	MPA regulations

MPA 01	Zona B	Partially protected	1.95	Artisanal fishing	Number of boats (nb/year)	39	data	high	Portofino MPA data of granted licences
MPA 01	Zona B	Partially protected	1.95	Recreational fishing: hook and line	Number of people (nb/year)	400	data	medium	Estimated data (on the basis of resident population)
MPA 01	Zona B	Partially protected	1.95	Recreational fishing: spearfishing	Number of people (nb/year)	0	data	medium	MPA regulations
MPA 01	Zona B	Partially protected	1.95	Tourism: bathing/trampl ing	Number of people (nb/year)	150000	data	low	Cappanera et al. (2010)
MPA 01	Zona B	Partially protected	1.95	Tourism: commercial boating	Number of commercial touristic boats (nb/year)	0	data	high	MPA regulations
MPA 01	Zona B	Partially protected	1.95	Tourism: private boating	Number of private boats (nb/year)	1924	data	medium	Cappanera et al. (2014): estimated data referred to 2013 season
MPA 01	Zona B	Partially protected	1.95	Tourism: scuba-diving	Number of dives (nb/year)	32306	data	medium	Cappanera et al. (2014): estimated data referred to 2013 season
MPA 01	Zona B	Partially protected	1.95	Trawlers/purse-seiners	Number of boats (nb/year)	0	data	high	MPA regulations
MPA 01	Zona C	Partially protected	1.811	Artisanal fishing	Number of boats (nb/year)	39	data	high	Portofino MPA data of granted licences
MPA 01	Zona C	Partially protected	1.811	Recreational fishing: hook and line	Number of people (nb/year)	349	data	medium	Estimated data (on the basis of resident population)
MPA 01	Zona C	Partially protected	1.811	Recreational fishing: spearfishing	Number of people (nb/year)	0	data	high	MPA regulations
MPA 01	Zona C	Partially protected	1.811	Tourism: bathing/trampl ing	Number of people (nb/year)	150000	data	low	Cappanera et al. (2010): estimated data referred to the period from June to September
MPA 01	Zona C	Partially protected	1.811	Tourism: commercial boating	Number of commercial touristic boats (nb/year)	0	data	high	MPA regulations

MPA 01	Zona C	Partially protected	1.811	Tourism: private boating	Number of private boats (nb/year)	8767	data	medium	Cappanera et al. (2014): estimated data referred to 2013 season
MPA 01	Zona C	Partially protected	1.811	Tourism: scuba-diving	Number of dives (nb/year)	2000	expert opinion	low	Cappanera et al. (2014): estimated data referred to 2013 season
MPA 01	Zona C	Partially protected	1.811	Trawlers/purse-seiners	Number of boats (nb/year)	0	data	high	MPA regulations
MPA 01	Outside	Outside	15.13	Artisanal fishing	Number of boats (nb/year)	159	data	high	Ligurian Region data, MARTE+ (Cattaneo-Vietti R. 2013)
MPA 01	Outside	Outside	15.13	Recreational fishing: hook and line	Number of people (nb/year)	800	expert opinion	low	Estimated
MPA 01	Outside	Outside	15.13	Recreational fishing: spearfishing	Number of people (nb/year)	100	expert opinion	low	Estimated
MPA 01	Outside	Outside	15.13	Tourism: bathing/trampl ing	Number of people (nb/year)	100000	expert opinion	low	Estimated data (on the basis of the number of resident people, ISTAT 2012)
MPA 01	Outside	Outside	15.13	Tourism: commercial boating	Number of commercial touristic boats (nb/year)	140	data	high	Cappanera et al. (2014): estimated data referred to 2013 season
MPA 01	Outside	Outside	15.13	Tourism: private boating	Number of private boats (nb/year)	3600	expert opinion	low	Estimated
MPA 01	Outside	Outside	15.13	Tourism: scuba-diving	Number of dives (nb/year)	100	expert opinion	low	Estimated
MPA 01	Outside	Outside	190.98	Trawlers/purse-seiners	Number of boats (nb/year)	53	data	high	Fleet register EC - December2013
MPA 02	Zona A	No-take	17.8	Artisanal fishing	Number of boats (nb/year)	0	data	medium	Franzosini C. & Limam A. (2006); AGIR (2013)
MPA 02	Zona A	No-take	17.8	Recreational fishing: hook and line	Number of people (nb/year)	0	data	medium	Nibani H. (2010); AGIR (2013)

MPA 02	Zona A	No-take	17.8	Recreational fishing: spearfishing	Number of people (nb/year)	0	data	medium	Nibani H. (2010), AGIR (2013)
MPA 02	Zona A	No-take	17.8	Tourism: bathing/trampl ing	Number of people (nb/year)	0	expert opinion	medium	expert opinion
MPA 02	Zona A	No-take	17.8	Tourism: commercial boating	Number of commercial touristic boats (nb/year)	0	data	low	Nibani H. (2010), AGIR (2013)
MPA 02	Zona A	No-take	17.8	Tourism: private boating	Number of private boats (nb/year)	0	expert opinion	low	expert opinion
MPA 02	Zona A	No-take	17.8	Tourism: scuba-diving	Number of dives (nb/year)	100	data	medium	Nibani H. (2010), AGIR (2013)
MPA 02	Zona A	No-take	17.8	Trawlers/purse-seiners	Number of boats (nb/year)	0	data	medium	Franzosini C. & Limam A. (2006), AGIR (2013)
MPA 02	Zona C	Partially protected	6.4	Artisanal fishing	Number of boats (nb/year)	130	data	high	Franzosini C. & Limam A. (2006), AGIR (2013)
MPA 02	Zona C	Partially protected	6.4	Recreational fishing: hook and line	Number of people (nb/year)	1800	data	medium	Franzosini C. & Limam A. (2006), AGIR (2013)
MPA 02	Zona C	Partially protected	6.4	Recreational fishing: spearfishing	Number of people (nb/year)	800	data	medium	Franzosini C. & Limam A. (2006), AGIR (2013)
MPA 02	Zona C	Partially protected	6.4	Tourism: bathing/trampl ing	Number of people (nb/year)	1200	expert opinion	low	Nibani H. (2010); AGIR (2013)
MPA 02	Zona C	Partially protected	6.4	Tourism: commercial boating	Number of commercial touristic boats (nb/year)	0	data	high	Nibani H. (2010), AGIR (2013)
MPA 02	Zona C	Partially protected	6.4	Tourism: private boating	Number of private boats (nb/year)	50	expert opinion	low	Nibani H. (2010), AGIR (2013)
MPA 02	Zona C	Partially protected	6.4	Tourism: scuba-diving	Number of dives (nb/year)	850	data	medium	Nibani H. (2010), AGIR (2013)

MPA 02	Zona C	Partially protected	6.4	Trawlers/purse-seiners	Number of boats (nb/year)	0	data	high	Franzosini C. & Limam A. (2006)
MPA 02	Outside	Outside	183.7	Artisanal fishing	Number of boats (nb/year)	416	data	medium	Franzosini C. & Limam A. (2006)
MPA 02	Outside	Outside	183.7	Recreational fishing: hook and line	Number of people (nb/year)	2250	expert opinion	low	expert opinion
MPA 02	Outside	Outside	183.7	Recreational fishing: spearfishing	Number of people (nb/year)	900	expert opinion	low	expert opinion
MPA 02	Outside	Outside	183.7	Tourism: bathing/trampl ing	Number of people (nb/year)	4500	expert opinion	low	expert opinion
MPA 02	Outside	Outside	183.7	Tourism: commercial boating	Number of commercial touristic boats (nb/year)	0	data	high	Nibani H. (2010); AGIR (2013)
MPA 02	Outside	Outside	183.7	Tourism: private boating	Number of private boats (nb/year)	500	expert opinion	low	expert opinion
MPA 02	Outside	Outside	183.7	Tourism: scuba-diving	Number of dives (nb/year)	1500	expert opinion	low	expert opinion
MPA 02	Outside	Outside	631.53	Trawlers/purse-seiners	Number of boats (nb/year)	22	data	medium	Franzosini C. & Limam A. (2006), AGIR (2013)
MPA 03	Zone de protection renforcée	No-take	0.65	Artisanal fishing	Number of boats (nb/year)	0	data	high	MPA regulations
MPA 03	Zone de protection renforcée	No-take	0.65	Recreational fishing: hook and line	Number of people (nb/year)	0	data	high	MPA regulations
MPA 03	Zone de protection renforcée	No-take	0.65	Recreational fishing: spearfishing	Number of people (nb/year)	0	data	high	MPA regulations
MPA 03	Zone de protection renforcée	No-take	0.65	Tourism: bathing/trampl ing	Number of people (nb/year)	2000	expert opinion	low	Estimated: 5% of the total number of snorkelers in the Reserve

MPA 03	Zone de protection renforcée	No-take	0.65	Tourism: commercial boating	Number of commercial touristic boats (nb/year)	0	data	high	MPA regulations
MPA 03	Zone de protection renforcée	No-take	0.65	Tourism: private boating	Number of private boats (nb/year)	500	expert opinion	low	Estimated
MPA 03	Zone de protection renforcée	No-take	0.65	Tourism: scuba-diving	Number of dives (nb/year)	0	data	high	MPA regulations
MPA 03	Zone de protection renforcée	No-take	0.65	Trawlers/purse-seiners	Number of boats (nb/year)	0	data	high	MPA regulations
MPA 03	Zone de protection partielle	Partially protected	5.85	Artisanal fishing	Number of boats (nb/year)	15	data	medium	number of fishing licenses
MPA 03	Zone de protection partielle	Partially protected	5.85	Recreational fishing: hook and line	Number of people (nb/year)	1549	data	high	number of licenses
MPA 03	Zone de protection partielle	Partially protected	5.85	Recreational fishing: spearfishing	Number of people (nb/year)	0	data	high	MPA regulations
MPA 03	Zone de protection partielle	Partially protected	5.85	Tourism: bathing/trampl ing	Number of people (nb/year)	35857	data	medium	Extrapolate value based on the underwater trail of Peyrefite (25 100 snorkelers per year) representing 70% of the total number of snorkelers
MPA 03	Zone de protection partielle	Partially protected	5.85	Tourism: commercial boating	Number of commercial touristic boats (nb/year)	0	data	high	Estimation based on regular sailing survey (30 boats on the reserve per day)
MPA 03	Zone de protection partielle	Partially protected	5.85	Tourism: private boating	Number of private boats (nb/year)	1830	expert opinion	medium	Estimated
MPA 03	Zone de protection partielle	Partially protected	5.85	Tourism: scuba-diving	Number of dives (nb/year)	21862	data	medium	Only 10 scuba-diving center (on 18) returned their log-book in 2013

MPA 03	Zone de protection partielle	Partially protected	5.85	Trawlers/purse-seiners	Number of boats (nb/year)	0	data	high	MPA regulations
MPA 03	Outside	Outside	55.33	Artisanal fishing	Number of boats (nb/year)	40	expert opinion	medium	Number of surrounding harbors Licenses but no data on Spanish fleet (probably more: between 28 and 50)
MPA 03	Outside	Outside	55.33	Recreational fishing: hook and line	Number of people (nb/year)	6200	expert opinion	low	Estimation based on 100 fishing trip per day in summer but no real data on spanish situation
MPA 03	Outside	Outside	55.33	Recreational fishing: spearfishing	Number of people (nb/year)	620	expert opinion	low	Estimation based on 10% of the recreational activity is represented by spearfishes
MPA 03	Outside	Outside	55.33	Tourism: bathing/trampl ing	Number of people (nb/year)	500000	expert opinion	low	Estimation data based on sand beach areas: Racou, Porteils, Collioure, Port Vendres,Paulille, Les Elmes, Banyuls, Aloes, Cerbère, PortBou, Lanca
MPA 03	Outside	Outside	55.33	Tourism: commercial boating	Number of commercial touristic boats (nb/year)	26	data	medium	in 2008, 13 cruise boats, 3 tankers (117 trips) and 10 bottom glass boats
MPA 03	Outside	Outside	55.33	Tourism: private boating	Number of private boats (nb/year)	1830	data	high	Data from Google Earth : 1830 = number of mooring places in different harbors located inside the "outside zone" (Collioure, Port Vendres, Banyuls, Cerbère, PortBou, Colera, Llança)
MPA 03	Outside	Outside	55.33	Tourism: scuba-diving	Number of dives (nb/year)	64000	data	high	Data from the Golf of Lion natural marine park; more expand than the outside zone but most of diving spots are located in the rocky coast
MPA 03	Outside	Outside	194.02	Trawlers/purse-seiners	Number of boats (nb/year)	10	expert opinion	medium	Number of Licences in Port Vendre but no data on Spanish

									fleet (probably more : between 5 and 15)
MPA 04	Inside	Partially protected	2.286	Artisanal fishing	Number of boats (nb/year)	8	data	medium	Registry of fishing vessels held by Ministry
MPA 04	Inside	Partially protected	2.286	Recreational fishing: hook and line	Number of people (nb/year)	30	expert opinion	low	Estimated
MPA 04	Inside	Partially protected	2.286	Recreational fishing: spearfishing	Number of people (nb/year)	2873	data	low	Registry of spear gun licenses held by Malta Police Force
MPA 04	Inside	Partially protected	2.286	Tourism: bathing/trampl ing	Number of people (nb/year)	5000	data	low	Estimated based on logs kept by Malta Tourism Authority beach supervisors
MPA 04	Inside	Partially protected	2.286	Tourism: commercial boating	Number of commercial touristic boats (nb/year)	17	data	high	List of licensed commercial vessels held by Transport Malta
MPA 04	Inside	Partially protected	2.286	Tourism: private boating	Number of private boats (nb/year)	NA		low	NA
MPA 04	Inside	Partially protected	2.286	Tourism: scuba-diving	Number of dives (nb/year)	10000	expert opinion	low	Estimated
MPA 04	Inside	Partially protected	2.286	Trawlers/purse-seiners	Number of boats (nb/year)	0	data	high	Registry of fishing vessels held by Ministry
MPA 04	Outside	Outside	24.75	Artisanal fishing	Number of boats (nb/year)	89	data	medium	Registry of fishing vessels held by Ministry
MPA 04	Outside	Outside	24.75	Recreational fishing: hook and line	Number of people (nb/year)	400	expert opinion	low	Estimated
MPA 04	Outside	Outside	24.75	Recreational fishing: spearfishing	Number of people (nb/year)	2873	data	low	Registry of spear gun licenses held by Malta Police Force
MPA 04	Outside	Outside	24.75	Tourism: bathing/trampl ing	Number of people (nb/year)	60000	data	low	Estimated based on logs kept by Malta Tourism Authority beach supervisors
MPA 04	Outside	Outside	24.75	Tourism: commercial boating	Number of commercial	30	expert opinion	low	Estimated

					touristic boats (nb/year)				
MPA 04	Outside	Outside	24.75	Tourism: private boating	Number of private boats (nb/year)	NA		low	NA
MPA 04	Outside	Outside	24.75	Tourism: scuba-diving	Number of dives (nb/year)	3500	expert opinion	low	Estimated
MPA 04	Outside	Outside	347.66	Trawlers/purse-seiners	Number of boats (nb/year)	39	data	high	Registry of fishing vessels held by Ministry
MPA 05	Integral	No-take	19	Artisanal fishing	Number of boats (nb/year)	0	data	high	MPA regulations
MPA 05	Integral	No-take	19	Recreational fishing: hook and line	Number of people (nb/year)	0	data	high	MPA regulations
MPA 05	Integral	No-take	19	Recreational fishing: spearfishing	Number of people (nb/year)	0	data	high	MPA regulations
MPA 05	Integral	No-take	19	Tourism: bathing/trampl ing	Number of people (nb/year)	1000	data	medium	Internal MPA reporting
MPA 05	Integral	No-take	19	Tourism: commercial boating	Number of commercial touristic boats (nb/year)	5	data	high	Harbour Authorities
MPA 05	Integral	No-take	19	Tourism: private boating	Number of private boats (nb/year)	150	data	high	Internal MPA reporting
MPA 05	Integral	No-take	19	Tourism: scuba-diving	Number of dives (nb/year)	0	data	high	MPA regulations
MPA 05	Integral	No-take	19	Trawlers/purse-seiners	Number of boats (nb/year)	0	data	high	MPA regulations
MPA 05	Amortiguación	Partially protected	93.86	Artisanal fishing	Number of boats (nb/year)	50	data	high	MPA regulations
MPA 05	Amortiguación	Partially protected	93.86	Recreational fishing: hook and line	Number of people (nb/year)	685	data	high	Internal MPA reporting

MPA 05	Amortiguación	Partially protected	93.86	Recreational fishing: spearfishing	Number of people (nb/year)	64	data	high	Regional number of Licenses
MPA 05	Amortiguación	Partially protected	93.86	Tourism: bathing/trampl ing	Number of people (nb/year)	180000	data	medium	Internal MPA reporting
MPA 05	Amortiguación	Partially protected	93.86	Tourism: commercial boating	Number of commercial touristic boats (nb/year)	10	data	high	Internal MPA reporting
MPA 05	Amortiguación	Partially protected	93.86	Tourism: private boating	Number of private boats (nb/year)	2800	data	medium	Internal MPA reporting
MPA 05	Amortiguación	Partially protected	93.86	Tourism: scuba-diving	Number of dives (nb/year)	4222	data	high	Annual Report Regional Tourism Department
MPA 05	Amortiguación	Partially protected	93.86	Trawlers/purse-seiners	Number of boats (nb/year)	0	data	high	MPA regulations
MPA 05	Exterior	Outside	156.25	Artisanal fishing	Number of boats (nb/year)	64	data	high	Regional Boat Census
MPA 05	Exterior	Outside	156.25	Recreational fishing: hook and line	Number of people (nb/year)	7560	data	medium	Regional number of Licenses
MPA 05	Exterior	Outside	156.25	Recreational fishing: spearfishing	Number of people (nb/year)	380	data	medium	Regional number of Licenses
MPA 05	Exterior	Outside	156.25	Tourism: bathing/trampl ing	Number of people (nb/year)	340000	expert opinion	low	Estimated
MPA 05	Exterior	Outside	156.25	Tourism: commercial boating	Number of commercial touristic boats (nb/year)	50	data	low	Annual Report Regional Tourism Department
MPA 05	Exterior	Outside	156.25	Tourism: private boating	Number of private boats (nb/year)	7000	data	low	Annual Report Regional Tourism Department
MPA 05	Exterior	Outside	156.25	Tourism: scuba-diving	Number of dives (nb/year)	10000	expert opinion	low	Estimated

MPA 05	Exterior	Outside	684.03	Trawlers/purse-seiners	Number of boats (nb/year)	6	data	high	Regional Boat Census
MPA 06	Integral	No-take	0.431	Artisanal fishing	Number of boats (nb/year)	0	data	medium	MPA regulations
MPA 06	Integral	No-take	0.431	Recreational fishing: hook and line	Number of people (nb/year)	0	data	medium	MPA regulations
MPA 06	Integral	No-take	0.431	Recreational fishing: spearfishing	Number of people (nb/year)	0	data	medium	MPA regulations
MPA 06	Integral	No-take	0.431	Tourism: bathing/trampl ing	Number of people (nb/year)	150000	data	medium	Allowed. Permit not required.Data from MPA wardens for 2013.
MPA 06	Integral	No-take	0.431	Tourism: commercial boating	Number of commercial touristic boats (nb/year)	11	data	medium	Allowed. Data from MPA wardens for 2013.
MPA 06	Integral	No-take	0.431	Tourism: private boating	Number of private boats (nb/year)	1193	data	medium	Allowed. Data from MPA wardens for 2013.
MPA 06	Integral	No-take	0.431	Tourism: scuba-diving	Number of dives (nb/year)	0	data	medium	MPA regulations
MPA 06	Integral	No-take	0.431	Trawlers/purse-seiners	Number of boats (nb/year)	0	data	medium	MPA regulations
MPA 06	Buffer	No-take	2.0718	Artisanal fishing	Number of boats (nb/year)	0	data	medium	MPA regulations
MPA 06	Buffer	No-take	2.0718	Recreational fishing: hook and line	Number of people (nb/year)	0	data	medium	MPA regulations
MPA 06	Buffer	No-take	2.0718	Recreational fishing: spearfishing	Number of people (nb/year)	0	data	medium	MPA regulations
MPA 06	Buffer	No-take	2.0718	Tourism: bathing/trampl ing	Number of people (nb/year)	150000	data	medium	Allowed. Permit not required. Data from MPA wardens for 2013.
MPA 06	Buffer	No-take	2.0718	Tourism: commercial boating	Number of commercial	36	data	medium	Allowed. Permit not required. Data from MPA wardens for 2013.

					touristic boats (nb/year)				
MPA 06	Buffer	No-take	2.0718	Tourism: private boating	Number of private boats (nb/year)	1232	data	medium	Allowed. Data from MPA wardens for 2013.
MPA 06	Buffer	No-take	2.0718	Tourism: scuba-diving	Number of dives (nb/year)	0	data	low	Allowed. Data from MPA wardens for 2013.
MPA 06	Buffer	No-take	2.0718	Trawlers/purse-seiners	Number of boats (nb/year)	0	data	medium	MPA regulations
MPA 06	Exterior	Outside	36.43	Artisanal fishing	Number of boats (nb/year)	6	data	high	Allowed. Data from MPA wardens for 2013.
MPA 06	Exterior	Outside	36.43	Recreational fishing: hook and line	Number of people (nb/year)	15	data	medium	Allowed. Data from MPA wardens for 2013.
MPA 06	Exterior	Outside	36.43	Recreational fishing: spearfishing	Number of people (nb/year)	0	data	medium	Allowed. Data from MPA wardens for 2013.
MPA 06	Exterior	Outside	36.43	Tourism: bathing/trampl ing	Number of people (nb/year)	150000	expert opinion	low	Estimated (Permit not needed. Unknown.)
MPA 06	Exterior	Outside	36.43	Tourism: commercial boating	Number of commercial touristic boats (nb/year)	215	data	medium	Allowed. Data from MPA wardens for 2013.
MPA 06	Exterior	Outside	36.43	Tourism: private boating	Number of private boats (nb/year)	124	data	medium	Allowed. Data from MPA wardens for 2013.
MPA 06	Exterior	Outside	36.43	Tourism: scuba-diving	Number of dives (nb/year)	1232	expert opinion	low	Permit not needed. Unknown but high.
MPA 06	Exterior	Outside	196.48	Trawlers/purse-seiners	Number of boats (nb/year)	24	data	high	Allowed. Data from MPA wardens for 2013.
MPA 07	Zone A	No-take	31.24	Artisanal fishing	Number of boats (nb/year)	0	data	high	MPA regulations
MPA 07	Zone A	No-take	31.24	Recreational fishing: hook and line	Number of people (nb/year)	0	data	high	MPA regulations

MPA 07	Zone A	No-take	31.24	Recreational fishing: spearfishing	Number of people (nb/year)	0	data	high	MPA regulations
MPA 07	Zone A	No-take	31.24	Tourism: bathing/trampl ing	Number of people (nb/year)	131516	data	high	Total no. of visitors for 2013 on two main islands (only around 1/3 are bathing)
MPA 07	Zone A	No-take	31.24	Tourism: commercial boating	Number of commercial touristic boats (nb/year)	3	data	high	Only the boat from NP, and two other boats have the permission to take tourists to the island (the boat from NP Brijuni makes from 4 (winter) to 14 (summer) trips per day, and other two boats 1 trip per day during the summer)
MPA 07	Zone A	No-take	31.24	Tourism: private boating	Number of private boats (nb/year)	2500	data	low	Total no. of boats moored in the port of the main island for 2013 is 1830.
MPA 07	Zone A	No-take	31.24	Tourism: scuba-diving	Number of dives (nb/year)	1000	expert opinion	medium	Estimated
MPA 07	Zone A	No-take	31.24	Trawlers/purse-seiners	Number of boats (nb/year)	0	data	high	MPA regulations
MPA 07	Zone B	Partially protected	2.77	Artisanal fishing	Number of boats (nb/year)	0	data	high	MPA regulations
MPA 07	Zone B	Partially protected	2.77	Recreational fishing: hook and line	Number of people (nb/year)	250	expert opinion	medium	There are two types of permits: monthly and yearly. No. of issued monthly permits for 2013. is 1077 and of yearly permis 8. Only 2 kg of fish is allowed per one person per day for local citizens of three surrounding municipalities. Only traditional (recreational) fishing is allowed for dawn to dusk. Value in the table is calculated presuming that same persons are buying monthly permits 5 months during the year and based on

									the counted small boats in surrounding ports.
MPA 07	Zone B	Partially protected	2.77	Recreational fishing: spearfishing	Number of people (nb/year)	0	data	high	MPA regulations
MPA 07	Zone B	Partially protected	2.77	Tourism: bathing/trampl ing	Number of people (nb/year)	35000	expert opinion	medium	On one of the two islands (Jerolim) is obligated ticket buying (17370 visitors for 2013), but on the second island visiting is free of charge. It is presumed that around same number of visitor visit the second island (Kozada).
MPA 07	Zone B	Partially protected	2.77	Tourism: commercial boating	Number of commercial touristic boats (nb/year)	20	expert opinion	medium	Around 20 commercial boats take visitors to those 2 islands.
MPA 07	Zone B	Partially protected	2.77	Tourism: private boating	Number of private boats (nb/year)	1000	expert opinion	low	Around 1000 boats are counted on the map in surrounding ports.
MPA 07	Zone B	Partially protected	2.77	Tourism: scuba-diving	Number of dives (nb/year)	100	expert opinion	medium	1 spots in this zone 2 where diving is allowed (with permit). Total number of dives in zone 1 and 2 for 2013 is 497 and for 2012 is 350. So the average number of dives per year is around 450 - 400 for zone 1 and 50 for zone 2.
MPA 07	Zone B	Partially protected	2.77	Trawlers/purse-seiners	Number of boats (nb/year)	0	data	high	MPA regulations
MPA 07	Outside	Outside	68.1	Artisanal fishing	Number of boats (nb/year)	50	expert opinion	low	Very rough estimation
MPA 07	Outside	Outside	68.1	Recreational fishing: hook and line	Number of people (nb/year)	1000	expert opinion	low	In this zone there is around 20 fishing organizations
MPA 07	Outside	Outside	68.1	Recreational fishing: spearfishing	Number of people (nb/year)	100	expert opinion	low	The assumption is that 10% of persons are practicing spearfishing

MPA 07	Outside	Outside	68.1	Tourism: bathing/trampl ing	Number of people (nb/year)	400000	expert opinion	low	In this zone lives around 70.000 local citizens and in 2013 in this zone has arrived 430.000 tourists
MPA 07	Outside	Outside	68.1	Tourism: commercial boating	Number of commercial touristic boats (nb/year)	2000	expert opinion	low	Most of commercial touristic boats are sailing boats for rent (other commercial boats around 100)
MPA 07	Outside	Outside	68.1	Tourism: private boating	Number of private boats (nb/year)	5000	expert opinion	low	In this zone around 4500 boats were counted in big and small ports on Google map
MPA 07	Outside	Outside	68.1	Tourism: scuba-diving	Number of dives (nb/year)	5000	expert opinion	low	In this zone there is around 20 diving centers with many diving sites
MPA 07	Outside	Outside	398.78	Trawlers/purse -seiners	Number of boats (nb/year)	20	expert opinion	low	Very rough estimation
MPA 08	Peripheral zone	Partially protected	31.944	Artisanal fishing	Number of boats (nb/year)	5	data	medium	Internal MPA reporting
MPA 08	Peripheral zone	Partially protected	31.944	Recreational fishing: hook and line	Number of people (nb/year)	0	data	high	MPA regulations
MPA 08	Peripheral zone	Partially protected	31.944	Recreational fishing: spearfishing	Number of people (nb/year)	0	data	high	MPA regulations
MPA 08	Peripheral zone	Partially protected	31.944	Tourism: bathing/trampl ing	Number of people (nb/year)	0	data	medium	MPA regulations
MPA 08	Peripheral zone	Partially protected	31.944	Tourism: commercial boating	Number of commercial touristic boats (nb/year)	200	expert opinion	medium	Internal MPA reporting
MPA 08	Peripheral zone	Partially protected	31.944	Tourism: private boating	Number of private boats (nb/year)	500	expert opinion	medium	Internal MPA reporting
MPA 08	Peripheral zone	Partially protected	31.944	Tourism: scuba-diving	Number of dives (nb/year)	7000	data	medium	Internal MPA reporting
MPA 08	Peripheral zone	Partially protected	31.944	Trawlers/purse -seiners	Number of boats (nb/year)	0	data	high	Internal MPA reporting

MPA 08	Zone A	Partially protected	8.014	Artisanal fishing	Number of boats (nb/year)	9.93	data	high	Internal MPA reporting
MPA 08	Zone A	Partially protected	8.014	Recreational fishing: hook and line	Number of people (nb/year)	0	data	high	MPA regulations
MPA 08	Zone A	Partially protected	8.014	Recreational fishing: spearfishing	Number of people (nb/year)	0	data	high	MPA regulations
MPA 08	Zone A	Partially protected	8.014	Tourism: bathing/trampl ing	Number of people (nb/year)	180000	data	medium	MPA regulations
MPA 08	Zone A	Partially protected	8.014	Tourism: commercial boating	Number of commercial touristic boats (nb/year)	0		low	Internal MPA reporting
MPA 08	Zone A	Partially protected	8.014	Tourism: private boating	Number of private boats (nb/year)	0		low	Internal MPA reporting
MPA 08	Zone A	Partially protected	8.014	Tourism: scuba-diving	Number of dives (nb/year)	0	data	high	Internal MPA reporting
MPA 08	Zone A	Partially protected	8.014	Trawlers/purse-seiners	Number of boats (nb/year)	0	data	high	Internal MPA reporting
MPA 08	Zone B	Partially protected	35.945	Artisanal fishing	Number of boats (nb/year)	31.5	data	high	Internal MPA reporting
MPA 08	Zone B	Partially protected	35.945	Recreational fishing: hook and line	Number of people (nb/year)	0	data	high	MPA regulations
MPA 08	Zone B	Partially protected	35.945	Recreational fishing: spearfishing	Number of people (nb/year)	0	data	high	MPA regulations
MPA 08	Zone B	Partially protected	35.945	Tourism: bathing/trampl ing	Number of people (nb/year)	310000	data	medium	MPA regulations
MPA 08	Zone B	Partially protected	35.945	Tourism: commercial boating	Number of commercial touristic boats (nb/year)	200	expert opinion	medium	Internal MPA reporting

MPA 08	Zone B	Partially protected	35.945	Tourism: private boating	Number of private boats (nb/year)	500	expert opinion	medium	Internal MPA reporting
MPA 08	Zone B	Partially protected	35.945	Tourism: scuba-diving	Number of dives (nb/year)	3000	data	medium	Internal MPA reporting
MPA 08	Zone B	Partially protected	35.945	Trawlers/purse-seiners	Number of boats (nb/year)	0	data	high	Internal MPA reporting
MPA 08	Zone C	Partially protected	7.404	Artisanal fishing	Number of boats (nb/year)	8.7	data	high	Internal MPA reporting
MPA 08	Zone C	Partially protected	7.404	Recreational fishing: hook and line	Number of people (nb/year)	0	data	high	MPA regulations
MPA 08	Zone C	Partially protected	7.404	Recreational fishing: spearfishing	Number of people (nb/year)	0	data	high	MPA regulations
MPA 08	Zone C	Partially protected	7.404	Tourism: bathing/trampl ing	Number of people (nb/year)	200000	expert opinion	medium	MPA regulations
MPA 08	Zone C	Partially protected	7.404	Tourism: commercial boating	Number of commercial touristic boats (nb/year)	200	expert opinion	medium	Internal MPA reporting
MPA 08	Zone C	Partially protected	7.404	Tourism: private boating	Number of private boats (nb/year)	500	expert opinion	medium	Internal MPA reporting
MPA 08	Zone C	Partially protected	7.404	Tourism: scuba-diving	Number of dives (nb/year)	0	data	high	Internal MPA reporting
MPA 08	Zone C	Partially protected	7.404	Trawlers/purse-seiners	Number of boats (nb/year)	0	data	high	Internal MPA reporting
MPA 08	Outside	Outside	171.12	Artisanal fishing	Number of boats (nb/year)	40	data	medium	Internal MPA reporting
MPA 08	Outside	Outside	171.12	Recreational fishing: hook and line	Number of people (nb/year)	0	expert opinion	high	Estimated
MPA 08	Outside	Outside	171.12	Recreational fishing: spearfishing	Number of people (nb/year)	500	expert opinion	low	Estimated

MPA 08	Outside	Outside	171.12	Tourism: bathing/trampl ing	Number of people (nb/year)	500000	expert opinion	low	Estimated
MPA 08	Outside	Outside	171.12	Tourism: commercial boating	Number of commercial touristic boats (nb/year)	10	expert opinion	low	Estimated
MPA 08	Outside	Outside	171.12	Tourism: private boating	Number of private boats (nb/year)	400	expert opinion	low	Estimated
MPA 08	Outside	Outside	171.12	Tourism: scuba-diving	Number of dives (nb/year)	1000	expert opinion	low	Estimated
MPA 08	Outside	Outside	1050.33	Trawlers/purse -seiners	Number of boats (nb/year)	10	expert opinion	high	Estimated
MPA 09	Reserva Natural Integral des Encallador a	No-entry	0.02	Artisanal fishing	Number of boats (nb/year)	0	data	high	MPA regulations
MPA 09	Reserva Natural Integral des Encallador a	No-entry	0.02	Recreational fishing: hook and line	Number of people (nb/year)	0	data	high	MPA regulations
MPA 09	Reserva Natural Integral des Encallador a	No-entry	0.02	Recreational fishing: spearfishing	Number of people (nb/year)	0	data	high	MPA regulations
MPA 09	Reserva Natural Integral des Encallador a	No-entry	0.02	Tourism: bathing/trampl ing	Number of people (nb/year)	0	data	high	MPA regulations

MPA 09	Reserva Natural Integral des Encalladora	No-entry	0.02	Tourism: commercial boating	Number of commercial touristic boats (nb/year)	0	data	high	MPA regulations
MPA 09	Reserva Natural Integral des Encalladora	No-entry	0.02	Tourism: private boating	Number of private boats (nb/year)	0	data	high	MPA regulations
MPA 09	Reserva Natural Integral des Encalladora	No-entry	0.02	Tourism: scuba-diving	Number of dives (nb/year)	0	data	high	MPA regulations
MPA 09	Reserva Natural Integral des Encalladora	No-entry	0.02	Trawlers/purse-seiners	Number of boats (nb/year)	0	data	high	MPA regulations
MPA 09	Reserva Natural Parcial dels Farallons	Partially protected	2.6	Artisanal fishing	Number of boats (nb/year)	12	data	high	N° of boats actually fishing here (N° of boats in the nearby ports); http://parcsnaturals.gencat.cat/ca/cap-creus/coneix-nos/centre_de_documentacio/pnat_cc_fons_documental/biblioteca_digital/medi_mari/
MPA 09	Reserva Natural Parcial dels Farallons	Partially protected	2.6	Recreational fishing: hook and line	Number of people (nb/year)	24	data	medium	http://parcsnaturals.gencat.cat/ca/cap-creus/coneix-nos/centre_de_documentacio/pnat_cc_fons_documental/biblioteca_digital/medi_mari/

MPA 09	Reserva Natural Parcial dels Farallons	Partially protected	2.6	Recreational fishing: spearfishing	Number of people (nb/year)	0	data	high	MPA regulations
MPA 09	Reserva Natural Parcial dels Farallons	Partially protected	2.6	Tourism: bathing/trampl ing	Number of people (nb/year)	2972	data	medium	http://catalegclassicbeg.cultura.gencat.cat/search~S50*cat
MPA 09	Reserva Natural Parcial dels Farallons	Partially protected	2.6	Tourism: commercial boating	Number of commercial touristic boats (nb/year)	14	data	high	http://catalegclassicbeg.cultura.gencat.cat/search~S50*cat
MPA 09	Reserva Natural Parcial dels Farallons	Partially protected	2.6	Tourism: private boating	Number of private boats (nb/year)	2362	data	medium	http://catalegclassicbeg.cultura.gencat.cat/search~S50*cat
MPA 09	Reserva Natural Parcial dels Farallons	Partially protected	2.6	Tourism: scuba-diving	Number of dives (nb/year)	30100	data	medium	http://catalegclassicbeg.cultura.gencat.cat/search~S50*cat
MPA 09	Reserva Natural Parcial dels Farallons	Partially protected	2.6	Trawlers/purse-seiners	Number of boats (nb/year)	0	data	high	MPA regulations
MPA 09	Reserva Natural Parcial del Cap de Creus	Partially protected	2.9	Artisanal fishing	Number of boats (nb/year)	12	data	high	N° of boats actually fishing here (N° of boats in the nearby ports); http://catalegclassicbeg.cultura.gencat.cat/search~S50*cat
MPA 09	Reserva Natural Parcial del Cap de Creus	Partially protected	2.9	Recreational fishing: hook and line	Number of people (nb/year)	121	data	medium	http://catalegclassicbeg.cultura.gencat.cat/search~S50*cat
MPA 09	Reserva Natural Parcial del	Partially protected	2.9	Recreational fishing: spearfishing	Number of people (nb/year)	0	data	high	MPA regulations

	Cap de Creus								
MPA 09	Reserva Natural Parcial del Cap de Creus	Partially protected	2.9	Tourism: bathing/trampl ing	Number of people (nb/year)	6092	data	medium	https://www.idescat.cat/
MPA 09	Reserva Natural Parcial del Cap de Creus	Partially protected	2.9	Tourism: commercial boating	Number of commercial touristic boats (nb/year)	14	data	high	http://es.costabrava.org/a-donde-ir/transportes/cruceros-maritimos
MPA 09	Reserva Natural Parcial del Cap de Creus	Partially protected	2.9	Tourism: private boating	Number of private boats (nb/year)	4841	data	medium	http://ports.gencat.cat/es/
MPA 09	Reserva Natural Parcial del Cap de Creus	Partially protected	2.9	Tourism: scuba-diving	Number of dives (nb/year)	4900	data	medium	http://nautica.gencat.cat/ca/bus-seig-esbarjo/centres_immersio/
MPA 09	Reserva Natural Parcial del Cap de Creus	Partially protected	2.9	Trawlers/purse-seiners	Number of boats (nb/year)	0	data	high	MPA regulations
MPA 09	Reserva Natural Parcial del Cap Norfeu	Partially protected	2.7	Artisanal fishing	Number of boats (nb/year)	12	data	high	N° of boats actually fishing here (N° of boats in the nearby ports); http://agricultura.gencat.cat/ca/ambits/pesca/dar_flota_pesquera/dar_estadistiques/dar_detall_flota_pesquera_per_ports/
MPA 09	Reserva Natural Parcial del	Partially protected	2.7	Recreational fishing: hook and line	Number of people (nb/year)	34	data	medium	http://parcsnaturals.gencat.cat/ca/cap-creus/coneix-nos/normativa_especifica/

	Cap Norfeu								
MPA 09	Reserva Natural Parcial del Cap Norfeu	Partially protected	2.7	Recreational fishing: spearfishing	Number of people (nb/year)	0	data	high	MPA regulations
MPA 09	Reserva Natural Parcial del Cap Norfeu	Partially protected	2.7	Tourism: bathing/trampl ing	Number of people (nb/year)	2229	data	medium	https://www.idescat.cat/
MPA 09	Reserva Natural Parcial del Cap Norfeu	Partially protected	2.7	Tourism: commercial boating	Number of commercial touristic boats (nb/year)	14	data	high	http://es.costabrava.org/a-donde-ir/transportes/cruceros-maritimos
MPA 09	Reserva Natural Parcial del Cap Norfeu	Partially protected	2.7	Tourism: private boating	Number of private boats (nb/year)	1771.2 76596	data	medium	http://ports.gencat.cat/es/
MPA 09	Reserva Natural Parcial del Cap Norfeu	Partially protected	2.7	Tourism: scuba-diving	Number of dives (nb/year)	4200	data	medium	http://nautica.gencat.cat/ca/bus-seig-esbarjo/centres_immersio/
MPA 09	Reserva Natural Parcial del Cap Norfeu	Partially protected	2.7	Trawlers/purse-seiners	Number of boats (nb/year)	0	data	high	MPA regulations
MPA 09	Parc Natural Cap Gros	Partially protected	7.1	Artisanal fishing	Number of boats (nb/year)	12	data	high	N° of boats actually fishing here (N° of boats in the nearby ports); http://parcsnaturals.gencat.cat/ca/cap-creus/coneix-nos/normativa_especifica/

MPA 09	Parc Natural Cap Gros	Partially protected	7.1	Recreational fishing: hook and line	Number of people (nb/year)	89	data	medium	http://parcsnaturals.gencat.cat/ca/cap-creus/coneix-nos/normativa_especifica/
MPA 09	Parc Natural Cap Gros	Partially protected	7.1	Recreational fishing: spearfishing	Number of people (nb/year)	17	data	high	http://parcsnaturals.gencat.cat/ca/cap-creus/coneix-nos/normativa_especifica/
MPA 09	Parc Natural Cap Gros	Partially protected	7.1	Tourism: bathing/trampl ing	Number of people (nb/year)	7429	data	medium	https://www.idescat.cat/
MPA 09	Parc Natural Cap Gros	Partially protected	7.1	Tourism: commercial boating	Number of commercial touristic boats (nb/year)	14	data	high	http://es.costabrava.org/a-donde-ir/transportes/cruceros-maritimos
MPA 09	Parc Natural Cap Gros	Partially protected	7.1	Tourism: private boating	Number of private boats (nb/year)	5904.2 55319	data	medium	http://ports.gencat.cat/es/
MPA 09	Parc Natural Cap Gros	Partially protected	7.1	Tourism: scuba-diving	Number of dives (nb/year)	7000	data	medium	http://nautica.gencat.cat/ca/bus-seig-esbarjo/centres_immersio/
MPA 09	Parc Natural Cap Gros	Partially protected	7.1	Trawlers/purse-seiners	Number of boats (nb/year)	0	data	high	MPA regulations
MPA 09	Parc Natural Cap de Creus	Partially protected	2.3	Artisanal fishing	Number of boats (nb/year)	12	data	high	N° of boats actually fishing here (N° of boats in the nearby ports); http://parcsnaturals.gencat.cat/ca/cap-creus/coneix-nos/normativa_especifica/
MPA 09	Parc Natural Cap de Creus	Partially protected	2.3	Recreational fishing: hook and line	Number of people (nb/year)	26	data	medium	http://parcsnaturals.gencat.cat/ca/cap-creus/coneix-nos/normativa_especifica/
MPA 09	Parc Natural Cap de Creus	Partially protected	2.3	Recreational fishing: spearfishing	Number of people (nb/year)	13	data	high	http://parcsnaturals.gencat.cat/ca/cap-creus/coneix-nos/normativa_especifica/

MPA 09	Parc Natural Cap de Creus	Partially protected	2.3	Tourism: bathing/trampl ing	Number of people (nb/year)	3269	data	medium	https://www.idescat.cat/
MPA 09	Parc Natural Cap de Creus	Partially protected	2.3	Tourism: commercial boating	Number of commercial touristic boats (nb/year)	14	data	high	http://es.costabrava.org/a-donde-ir/transportes/cruceros-maritimos
MPA 09	Parc Natural Cap de Creus	Partially protected	2.3	Tourism: private boating	Number of private boats (nb/year)	2597.8 7234	data	medium	http://ports.gencat.cat/es/
MPA 09	Parc Natural Cap de Creus	Partially protected	2.3	Tourism: scuba-diving	Number of dives (nb/year)	0	data	medium	http://nautica.gencat.cat/ca/bus-seig-esbarjo/centres_immersio/
MPA 09	Parc Natural Cap de Creus	Partially protected	2.3	Trawlers/purse-seiners	Number of boats (nb/year)	0	data	high	MPA regulations
MPA 09	arc Natural Cadaques	Partially protected	9.6	Artisanal fishing	Number of boats (nb/year)	12	data	high	Nº of boats actually fishing here (Nº of boats in the nearby ports); http://parcsnaturals.gencat.cat/ca/cap-creus/coneix-nos/normativa_especifica/
MPA 09	arc Natural Cadaques	Partially protected	9.6	Recreational fishing: hook and line	Number of people (nb/year)	149	data	medium	http://parcsnaturals.gencat.cat/ca/cap-creus/coneix-nos/centre_de_documentacio/pnat_cc_fons_documental/biblioteca_digital/medi_mari/
MPA 09	arc Natural Cadaques	Partially protected	9.6	Recreational fishing: spearfishing	Number of people (nb/year)	23	data	high	http://parcsnaturals.gencat.cat/ca/cap-creus/coneix-nos/centre_de_documentacio/pnat_cc_fons_documental/biblioteca_digital/medi_mari/

MPA 09	arc Natural Cadaques	Partially protected	9.6	Tourism: bathing/trampl ing	Number of people (nb/year)	15750	data	medium	https://www.idescat.cat/
MPA 09	arc Natural Cadaques	Partially protected	9.6	Tourism: commercial boating	Number of commercial touristic boats (nb/year)	14	data	high	http://es.costabrava.org/a-donde-ir/transportes/cruceros-maritimos
MPA 09	arc Natural Cadaques	Partially protected	9.6	Tourism: private boating	Number of private boats (nb/year)	12517.02128	data	medium	http://ports.gencat.cat/es/
MPA 09	arc Natural Cadaques	Partially protected	9.6	Tourism: scuba-diving	Number of dives (nb/year)	7000	data	medium	http://nautica.gencat.cat/ca/bus-seig-esbarjo/centres_immersio/
MPA 09	arc Natural Cadaques	Partially protected	9.6	Trawlers/purse-seiners	Number of boats (nb/year)	0	data	high	MPA regulations
MPA 09	Parc Natural Cap Norfeu	Partially protected	3.3	Artisanal fishing	Number of boats (nb/year)	12	data	high	N° of boats actually fishing here (N° of boats in the nearby ports); http://parcsnaturals.gencat.cat/ca/cap-creus/coneix-nos/normativa_especifica/
MPA 09	Parc Natural Cap Norfeu	Partially protected	3.3	Recreational fishing: hook and line	Number of people (nb/year)	180	data	medium	http://parcsnaturals.gencat.cat/ca/cap-creus/coneix-nos/centre_de_documentacio/pnat_cc_fons_documental/biblioteca_digital/medi_mari/
MPA 09	Parc Natural Cap Norfeu	Partially protected	3.3	Recreational fishing: spearfishing	Number of people (nb/year)	29	data	high	http://parcsnaturals.gencat.cat/ca/cap-creus/coneix-nos/centre_de_documentacio/pnat_cc_fons_documental/biblioteca_digital/medi_mari/
MPA 09	Parc Natural Cap Norfeu	Partially protected	3.3	Tourism: bathing/trampl ing	Number of people (nb/year)	18127	data	medium	https://www.idescat.cat/
MPA 09	Parc Natural Cap Norfeu	Partially protected	3.3	Tourism: commercial boating	Number of commercial touristic boats (nb/year)	14	data	high	http://es.costabrava.org/a-donde-ir/transportes/cruceros-maritimos

MPA 09	Parc Natural Cap Norfeu	Partially protected	3.3	Tourism: private boating	Number of private boats (nb/year)	14406.38298	data	medium	http://ports.gencat.cat/es/
MPA 09	Parc Natural Cap Norfeu	Partially protected	3.3	Tourism: scuba-diving	Number of dives (nb/year)	8400	data	medium	http://nautica.gencat.cat/ca/bus-seig-esbarjo/centres_immersio/
MPA 09	Parc Natural Cap Norfeu	Partially protected	3.3	Trawlers/purse-seiners	Number of boats (nb/year)	0	data	high	MPA regulations
MPA 09	Outside	Outside	76.52	Artisanal fishing	Number of boats (nb/year)	57	data	high	N° of boats in the nearby ports (Roses, Port de la Selva & Llançà); http://agricultura.gencat.cat/ca/ambits/pesca/dar_flota_pesquera/dar_estadistiques/dar_detall_flota_pesquera_per_ports/
MPA 09	Outside	Outside	76.52	Recreational fishing: hook and line	Number of people (nb/year)	600	expert opinion	low	Estimated
MPA 09	Outside	Outside	76.52	Recreational fishing: spearfishing	Number of people (nb/year)	60	expert opinion	low	Estimated (only rocy coasts have been taken into account)
MPA 09	Outside	Outside	76.52	Tourism: bathing/trampl ing	Number of people (nb/year)	650000	expert opinion	low	Including sandy beaches; https://www.idescat.cat/
MPA 09	Outside	Outside	76.52	Tourism: commercial boating	Number of commercial touristic boats (nb/year)	14	data	high	http://es.costabrava.org/a-donde-ir/transportes/cruceros-maritimos
MPA 09	Outside	Outside	76.52	Tourism: private boating	Number of private boats (nb/year)	10000	expert opinion	low	http://ports.gencat.cat/es/
MPA 09	Outside	Outside	76.52	Tourism: scuba-diving	Number of dives (nb/year)	150	expert opinion	low	http://nautica.gencat.cat/ca/bus-seig-esbarjo/centres_immersio/

MPA 09	Outside	Outside	557.97	Trawlers/purse-seiners	Number of boats (nb/year)	44	data	high	N° of boats in the nearby ports (Roses, Port de la Selva & Llançà); http://agricultura.gencat.cat/ca/ambits/pesca/dar_flota_pesquera/dar_estadistiques/dar_detall_flota_pesquera_per_ports/
MPA 10	Reserva Natural Parcial de les Illes Medes	No-take	1.003	Artisanal fishing	Number of boats (nb/year)	0	data	high	MPA regulations
MPA 10	Reserva Natural Parcial de les Illes Medes	No-take	1.003	Recreational fishing: hook and line	Number of people (nb/year)	0	data	high	MPA regulations
MPA 10	Reserva Natural Parcial de les Illes Medes	No-take	1.003	Recreational fishing: spearfishing	Number of people (nb/year)	0	data	high	MPA regulations
MPA 10	Reserva Natural Parcial de les Illes Medes	No-take	1.003	Tourism: bathing/trampl ing	Number of people (nb/year)	25000	data	medium	Estimated from https://www.idescat.cat/
MPA 10	Reserva Natural Parcial de les Illes Medes	No-take	1.003	Tourism: commercial boating	Number of commercial touristic boats (nb/year)	17	data	high	Official data (2011); http://es.costabrava.org/a-donde-ir/transportes/cruceros-maritimos
MPA 10	Reserva Natural Parcial de les Illes Medes	No-take	1.003	Tourism: private boating	Number of private boats (nb/year)	17000	expert opinion	low	Estimated from http://ports.gencat.cat/es/

MPA 10	Reserva Natural Parcial de les Illes Medes	No-take	1.003	Tourism: scuba-diving	Number of dives (nb/year)	67000	data	medium	Official data (2011); http://parcsnaturals.gencat.cat/ca/illes-medes/coneixeu-nos/normativa_especifica/
MPA 10	Reserva Natural Parcial de les Illes Medes	No-take	1.003	Trawlers/purse-seiners	Number of boats (nb/year)	0	data	high	MPA regulations
MPA 10	Zona Perifirica de la RNP marina	Partially protected	4.79	Artisanal fishing	Number of boats (nb/year)	15	data	high	Official data http://parcsnaturals.gencat.cat/ca/illes-medes/coneixeu-nos/normativa_especifica/
MPA 10	Zona Perifirica de la RNP marina	Partially protected	4.79	Recreational fishing: hook and line	Number of people (nb/year)	950	data	medium	Font T., Lloret J., Pianté C. 2012. Recreational fishing within Marine Protected Areas in the Mediterranean. MedPAN North Project. WWFFrance.
MPA 10	Zona Perifirica de la RNP marina	Partially protected	4.79	Recreational fishing: spearfishing	Number of people (nb/year)	0	data	medium	Font T., Lloret J., Pianté C. 2012. Recreational fishing within Marine Protected Areas in the Mediterranean. MedPAN North Project. WWFFrance.
MPA 10	Zona Perifirica de la RNP marina	Partially protected	4.79	Tourism: bathing/trampl ing	Number of people (nb/year)	1000	expert opinion	low	Estimated from https://www.idescat.cat/
MPA 10	Zona Perifirica de la RNP marina	Partially protected	4.79	Tourism: commercial boating	Number of commercial touristic boats (nb/year)	17	data	high	http://es.costabrava.org/a-donde-ir/transportes/cruceros-maritimos
MPA 10	Zona Perifirica de la RNP marina	Partially protected	4.79	Tourism: private boating	Number of private boats (nb/year)	500	expert opinion	medium	Estimated from http://ports.gencat.cat/es/

MPA 10	Zona Perifirica de la RNP marina	Partially protected	4.79	Tourism: scuba-diving	Number of dives (nb/year)	75	expert opinion	low	Estimated from http://nautica.gencat.cat/ca/bus-seig-esbarjo/centres_immersio/
MPA 10	Zona Perifirica de la RNP marina	Partially protected	4.79	Trawlers/purse-seiners	Number of boats (nb/year)	0	data	high	http://agricultura.gencat.cat/ca/ambits/pesca/dar_flota_pesquera/dar_estadistiques/dar_detall_flota_pesquera_per_ports/
MPA 10	Parc Natural Mari	Partially protected	9.4	Artisanal fishing	Number of boats (nb/year)	35	data	high	estimated from Secanell (2011)
MPA 10	Parc Natural Mari	Partially protected	9.4	Recreational fishing: hook and line	Number of people (nb/year)	950	data	medium	Font et al. (2012)
MPA 10	Parc Natural Mari	Partially protected	9.4	Recreational fishing: spearfishing	Number of people (nb/year)	95	data	medium	Font et al. (2012)
MPA 10	Parc Natural Mari	Partially protected	9.4	Tourism: bathing/trampl ing	Number of people (nb/year)	40000	expert opinion	low	https://www.idescat.cat/
MPA 10	Parc Natural Mari	Partially protected	9.4	Tourism: commercial boating	Number of commercial touristic boats (nb/year)	17	data	high	http://es.costabrava.org/a-donde-ir/transportes/cruceros-maritimos
MPA 10	Parc Natural Mari	Partially protected	9.4	Tourism: private boating	Number of private boats (nb/year)	20000	expert opinion	low	http://ports.gencat.cat/es/
MPA 10	Parc Natural Mari	Partially protected	9.4	Tourism: scuba-diving	Number of dives (nb/year)	12700	data	high	http://nautica.gencat.cat/ca/bus-seig-esbarjo/centres_immersio/
MPA 10	Parc Natural Mari	Partially protected	9.4	Trawlers/purse-seiners	Number of boats (nb/year)	0	data	high	http://agricultura.gencat.cat/ca/ambits/pesca/dar_flota_pesquera/dar_estadistiques/dar_detall_flota_pesquera_per_ports/
MPA 10	Outside	Outside	94.35	Artisanal fishing	Number of boats (nb/year)	36	data	high	http://agricultura.gencat.cat/ca/ambits/pesca/dar_flota_pesquera/dar_estadistiques/dar_detall_flota_pesquera_per_ports/

MPA 10	Outside	Outside	94.35	Recreational fishing: hook and line	Number of people (nb/year)	1000	expert opinion	low	Font et al. (2012)
MPA 10	Outside	Outside	94.35	Recreational fishing: spearfishing	Number of people (nb/year)	50	expert opinion	low	Font et al. (2012)
MPA 10	Outside	Outside	94.35	Tourism: bathing/trampl ing	Number of people (nb/year)	600000	expert opinion	low	http://ports.gencat.cat/es/
MPA 10	Outside	Outside	94.35	Tourism: commercial boating	Number of commercial touristic boats (nb/year)	17	data	high	http://es.costabrava.org/a-donde-ir/transportes/cruceros-maritimos
MPA 10	Outside	Outside	94.35	Tourism: private boating	Number of private boats (nb/year)	500	expert opinion	low	http://ports.gencat.cat/es/
MPA 10	Outside	Outside	94.35	Tourism: scuba-diving	Number of dives (nb/year)	200	expert opinion	low	http://nautica.gencat.cat/ca/bus-seig-esbarjo/centres-immersio/
MPA 10	Outside	Outside	348.87	Trawlers/purse-seiners	Number of boats (nb/year)	44	data	high	http://agricultura.gencat.cat/ca/ambits/pesca/dar-flota-pesquera/dar-estadistiques/dar-detall-flota-pesquera-per-ports/
MPA 11	Reserva marina	No-entry	2.12	Artisanal fishing	Number of boats (nb/year)	0	data	high	http://www.caib.es/sites/espais-naturalsprotegits/f/127403
MPA 11	Reserva marina	No-entry	2.12	Recreational fishing: hook and line	Number of people (nb/year)	0	data	high	http://www.caib.es/sites/espais-naturalsprotegits/f/127403
MPA 11	Reserva marina	No-entry	2.12	Recreational fishing: spearfishing	Number of people (nb/year)	0	data	high	http://www.caib.es/sites/espais-naturalsprotegits/f/127403
MPA 11	Reserva marina	No-entry	2.12	Tourism: bathing/trampl ing	Number of people (nb/year)	0	data	high	http://www.caib.es/sites/espais-naturalsprotegits/f/127403
MPA 11	Reserva marina	No-entry	2.12	Tourism: commercial boating	Number of commercial touristic boats (nb/year)	0	data	high	http://www.caib.es/sites/espais-naturalsprotegits/f/127403

MPA 11	Reserva marina	No-entry	2.12	Tourism: private boating	Number of private boats (nb/year)	0	data	high	http://www.caib.es/sites/espais/naturalsprotegits/f/127403
MPA 11	Reserva marina	No-entry	2.12	Tourism: scuba-diving	Number of dives (nb/year)	0	data	high	http://www.caib.es/sites/espais/naturalsprotegits/f/127403
MPA 11	Reserva marina	No-entry	2.12	Trawlers/purse-seiners	Number of boats (nb/year)	0	data	high	http://www.caib.es/sites/espais/naturalsprotegits/f/127403
MPA 11	Uso especial	No-take	0.71	Artisanal fishing	Number of boats (nb/year)	0	data	high	http://www.caib.es/sites/espais/naturalsprotegits/f/127403
MPA 11	Uso especial	No-take	0.71	Recreational fishing: hook and line	Number of people (nb/year)	0	data	high	http://www.caib.es/sites/espais/naturalsprotegits/f/127403
MPA 11	Uso especial	No-take	0.71	Recreational fishing: spearfishing	Number of people (nb/year)	0	data	high	http://www.caib.es/sites/espais/naturalsprotegits/f/127403
MPA 11	Uso especial	No-take	0.71	Tourism: bathing/trampl ing	Number of people (nb/year)	59319	data	high	Sum of: 21272 bathing/trampl ing from commercial boats; and 38047 bathing/trampl ing from private boats
MPA 11	Uso especial	No-take	0.71	Tourism: commercial boating	Number of commercial touristic boats (nb/year)	497	data	high	http://www.caib.es/sites/espais/naturalsprotegits/f/127403
MPA 11	Uso especial	No-take	0.71	Tourism: private boating	Number of private boats (nb/year)	8095	data	high	http://www.caib.es/sites/espais/naturalsprotegits/f/127403
MPA 11	Uso especial	No-take	0.71	Tourism: scuba-diving	Number of dives (nb/year)	0	data	high	http://www.caib.es/sites/espais/naturalsprotegits/f/127403
MPA 11	Uso especial	No-take	0.71	Trawlers/purse-seiners	Number of boats (nb/year)	0	data	high	http://www.caib.es/sites/espais/naturalsprotegits/f/127403
MPA 11	Uso moderado	Partially protected	77.98	Artisanal fishing	Number of boats (nb/year)	47	data	high	License for 47 boats, data on how many days have been working are available from the managers of the MPA, but are not processed

MPA 11	Uso moderado	Partially protected	77.98	Recreational fishing: hook and line	Number of people (nb/year)	0	data	high	http://www.caib.es/sites/espais/naturalsprotegits/f/127403
MPA 11	Uso moderado	Partially protected	77.98	Recreational fishing: spearfishing	Number of people (nb/year)	0	data	high	http://www.caib.es/sites/espais/naturalsprotegits/f/127403
MPA 11	Uso moderado	Partially protected	77.98	Tourism: bathing/trampl ing	Number of people (nb/year)	14830	expert opinion	low	http://www.caib.es/sites/espais/naturalsprotegits/f/127403
MPA 11	Uso moderado	Partially protected	77.98	Tourism: commercial boating	Number of commercial touristic boats (nb/year)	248	expert opinion	low	http://www.caib.es/sites/espais/naturalsprotegits/f/127403
MPA 11	Uso moderado	Partially protected	77.98	Tourism: private boating	Number of private boats (nb/year)	4000	expert opinion	low	http://www.caib.es/sites/espais/naturalsprotegits/f/127403
MPA 11	Uso moderado	Partially protected	77.98	Tourism: scuba-diving	Number of dives (nb/year)	0	data	high	http://www.caib.es/sites/espais/naturalsprotegits/f/127403
MPA 11	Uso moderado	Partially protected	77.98	Trawlers/purse-seiners	Number of boats (nb/year)	1	data	high	License for 1 boat with a maximum of 20 working days per year
MPA 11	Uso restringido	No-take	0.68	Artisanal fishing	Number of boats (nb/year)	0	data	high	http://www.caib.es/sites/espais/naturalsprotegits/f/127403
MPA 11	Uso restringido	No-take	0.68	Recreational fishing: hook and line	Number of people (nb/year)	0	data	high	http://www.caib.es/sites/espais/naturalsprotegits/f/127403
MPA 11	Uso restringido	No-take	0.68	Recreational fishing: spearfishing	Number of people (nb/year)	0	data	high	http://www.caib.es/sites/espais/naturalsprotegits/f/127403
MPA 11	Uso restringido	No-take	0.68	Tourism: bathing/trampl ing	Number of people (nb/year)	4794	expert opinion	low	http://www.caib.es/sites/espais/naturalsprotegits/f/127403
MPA 11	Uso restringido	No-take	0.68	Tourism: commercial boating	Number of commercial touristic boats (nb/year)	50	expert opinion	low	http://www.caib.es/sites/espais/naturalsprotegits/f/127403

MPA 11	Uso restringido	No-take	0.68	Tourism: private boating	Number of private boats (nb/year)	1020	expert opinion	low	http://www.caib.es/sites/espais/naturalsprotegits/f/127403
MPA 11	Uso restringido	No-take	0.68	Tourism: scuba-diving	Number of dives (nb/year)	3000	data	high	http://www.caib.es/sites/espais/naturalsprotegits/f/127403
MPA 11	Uso restringido	No-take	0.68	Trawlers/purse-seiners	Number of boats (nb/year)	0	data	high	http://www.caib.es/sites/espais/naturalsprotegits/f/127403
MPA 11	Uso restringido pesquero	Partially protected	5.62	Artisanal fishing	Number of boats (nb/year)	25	expert opinion	low	http://www.caib.es/sites/espais/naturalsprotegits/f/127403
MPA 11	Uso restringido pesquero	Partially protected	5.62	Recreational fishing: hook and line	Number of people (nb/year)	0	data	high	http://www.caib.es/sites/espais/naturalsprotegits/f/127403
MPA 11	Uso restringido pesquero	Partially protected	5.62	Recreational fishing: spearfishing	Number of people (nb/year)	0	data	high	http://www.caib.es/sites/espais/naturalsprotegits/f/127403
MPA 11	Uso restringido pesquero	Partially protected	5.62	Tourism: bathing/trampl ing	Number of people (nb/year)	0	data	high	http://www.caib.es/sites/espais/naturalsprotegits/f/127403
MPA 11	Uso restringido pesquero	Partially protected	5.62	Tourism: commercial boating	Number of commercial touristic boats (nb/year)	0	data	high	http://www.caib.es/sites/espais/naturalsprotegits/f/127403
MPA 11	Uso restringido pesquero	Partially protected	5.62	Tourism: private boating	Number of private boats (nb/year)	0	data	high	http://www.caib.es/sites/espais/naturalsprotegits/f/127403
MPA 11	Uso restringido pesquero	Partially protected	5.62	Tourism: scuba-diving	Number of dives (nb/year)	0	data	high	http://www.caib.es/sites/espais/naturalsprotegits/f/127403
MPA 11	Uso restringido pesquero	Partially protected	5.62	Trawlers/purse-seiners	Number of boats (nb/year)	0	data	high	http://www.caib.es/sites/espais/naturalsprotegits/f/127403
MPA 11	Fuera	Outside	64.91	Artisanal fishing	Number of boats (nb/year)	6	data	high	http://www.caib.es/sites/espais/naturalsprotegits/f/127403
MPA 11	Fuera	Outside	64.91	Recreational fishing: hook and line	Number of people (nb/year)	555	expert opinion	low	Estimation from data of a study on recreational fishing (Morales-Nin et al. 2005)

MPA 11	Fuera	Outside	64.91	Recreational fishing: spearfishing	Number of people (nb/year)	277	expert opinion	low	Estimation from data of a study on recreational fishing (Morales-Nin et al. 2005)
MPA 11	Fuera	Outside	64.91	Tourism: bathing/trampl ing	Number of people (nb/year)	96122	expert opinion	low	Data from VMS, a total of 7 boats
MPA 11	Fuera	Outside	64.91	Tourism: commercial boating	Number of commercial touristic boats (nb/year)	150	expert opinion	low	http://www.caib.es/sites/espaisnaturalsprotegits/f/127403
MPA 11	Fuera	Outside	64.91	Tourism: private boating	Number of private boats (nb/year)	12050	expert opinion	low	Data from VMS, a total of 7 boats
MPA 11	Fuera	Outside	64.91	Tourism: scuba-diving	Number of dives (nb/year)	25	expert opinion	low	Data from VMS, a total of 6 boats
MPA 11	Fuera	Outside	800.32	Trawlers/purse-seiners	Number of boats (nb/year)	7	data	high	http://www.caib.es/sites/espaisnaturalsprotegits/f/127403
MPA 12	Zona A	No-take	0.782	Artisanal fishing	Number of boats (nb/year)	0	expert opinion	medium	MPA Consortium
MPA 12	Zona A	No-take	0.782	Recreational fishing: hook and line	Number of people (nb/year)	0	expert opinion	medium	MPA Consortium
MPA 12	Zona A	No-take	0.782	Recreational fishing: spearfishing	Number of people (nb/year)	0	expert opinion	medium	MPA Consortium
MPA 12	Zona A	No-take	0.782	Tourism: bathing/trampl ing	Number of people (nb/year)	0	data	medium	MPA Consortium
MPA 12	Zona A	No-take	0.782	Tourism: commercial boating	Number of commercial touristic boats (nb/year)	0	expert opinion	high	MPA Consortium
MPA 12	Zona A	No-take	0.782	Tourism: private boating	Number of private boats (nb/year)	50	expert opinion	medium	MPA Consortium
MPA 12	Zona A	No-take	0.782	Tourism: scuba-diving	Number of dives (nb/year)	0	data	high	MPA Consortium

MPA 12	Zona A	No-take	0.782	Trawlers/purse-seiners	Number of boats (nb/year)	0	data	high	MPA Consortium
MPA 12	Zona A	No-take	1.213	Artisanal fishing	Number of boats (nb/year)	0	expert opinion	medium	MPA Consortium
MPA 12	Zona A	No-take	1.213	Recreational fishing: hook and line	Number of people (nb/year)	0	expert opinion	medium	MPA Consortium
MPA 12	Zona A	No-take	1.213	Recreational fishing: spearfishing	Number of people (nb/year)	0	expert opinion	medium	MPA Consortium
MPA 12	Zona A	No-take	1.213	Tourism: bathing/trampl ing	Number of people (nb/year)	5500	expert opinion	medium	Estimated on the basis of beach extension and the total number of tourists within the C zone
MPA 12	Zona A	No-take	1.213	Tourism: commercial boating	Number of commercial touristic boats (nb/year)	0	data	high	MPA Consortium
MPA 12	Zona A	No-take	1.213	Tourism: private boating	Number of private boats (nb/year)	50	expert opinion	medium	MPA Consortium
MPA 12	Zona A	No-take	1.213	Tourism: scuba-diving	Number of dives (nb/year)	0	data	high	MPA Consortium
MPA 12	Zona A	No-take	1.213	Trawlers/purse-seiners	Number of boats (nb/year)	0	data	high	MPA Consortium
MPA 12	Zona B	Partially protected	12.302	Artisanal fishing	Number of boats (nb/year)	107	data	high	MPA Consortium
MPA 12	Zona B	Partially protected	12.302	Recreational fishing: hook and line	Number of people (nb/year)	0	data	high	MPA Consortium
MPA 12	Zona B	Partially protected	12.302	Recreational fishing: spearfishing	Number of people (nb/year)	0	data	high	MPA Consortium
MPA 12	Zona B	Partially protected	12.302	Tourism: bathing/trampl ing	Number of people (nb/year)	0	expert opinion	medium	MPA Consortium
MPA 12	Zona B	Partially protected	12.302	Tourism: commercial boating	Number of commercial	10	data	medium	MPA Consortium

					touristic boats (nb/year)				
MPA 12	Zona B	Partially protected	12.302	Tourism: private boating	Number of private boats (nb/year)	3000	expert opinion	low	MPA Consortium
MPA 12	Zona B	Partially protected	12.302	Tourism: scuba-diving	Number of dives (nb/year)	0	data	medium	MPA Consortium
MPA 12	Zona B	Partially protected	12.302	Trawlers/purse-seiners	Number of boats (nb/year)	0	data	high	MPA Consortium
MPA 12	Zona B	Partially protected	17.904	Artisanal fishing	Number of boats (nb/year)	107	data	high	MPA Consortium
MPA 12	Zona B	Partially protected	17.904	Recreational fishing: hook and line	Number of people (nb/year)	0	data	high	MPA Consortium
MPA 12	Zona B	Partially protected	17.904	Recreational fishing: spearfishing	Number of people (nb/year)	0	data	high	MPA Consortium
MPA 12	Zona B	Partially protected	17.904	Tourism: bathing/trampl ing	Number of people (nb/year)	0	expert opinion	medium	MPA Consortium
MPA 12	Zona B	Partially protected	17.904	Tourism: commercial boating	Number of commercial touristic boats (nb/year)	10	data	medium	MPA Consortium
MPA 12	Zona B	Partially protected	17.904	Tourism: private boating	Number of private boats (nb/year)	0	expert opinion	low	MPA Consortium
MPA 12	Zona B	Partially protected	17.904	Tourism: scuba-diving	Number of dives (nb/year)	0	data	medium	MPA Consortium
MPA 12	Zona B	Partially protected	17.904	Trawlers/purse-seiners	Number of boats (nb/year)	0	data	high	MPA Consortium
MPA 12	Zona C	Partially protected	132.666	Artisanal fishing	Number of boats (nb/year)	107	data	high	MPA Consortium
MPA 12	Zona C	Partially protected	132.666	Recreational fishing: hook and line	Number of people (nb/year)	1150	data	high	MPA Consortium

MPA 12	Zona C	Partially protected	132.666	Recreational fishing: spearfishing	Number of people (nb/year)	500	data	high	MPA Consortium
MPA 12	Zona C	Partially protected	132.666	Tourism: bathing/trampl ing	Number of people (nb/year)	150000 0	expert opinion	medium	Estimated on the basis of nb of presence recorded by Touristic agency of Apulia
MPA 12	Zona C	Partially protected	132.666	Tourism: commercial boating	Number of commercial touristic boats (nb/year)	10	data	low	MPA Consortium
MPA 12	Zona C	Partially protected	132.666	Tourism: private boating	Number of private boats (nb/year)	3000	expert opinion	low	MPA Consortium
MPA 12	Zona C	Partially protected	132.666	Tourism: scuba-diving	Number of dives (nb/year)	2000	data	low	MPA Consortium
MPA 12	Zona C	Partially protected	132.666	Trawlers/purse-seiners	Number of boats (nb/year)	0	data	high	MPA Consortium
MPA 12	Outside	Outside	307.91	Artisanal fishing	Number of boats (nb/year)	107	expert opinion	low	Assumed the same of C zone
MPA 12	Outside	Outside	307.91	Recreational fishing: hook and line	Number of people (nb/year)	1150	expert opinion	low	Assumed the same of C zone
MPA 12	Outside	Outside	307.91	Recreational fishing: spearfishing	Number of people (nb/year)	1000	expert opinion	low	Assumed the same of C zone
MPA 12	Outside	Outside	307.91	Tourism: bathing/trampl ing	Number of people (nb/year)	150000 0	expert opinion	medium	Assumed the same of C zone
MPA 12	Outside	Outside	307.91	Tourism: commercial boating	Number of commercial touristic boats (nb/year)	10	expert opinion	low	Assumed the same of C zone
MPA 12	Outside	Outside	307.91	Tourism: private boating	Number of private boats (nb/year)	3000	expert opinion	low	Assumed the same of C zone
MPA 12	Outside	Outside	307.91	Tourism: scuba-diving	Number of dives (nb/year)	2000	expert opinion	low	Assumed the same of C zone

MPA 12	Outside	Outside	407.17	Trawlers/purse-seiners	Number of boats (nb/year)	0	expert opinion	low	Assumed the same of C zone
MPA 13	Inside	Partially protected	8.487	Artisanal fishing	Number of boats (nb/year)	48	data	medium	Registry of fishing vessels held by Ministry
MPA 13	Inside	Partially protected	8.487	Recreational fishing: hook and line	Number of people (nb/year)	50	expert opinion	low	Estimated
MPA 13	Inside	Partially protected	8.487	Recreational fishing: spearfishing	Number of people (nb/year)	2873	data	low	Registry of speargun licences held by Malta Police Force
MPA 13	Inside	Partially protected	8.487	Tourism: bathing/trampl ing	Number of people (nb/year)	30000	data	low	Estimated based on logs kept by Malta Tourism Authority beach supervisors
MPA 13	Inside	Partially protected	8.487	Tourism: commercial boating	Number of commercial touristic boats (nb/year)	25	expert opinion	low	Estimated
MPA 13	Inside	Partially protected	8.487	Tourism: private boating	Number of private boats (nb/year)	100	data	low	Estimated based on satellite imagery obtained from Google Earth
MPA 13	Inside	Partially protected	8.487	Tourism: scuba-diving	Number of dives (nb/year)	100	expert opinion	low	Estimated
MPA 13	Inside	Partially protected	8.487	Trawlers/purse-seiners	Number of boats (nb/year)	0	data	high	Registry of fishing vessels held by Ministry
MPA 13	Outside	Outside	115.8	Artisanal fishing	Number of boats (nb/year)	388	data	medium	Registry of fishing vessels held by Ministry
MPA 13	Outside	Outside	115.8	Recreational fishing: hook and line	Number of people (nb/year)	1000	expert opinion	low	Estimated
MPA 13	Outside	Outside	115.8	Recreational fishing: spearfishing	Number of people (nb/year)	2873	data	low	Registry of speargun licences held by Malta Police Force
MPA 13	Outside	Outside	115.8	Tourism: bathing/trampl ing	Number of people (nb/year)	125000	data	low	Estimated based on logs kept by Malta Tourism Authority beach supervisors
MPA 13	Outside	Outside	115.8	Tourism: commercial boating	Number of commercial	150	expert opinion	low	Estimated

					touristic boats (nb/year)				
MPA 13	Outside	Outside	115.8	Tourism: private boating	Number of private boats (nb/year)	1000	data	low	Estimated based on satellite imagery obtained from Google Earth
MPA 13	Outside	Outside	115.8	Tourism: scuba-diving	Number of dives (nb/year)	20000	expert opinion	low	Estimated
MPA 13	Outside	Outside	308.29	Trawlers/purse-seiners	Number of boats (nb/year)	49	data	high	Registry of fishing vessels held by Ministry
MPA 14	Zona A	No-take	1.386	Artisanal fishing	Number of boats (nb/year)	0	data	high	MPA regulations
MPA 14	Zona A	No-take	1.386	Recreational fishing: hook and line	Number of people (nb/year)	0	data	high	MPA regulations
MPA 14	Zona A	No-take	1.386	Recreational fishing: spearfishing	Number of people (nb/year)	0	data	high	MPA regulations
MPA 14	Zona A	No-take	1.386	Tourism: bathing/trampl ing	Number of people (nb/year)	473.5	data	high	Curtesy of Torre Guaceto Management Consortium - Just snorkeling linked to environmental education activities (nb of visitors)
MPA 14	Zona A	No-take	1.386	Tourism: commercial boating	Number of commercial touristic boats (nb/year)	0	data	high	MPA regulations
MPA 14	Zona A	No-take	1.386	Tourism: private boating	Number of private boats (nb/year)	0	data	high	MPA regulations
MPA 14	Zona A	No-take	1.386	Tourism: scuba-diving	Number of dives (nb/year)	0	data	high	MPA regulations
MPA 14	Zona A	No-take	1.386	Trawlers/purse-seiners	Number of boats (nb/year)	0	data	high	MPA regulations
MPA 14	Zona A	No-entry	0.46	Artisanal fishing	Number of boats (nb/year)	0	data	high	MPA regulations
MPA 14	Zona A	No-entry	0.46	Recreational fishing: hook and line	Number of people (nb/year)	0	data	high	MPA regulations

MPA 14	Zona A	No-entry	0.46	Recreational fishing: spearfishing	Number of people (nb/year)	0	data	high	MPA regulations
MPA 14	Zona A	No-entry	0.46	Tourism: bathing/trampl ing	Number of people (nb/year)	0	data	high	MPA regulations
MPA 14	Zona A	No-entry	0.46	Tourism: commercial boating	Number of commercial touristic boats (nb/year)	0	data	high	MPA regulations
MPA 14	Zona A	No-entry	0.46	Tourism: private boating	Number of private boats (nb/year)	0	data	high	MPA regulations
MPA 14	Zona A	No-entry	0.46	Tourism: scuba-diving	Number of dives (nb/year)	0	data	high	MPA regulations
MPA 14	Zona A	No-entry	0.46	Trawlers/purse-seiners	Number of boats (nb/year)	0	data	high	MPA regulations
MPA 14	Zona B	Partially protected	1.63	Artisanal fishing	Number of boats (nb/year)	0	data	high	MPA regulations
MPA 14	Zona B	Partially protected	1.63	Recreational fishing: hook and line	Number of people (nb/year)	0	data	high	MPA regulations
MPA 14	Zona B	Partially protected	1.63	Recreational fishing: spearfishing	Number of people (nb/year)	0	data	high	MPA regulations
MPA 14	Zona B	Partially protected	1.63	Tourism: bathing/trampl ing	Number of people (nb/year)	120000	data	high	Just snorkeling linked to environmental education activities (nb of visitors)
MPA 14	Zona B	Partially protected	1.63	Tourism: commercial boating	Number of commercial touristic boats (nb/year)	0	data	high	MPA regulations
MPA 14	Zona B	Partially protected	1.63	Tourism: private boating	Number of private boats (nb/year)	0	data	high	MPA regulations
MPA 14	Zona B	Partially protected	1.63	Tourism: scuba-diving	Number of dives (nb/year)	80	data	high	Curtesy of Torre Guaceto Management Consortium - Just snorkeling linked to

									environmental education activities (nb of visitors)
MPA 14	Zona B	Partially protected	1.63	Trawlers/purse-seiners	Number of boats (nb/year)	0	data	high	MPA regulations
MPA 14	Zona C	Partially protected	18.85	Artisanal fishing	Number of boats (nb/year)	5	data	high	Curtesy of Torre Guaceto Management Consortium - Just snorkeling linked to environmental education activities (nb of visitors)
MPA 14	Zona C	Partially protected	18.85	Recreational fishing: hook and line	Number of people (nb/year)	323	data	high	Curtesy of Torre Guaceto Management Consortium - Just snorkeling linked to environmental education activities (nb of visitors)
MPA 14	Zona C	Partially protected	18.85	Recreational fishing: spearfishing	Number of people (nb/year)	0	data	high	MPA regulations
MPA 14	Zona C	Partially protected	18.85	Tourism: bathing/trampl ing	Number of people (nb/year)	180000	expert opinion	medium	Estimated on the basis of beach surface and number of visitors in the B zone. In this case people doesn't have to pay!!!!
MPA 14	Zona C	Partially protected	18.85	Tourism: commercial boating	Number of commercial touristic boats (nb/year)	0	data	high	Based on Historical images of google earth
MPA 14	Zona C	Partially protected	18.85	Tourism: private boating	Number of private boats (nb/year)	0	data	medium	Based on Historical images of google earth
MPA 14	Zona C	Partially protected	18.85	Tourism: scuba-diving	Number of dives (nb/year)	80	expert opinion	medium	Assumed on the basis of nb of divers in B zone. Also for C zone divers need autorization of MPA.
MPA 14	Zona C	Partially protected	18.85	Trawlers/purse-seiners	Number of boats (nb/year)	0	data	high	MPA regulations
MPA 14	Outside	Outside	76.87	Artisanal fishing	Number of boats (nb/year)	95	data	high	Curtesy of Torre Guaceto Management Consortium

MPA 14	Outside	Outside	76.87	Recreational fishing: hook and line	Number of people (nb/year)	365	expert opinion	low	Estimated
MPA 14	Outside	Outside	76.87	Recreational fishing: spearfishing	Number of people (nb/year)	365	expert opinion	low	Estimated
MPA 14	Outside	Outside	76.87	Tourism: bathing/trampl ing	Number of people (nb/year)	300000	expert opinion	low	Estimated
MPA 14	Outside	Outside	76.87	Tourism: commercial boating	Number of commercial touristic boats (nb/year)	0	expert opinion	low	Based on Historical images of google earth
MPA 14	Outside	Outside	76.87	Tourism: private boating	Number of private boats (nb/year)	8	expert opinion	low	Based on Historical images of google earth
MPA 14	Outside	Outside	76.87	Tourism: scuba-diving	Number of dives (nb/year)	100	expert opinion	low	Estimated
MPA 14	Outside	Outside	282.03	Trawlers/purse-seiners	Number of boats (nb/year)	1	data	high	Curtesy of Torre Guaceto Management Consortium
MPA 15	Very strict protection subzone (1a)	No-entry	18.64	Artisanal fishing	Number of boats (nb/year)	0	data	high	MPA regulations
MPA 15	Very strict protection subzone (1a)	No-entry	18.64	Recreational fishing: hook and line	Number of people (nb/year)	0	data	high	MPA regulations
MPA 15	Very strict protection subzone (1a)	No-entry	18.64	Recreational fishing: spearfishing	Number of people (nb/year)	0	data	high	MPA regulations
MPA 15	Very strict protection subzone (1a)	No-entry	18.64	Tourism: bathing/trampl ing	Number of people (nb/year)	0	expert opinion	medium	MPA regulations

MPA 15	Very strict protection subzone (1a)	No-entry	18.64	Tourism: commercial boating	Number of commercial touristic boats (nb/year)	0	data	low	MPA regulations
MPA 15	Very strict protection subzone (1a)	No-entry	18.64	Tourism: private boating	Number of private boats (nb/year)	0	data	low	MPA regulations
MPA 15	Very strict protection subzone (1a)	No-entry	18.64	Tourism: scuba-diving	Number of dives (nb/year)	0	data	high	MPA regulations
MPA 15	Very strict protection subzone (1a)	No-entry	18.64	Trawlers/purse-seiners	Number of boats (nb/year)	0	data	high	MPA regulations
MPA 15	Strict protection subzone (1b)	No-take	111.52	Artisanal fishing	Number of boats (nb/year)	0	data	medium	MPA regulations
MPA 15	Strict protection subzone (1b)	No-take	111.52	Recreational fishing: hook and line	Number of people (nb/year)	0	data	medium	MPA regulations
MPA 15	Strict protection subzone (1b)	No-take	111.52	Recreational fishing: spearfishing	Number of people (nb/year)	0	data	high	MPA regulations
MPA 15	Strict protection subzone (1b)	No-take	111.52	Tourism: bathing/trampl ing	Number of people (nb/year)	0	data	medium	MPA regulations
MPA 15	Strict protection subzone (1b)	No-take	111.52	Tourism: commercial boating	Number of commercial touristic boats (nb/year)	591	data	high	Number of ticket sold to commercial touristic boats

MPA 15	Strict protection subzone (1b)	No-take	111.52	Tourism: private boating	Number of private boats (nb/year)	12803	data	high	Number of ticket sold to small boats
MPA 15	Strict protection subzone (1b)	No-take	111.52	Tourism: scuba-diving	Number of dives (nb/year)	0	data	high	MPA regulations
MPA 15	Strict protection subzone (1b)	No-take	111.52	Trawlers/purse-seiners	Number of boats (nb/year)	0	data	high	MPA regulations
MPA 15	Tradition and culture subzone (2a)	Partially protected	82.22	Artisanal fishing	Number of boats (nb/year)	107	expert opinion	low	There is 107 licences for artizanal fisheries for people who have properties in NP Kornati. Licences include trammel nets, long lines and hook and line fishing gear but they are not allowed to sell fish.
MPA 15	Tradition and culture subzone (2a)	Partially protected	82.22	Recreational fishing: hook and line	Number of people (nb/year)	0	data	medium	MPA regulations
MPA 15	Tradition and culture subzone (2a)	Partially protected	82.22	Recreational fishing: spearfishing	Number of people (nb/year)	0	data	medium	MPA regulations
MPA 15	Tradition and culture subzone (2a)	Partially protected	82.22	Tourism: bathing/trampl ing	Number of people (nb/year)	50000	expert opinion	low	There is estimation that half of the guests go swimming and walking around the park
MPA 15	Tradition and culture subzone (2a)	Partially protected	82.22	Tourism: commercial boating	Number of commercial touristic boats (nb/year)	591	data	high	Number of ticket sold to commercial touristic boats

MPA 15	Tradition and culture subzone (2a)	Partially protected	82.22	Tourism: private boating	Number of private boats (nb/year)	12803	data	high	Number of ticket sold to small boats
MPA 15	Tradition and culture subzone (2a)	Partially protected	82.22	Tourism: scuba-diving	Number of dives (nb/year)	0	data	high	MPA regulations
MPA 15	Tradition and culture subzone (2a)	Partially protected	82.22	Trawlers/purse-seiners	Number of boats (nb/year)	0	data	high	MPA regulations
MPA 15	Recreation subzone (2b)	Partially protected	2.36	Artisanal fishing	Number of boats (nb/year)	0	data	medium	MPA regulations
MPA 15	Recreation subzone (2b)	Partially protected	2.36	Recreational fishing: hook and line	Number of people (nb/year)	0	data	medium	MPA regulations
MPA 15	Recreation subzone (2b)	Partially protected	2.36	Recreational fishing: spearfishing	Number of people (nb/year)	0	data	medium	MPA regulations
MPA 15	Recreation subzone (2b)	Partially protected	2.36	Tourism: bathing/trampl ing	Number of people (nb/year)	50000	expert opinion	low	There is estimation that half of the guests go swimming and walking around the park
MPA 15	Recreation subzone (2b)	Partially protected	2.36	Tourism: commercial boating	Number of commercial touristic boats (nb/year)	591	data	high	Number of ticket sold to commercial touristic boats
MPA 15	Recreation subzone (2b)	Partially protected	2.36	Tourism: private boating	Number of private boats (nb/year)	591	data	high	Number of ticket sold to small boats
MPA 15	Recreation subzone (2b)	Partially protected	2.36	Tourism: scuba-diving	Number of dives (nb/year)	12803	expert opinion	low	Estimated
MPA 15	Recreation subzone (2b)	Partially protected	2.36	Trawlers/purse-seiners	Number of boats (nb/year)	0	data	high	MPA regulations

MPA 15	Anchoring subzone (3a)	Partially protected	1.41	Artisanal fishing	Number of boats (nb/year)	0	data	medium	MPA regulations
MPA 15	Anchoring subzone (3a)	Partially protected	1.41	Recreational fishing: hook and line	Number of people (nb/year)	0	data	medium	MPA regulations
MPA 15	Anchoring subzone (3a)	Partially protected	1.41	Recreational fishing: spearfishing	Number of people (nb/year)	0	data	medium	MPA regulations
MPA 15	Anchoring subzone (3a)	Partially protected	1.41	Tourism: bathing/trampl ing	Number of people (nb/year)	50000	expert opinion	low	There is estimation that half of the guests go swimming and walking around the park
MPA 15	Anchoring subzone (3a)	Partially protected	1.41	Tourism: commercial boating	Number of commercial touristic boats (nb/year)	591	data	high	Number of ticket sold to commercial touristic boats
MPA 15	Anchoring subzone (3a)	Partially protected	1.41	Tourism: private boating	Number of private boats (nb/year)	12803	data	high	Number of ticket sold to small boats
MPA 15	Anchoring subzone (3a)	Partially protected	1.41	Tourism: scuba-diving	Number of dives (nb/year)	0	data	high	MPA regulations
MPA 15	Anchoring subzone (3a)	Partially protected	1.41	Trawlers/purse-seiners	Number of boats (nb/year)	0	data	high	MPA regulations
MPA 15	Settlement subzone (3b)	Partially protected	0.64	Artisanal fishing	Number of boats (nb/year)	0	data	medium	MPA regulations
MPA 15	Settlement subzone (3b)	Partially protected	0.64	Recreational fishing: hook and line	Number of people (nb/year)	0	data	medium	MPA regulations
MPA 15	Settlement subzone (3b)	Partially protected	0.64	Recreational fishing: spearfishing	Number of people (nb/year)	0	data	medium	MPA regulations
MPA 15	Settlement subzone (3b)	Partially protected	0.64	Tourism: bathing/trampl ing	Number of people (nb/year)	50000	expert opinion	low	There is estimation that half of the guests go swimming and walking around the park

MPA 15	Settlement subzone (3b)	Partially protected	0.64	Tourism: commercial boating	Number of commercial touristic boats (nb/year)	0	data	high	MPA regulations
MPA 15	Settlement subzone (3b)	Partially protected	0.64	Tourism: private boating	Number of private boats (nb/year)	0	data	high	MPA regulations
MPA 15	Settlement subzone (3b)	Partially protected	0.64	Tourism: scuba-diving	Number of dives (nb/year)	0	data	high	MPA regulations
MPA 15	Settlement subzone (3b)	Partially protected	0.64	Trawlers/purse-seiners	Number of boats (nb/year)	0	data	high	MPA regulations
MPA 15	Outside	Outside	462.13	Artisanal fishing	Number of boats (nb/year)	160	data	medium	MPA regulations
MPA 15	Outside	Outside	462.13	Recreational fishing: hook and line	Number of people (nb/year)	1500	expert opinion	low	Estimated
MPA 15	Outside	Outside	462.13	Recreational fishing: spearfishing	Number of people (nb/year)	500	expert opinion	low	Estimated
MPA 15	Outside	Outside	462.13	Tourism: bathing/trampling	Number of people (nb/year)	40000	expert opinion	low	Estimated
MPA 15	Outside	Outside	462.13	Tourism: commercial boating	Number of commercial touristic boats (nb/year)	700	expert opinion	low	Estimated
MPA 15	Outside	Outside	462.13	Tourism: private boating	Number of private boats (nb/year)	17000	expert opinion	low	Estimated
MPA 15	Outside	Outside	462.13	Tourism: scuba-diving	Number of dives (nb/year)	33270	expert opinion	medium	Estimated
MPA 15	Outside	Outside	1269.35	Trawlers/purse-seiners	Number of boats (nb/year)	70	expert opinion	medium	Estimated

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Appendix C

Supplementary Figure and Descriptive Statistics

Supplementary Figures

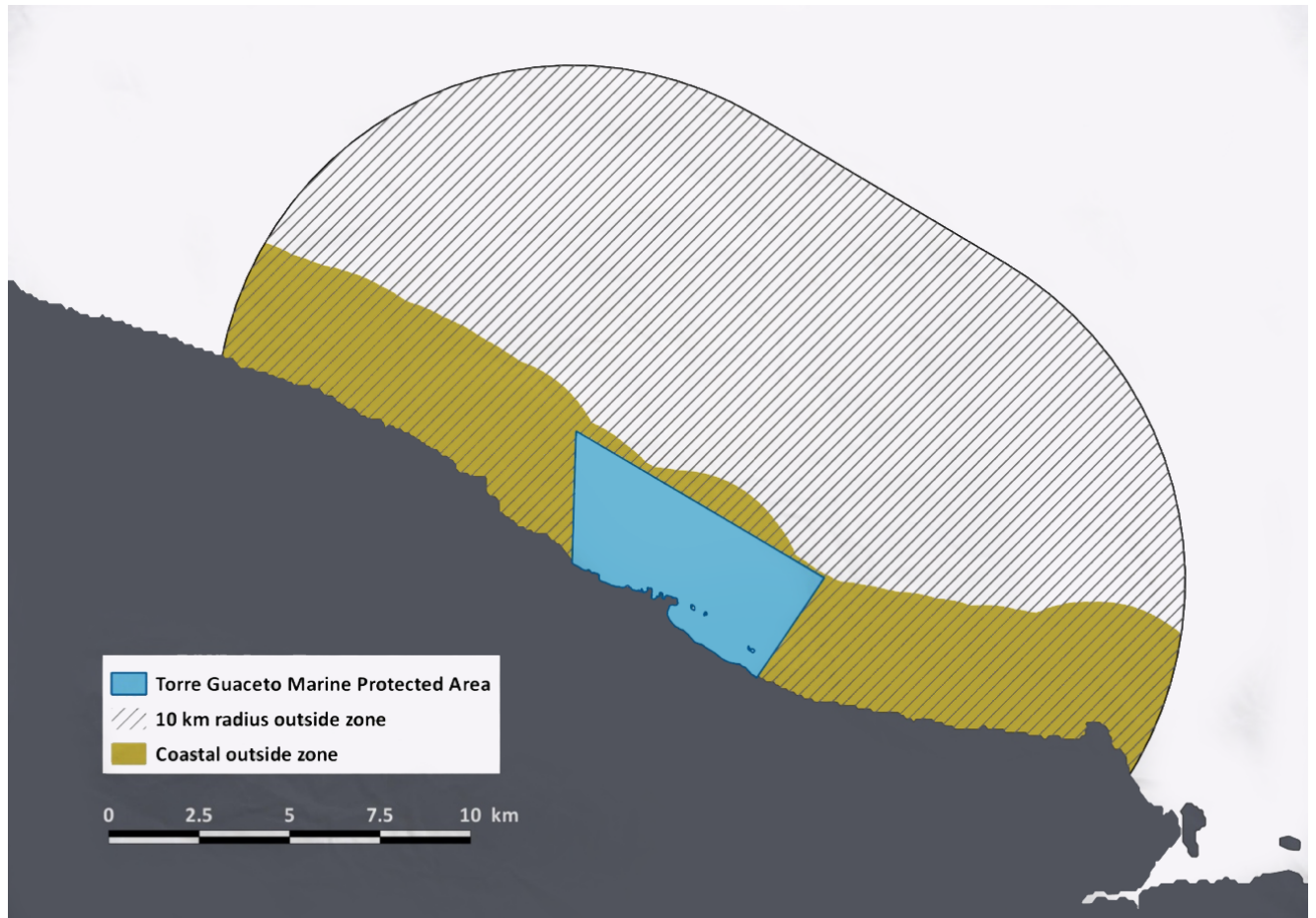


Fig. C.1. Example of outside areas of a marine protected area, as used for the study. We used two approaches to delineate the outside area, depending on the characteristics of the threat: 1) for commercial fishing with trawlers and purse seiners a 10 km radius surrounding the MPAs was applied (dashed area), while 2) for all other threats originating closer to the shore we considered the coastal section up to a maximum distance from the shore equal to the MPAs most offshore limit (brown area).

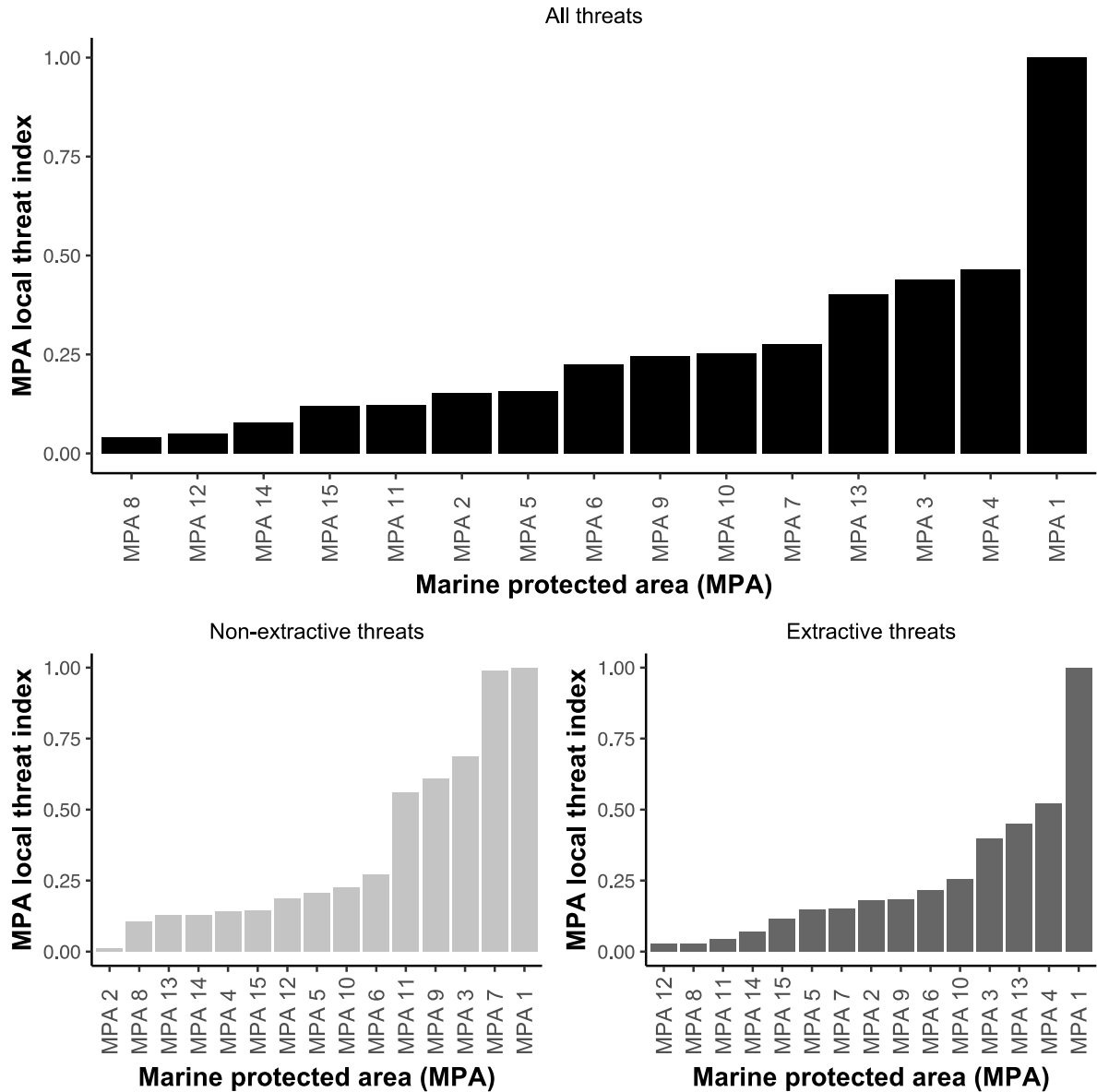


Fig. C.2. Local threat index of marine protected areas (MPAs) for all threats combined (top panel), extractive (bottom left panel) and non-extractive threats (bottom right panel). A low/high index mean that the MPA have a low/high threat intensities in its outside area, when compared to the threat intensities found in the outside areas of the other MPAs included in this study.

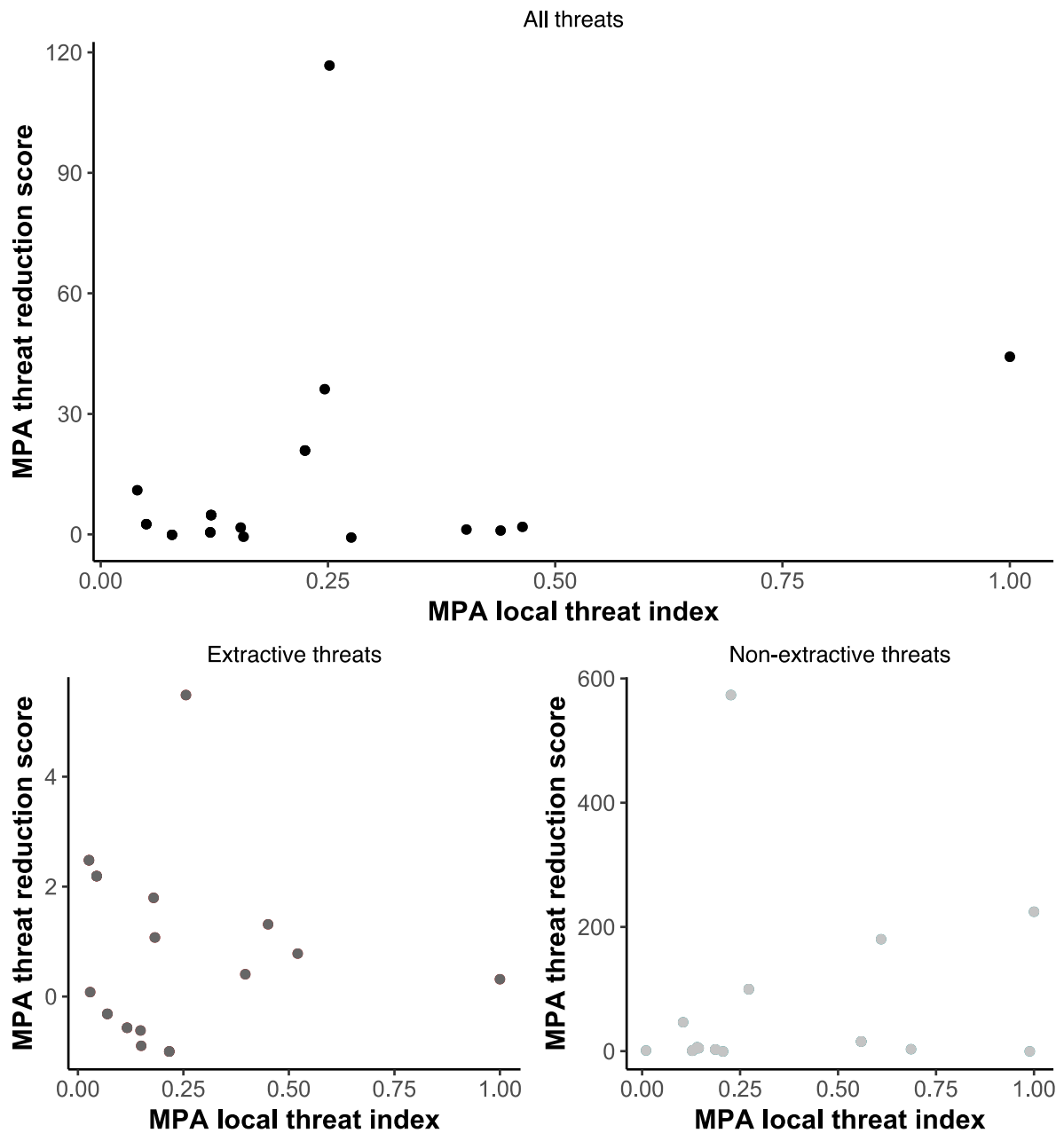


Fig. C.3. Relationships between the marine protected area (MPA) threat reduction score and the MPA local threat index for all threats combined (top panel), extractive (bottom left panel) and non-extractive threats (bottom right panel). No significant linear relationships were found ($p > 0.05$).

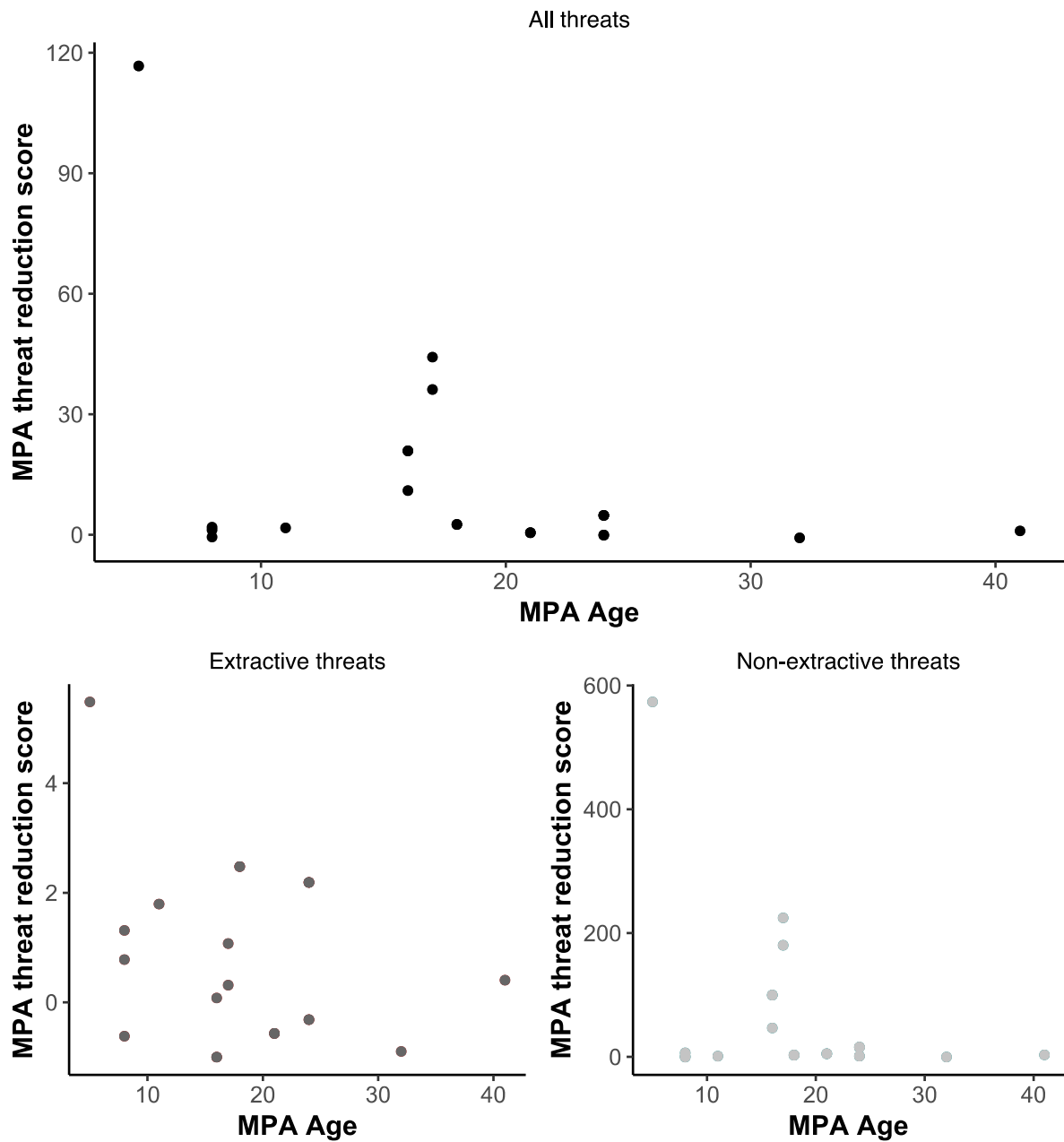


Fig. C.4. Relationships between the threat reduction score and the age of the marine protected areas (MPAs) for all threats combined (top panel), extractive (bottom left panel) and non-extractive threats (bottom right panel). No significant linear relationships were found ($p > 0.05$).

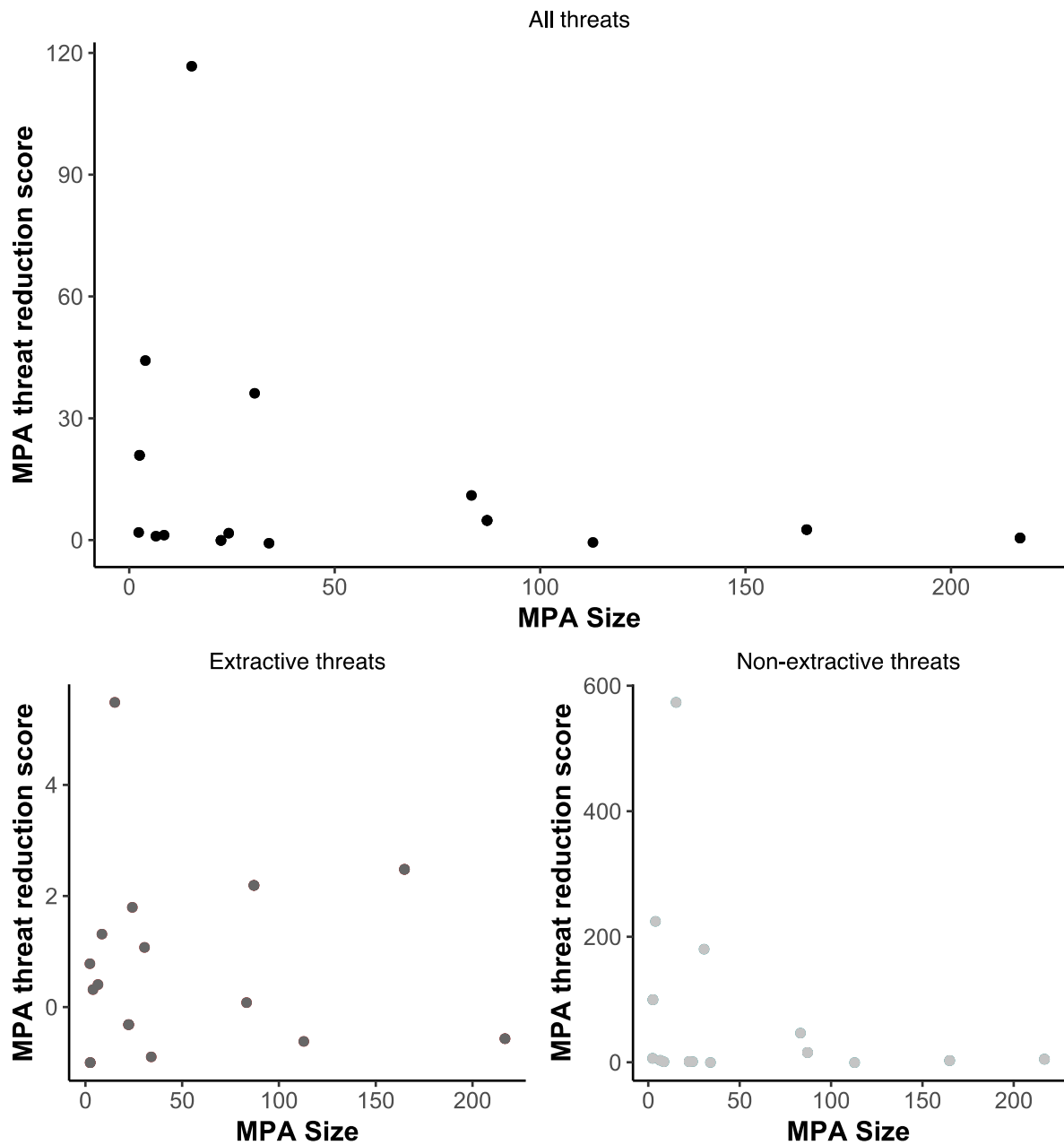


Fig. C.5. Relationships between the threat reduction score and the size of the marine protected areas (MPAs) for all threats combined (top panel), extractive (bottom left panel) and non-extractive threats (bottom right panel). No significant linear relationships were found ($p > 0.05$).

Descriptive statistics for the threat intensity index and threat reduction capacity index

Table C.1. Descriptive statistics for the standardized threat intensity index. The standardized threat intensity values were obtained by dividing with the maximum threat intensity of each threat. This resulted in a standardized scale of 0-1. These normalized values were then used to calculate the mean threat intensity of each threat in each protection level to explore the variability of threat intensity amongst protection levels (Fig. 2).

Protection level	Threats	Type	Mean	Standard deviation	Sample Size	Standard error	Median	Min	Max	25%	50%	75%
Fully Protected	Artisanal fishing	extractive	0	0	18	-	0	0	0	0	0	0
Fully Protected	Recreational fishing: hook and line	extractive	0	0	18	-	0	0	0	0	0	0
Fully Protected	Recreational fishing: spearfishing	extractive	0	0	18	-	0	0	0	0	0	0
Fully Protected	Trawlers/purse-seiners	extractive	0	0	18	-	0	0	0	0	0	0
Fully Protected	Tourism: bathing/trampling	non-extractive	0.08750	0.23875	18	0.05627	0.00057	0	1	0	0.00057	0.01845
Fully Protected	Tourism: commercial boating	non-extractive	0.06659	0.23437	18	0.05524	0	0	1	0	0	0.02005
Fully Protected	Tourism: private boating	non-extractive	0.11240	0.27257	18	0.06425	0.00310	0	1	0	0.00310	0.04281
Fully Protected	Tourism: scuba-diving	non-extractive	0.05926	0.23529	18	0.05546	0.00000	0	1	0	0.00000	0.00000
Partially protected	Artisanal fishing	extractive	0.19081	0.27044	32	0.04781	0.09877	0	1	0.02718	0.09877	0.20850
Partially protected	Recreational fishing: hook and line	extractive	0.17145	0.29805	32	0.05269	0.03182	0	1	0	0.03182	0.15975
Partially protected	Recreational fishing: spearfishing	extractive	0.04362	0.18155	32	0.03209	0	0	1	0	0	0.00191
Partially protected	Trawlers/purse-seiners	extractive	0.00144	0.00817	32	0.00144	0	0	0.04621	0	0	0
Partially protected	Tourism: bathing/trampling	non-extractive	0.04423	0.07340	32	0.01298	0.00822	0	0.23799	0.00222	0.00822	0.04245
Partially protected	Tourism: commercial boating	non-extractive	0.03448	0.12059	32	0.02132	0.00351	0	0.59878	0	0.00351	0.00814

Partially protected	Tourism: private boating	non-extractive	0.056 24	0.11317	32	0.02001	0.009 19	0	0.535 73	0.000 76	0.009 19	0.055 91
Partially protected	Tourism: scuba-diving	non-extractive	0.024 45	0.05391	32	0.00953	0.000 70	0	0.248 01	0	0.000 70	0.020 99
Outside	Artisanal fishing	extractive	0.077 81	0.12497	15	0.03227	0.033 57	0.004 29	0.487 99	0.016 11	0.033 57	0.081 27
Outside	Recreational fishing: hook and line	extractive	0.072 10	0.10633	15	0.02745	0.030 70	0	0.398 42	0.015 08	0.030 70	0.054 84
Outside	Recreational fishing: spearfishing	extractive	0.009 82	0.02336	15	0.00603	0.002 58	0	0.092 36	0.001 01	0.002 58	0.004 58
Outside	Trawlers/purse-seiners	extractive	0.263 77	0.27445	15	0.07086	0.185 72	0	1.000 00	0.032 96	0.185 72	0.422 19
Outside	Tourism: bathing/trampling	non-extractive	0.011 39	0.00824	15	0.00213	0.011 21	0.000 07	0.025 97	0.005 25	0.011 21	0.017 57
Outside	Tourism: commercial boating	non-extractive	0.004 96	0.01089	15	0.00281	0.000 67	0	0.041 96	0.000 17	0.000 67	0.002 73
Outside	Tourism: private boating	non-extractive	0.003 26	0.00449	15	0.00116	0.001 26	0.000 01	0.014 04	0.000 23	0.001 26	0.003 91
Outside	Tourism: scuba-diving	non-extractive	0.001 74	0.00438	15	0.00113	0.000 12	0.000 01	0.017 32	0.000 06	0.000 12	0.001 09

Table C.2. Descriptive statistics for the threat reduction capacity index. A negative value of index indicates that the threat intensity is reduced inside the protected area relative to the outside; a positive value of index indicates that the threat intensity is higher inside the MPA relative to the outside. The mean threat reduction capacity values were used to compare the reduction capacity of the fully and partially protected zones for every threat (Fig. 3).

Protection level	Threats	Type	Mean	Standard deviation	Sample Size	Standard error	Median	Min	Max	25%	50%	75%
Fully Protected	Artisanal fishing	extractive	-1	0	18	0	-1	-1	-1	-1	-1	-1
Fully Protected	Recreational fishing: hook and line	extractive	-1	0	18	0	-1	-1	-1	-1	-1	-1
Fully Protected	Recreational fishing: spearfishing	extractive	-1	0	18	0	-1	-1	-1	-1	-1	-1

Fully Protected	Trawlers/purse-seiners	extractive	-1	0	18	0	-1	-1	-1	-1	-1	-1
Fully Protected	Tourism: bathing/tramplng	non-extractive	8.41	23.12	18	5.45	-0.94	-1	83.52	-1	-0.94	2.17
Fully Protected	Tourism: commercial boating	non-extractive	28.36	79.61	18	18.76	-1	-1	301.91	-1	-1	2.91
Fully Protected	Tourism: private boating	non-extractive	237.56	763.16	18	179.88	1.11	-1	3197.31	-1	1.11	18.46
Fully Protected	Tourism: scuba-diving	non-extractive	2386.14	7752.38	18	1827.25	-1	-1	31511.71	-1	-1	-1
Partially protected	Artisanal fishing	extractive	4.93	9.33	32	1.65	2.65	-1	47.12	0.22	2.65	5.28
Partially protected	Recreational fishing: hook and line	extractive	2.39	5.54	32	0.98	0.52	-1	21.96	-1	0.52	2.70
Partially protected	Recreational fishing: spearfishing	extractive	1.97	6.31	32	1.12	-1	-1	24.51	-1	-1	0.63
Partially protected	Trawlers/purse-seiners	extractive	-0.95	0.27	32	0.05	-1	-1	0.47	-1	-1	-1
Partially protected	Tourism: bathing/tramplng	non-extractive	50.55	175.82	32	31.08	-0.11	-1	901.60	-0.87	-0.11	6.66
Partially protected	Tourism: commercial boating	non-extractive	45.74	100.08	32	17.69	9.04	-1	461.24	-0.67	9.04	27.34
Partially protected	Tourism: private boating	non-extractive	26.35	80.78	32	14.28	4.49	-1	400.49	-0.43	4.49	9.68
Partially protected	Tourism: scuba-diving	non-extractive	413.85	1129.49	32	199.67	4.32	-1	5904.77	-1	4.32	217.31