

THE NTZ/MPA PROJECT



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Empowering the legacy:
Scaling up co-managed and financially
sustainable No-Take Zones/Marine
Protected Areas



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The NTZ/MPA project

**EMPOWERING THE LEGACY:
SCALING UP CO-MANAGED AND FINANCIALLY SUSTAINABLE NO-
TAKE ZONES/MARINE PROTECTED AREAS
SAMPLING DESIGN AND ACTIVITY**

INTRODUCTION

In recent decades, coastal regions and ecosystems across the world are facing diverse environmental pressures from, among others, increasing coastal urbanization, industrialization, pollution and overfishing (Worm et al., 2006; McCauley et al., 2015; Halpern et al., 2019).

With respect to fishing activities, the increasing demand for seafood has led to a diffusely unsustainable exploitation of marine resources by the fishing industry worldwide (Golden et al., 2016; FAO, 2020). In addition to professional (i.e., commercial) fishing, a non-negligible impact on coastal resources is caused by recreational fishing (Lloret and Font, 2013; Lloret et al., 2020).

In the Mediterranean Sea, there is an increasing body of scientific evidence showing that recreational fishers can cause significant impacts on marine habitats and especially fish populations. The impact of recreational fishing can be similar, if not greater, compared to that produced by professional fishers (Lewin et al., 2006; Lloret et al., 2008, 2018, 2020), with negative consequences on the economy of local small-scale fishers (Agnew et al., 2009; Cabral et al., 2018). However, it remains very challenging to get reliable estimates of recreational catches (Freire et al., 2020) and to evaluate the overall impact that recreational fishing produces on fish populations (Grati et al., 2021).

Specific assessments on recreational fishing are thus needed to develop adequate measures aimed at regulating such activity especially inside Marine Protected Areas (MPAs) and any other type of protected zones, in general, also via participatory processes and in the wider framework of a sound marine spatial planning.

This study is aimed at collecting data about recreational fishing activities occurring at the Torre Guaceto MPA (hereafter called TGMPA) and in the surrounding areas (Apulia, SE Italy) in order to draft conservation measures based on field data and, hopefully, to contribute to get hints to better orientate the choices about i) how and how much to widen the TGMPA, and ii) how to shape and where to place new “fully protected areas” (FPAs, *sensu* Grorud-Colvert et al., 2021). Specifically, the project was intended as a “survey to assess recreational fishing effort and impact” in the study area, since the

TGMPA management authority is planning to widen its cover and create new FPAs, with the support of WWF-Italy.

SAMPLING DESIGN AND DATA COLLECTION

The original aim of this project was to collect, review and summarise the available data and documentation about recreational fishing in the study area.

Then, the goal was to directly collect data about recreational fishing occurring in the study area by the completion of:

- I. On-site surveys, administered by local interviewers (TGMPA staff) and addressed to recreational fishers operating from the boat, from the shore or underwater (including 'spearfishing'; see Annex I).
- II. An online questionnaire (see Annex II).

Both the data collection form and the questionnaire were developed based on the formats and the methodological framework outlined by the General Fisheries Commission for the Mediterranean, GFCM (Grati et al., 2021). Specifically, following this document, recreational fishing was distinguished into three fishing categories, namely fishing from the coast, a boat and underwater fishing, and into main fishing techniques based on the gear employed, such as harpoons, hand nets, hand-gathering while diving ("Diving (hand)"), spearfishing ("Diving (speargun)"), hooks and lines, traps, and longlines.

On-site surveys

During on-site surveys, the main data to collect concerned the fishers' personal data, practiced fishing category/categories (namely from the boat, the shore or underwater fishing, including 'spearfishing'; Grati et al., 2021), fishing techniques (such as hand-gathering, hooks and lines, traps and speargun), most frequented fishing zones/areas, and catch composition in terms of species, number of individuals, individual weight and size (Annex I).

Concerning the sampling design, initially, data collection should have been carried out in the spring (March-May) and summer (July-September) 2021, with TGMPA staff interviewing fishers approached both at sea (from the boat) and on land (from the shore, along the coastline). Based on the originally proposed sampling design, two on-site surveys, one at sea and one on land, should have been performed per week, at different times of the day. Specifically, each of the two weekly surveys should have been carried out either in the morning (M) or in the late afternoon (A), following an alternating week schedule. For example, if, in a given week, the survey at sea was carried out in the M, the one on

land should have been done in the A, and the following week the schedule should have been reversed. Therefore, the minimum sampling effort would have required 48 half-days of surveys (2 surveys per week, 8 per month, 24 within each of the two three-month periods).

However, due to logistical constraints and for reasons independent of our control, the sampling activity could not be carried out as it was planned (see Results for more details).

Online questionnaire

The online questionnaire aimed at collecting fishers' personal data, the practiced fishing category/categories (namely from the boat, the shore or underwater; Grati et al., 2021), fishing techniques (such as hand-gathering, hooks and lines, traps and speargun), most frequented fishing areas/zones, and yearly costs related to fishing activity (Annex II).

The questionnaire was created as a Google Form (Annex II) whose link has been advertised during public events involving local associations ("Leghe Navali"), published on the TGMPA website and in posters/fliers (Annex III), designed for the purpose, which have been disseminated in fishing/sport shops, beach cafes, in the visitor center of the TGMPA, in the main offices of multiple organizations-associations (Legambiente and local naval associations) and in harbors' notice boards.

RESULTS

No previous data were available, in terms of published literature, about the recreational fishing occurring in the study area. However, we could access the dataset containing the monthly number of recreational fishing permits issued by the TGMPA management body from 2010 to 2021. Currently, recreational fishing can only be practiced inside the C Zone of the TGMPA, with a daily fishing permit, from September 16th to May 14th. In addition, a maximum of 25 permits can be issued per day, in accordance to what specified at this link: <https://www.riservaditorreguaceto.it/index.php/it/l-ente-gestore/normative-e-modulistica/regolamentazione-delle-attivita/277-pesca-sportiva>. Based on the available dataset, a total of 114 fishing permits were issued during 2021. The greatest number of permits was issued in February (N=24) and March (N=26), while no permit was released in May 2021. The number of fishing permits issued in 2021 was six times lower than in 2014, the year when the highest number of permits was released over the last 12 years (Fig. 1).

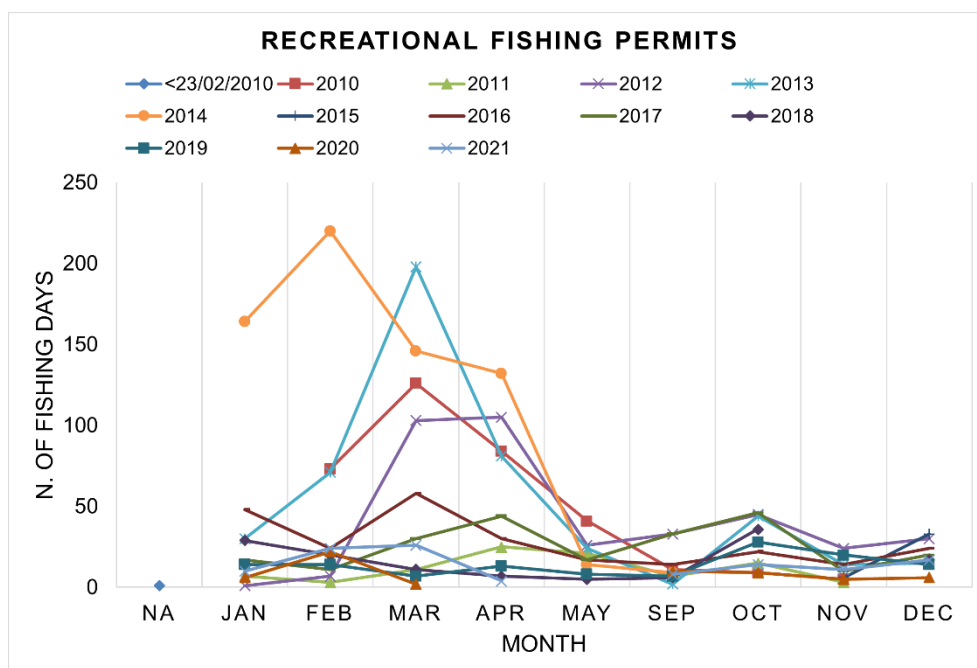


Fig. 1 Number of daily fishing permits issued by month, from 2010 to 2021. Dataset provided by the TGMPA management body.

On-site surveys

On land, two TGMPA staff units were surveying the southern and northern sectors of the coast often during the same day. At sea, one interviewer was conducting surveys from the boat. Based on what declared by the TGMPA staff, on land surveys have been carried out on a total of 25 different dates between late May and late October, while at sea surveys have been conducted at 14 different dates between late May and early September (Fig. 2). On land, at least one interview was conducted at 11 different dates out of the total 25 (44%), while at sea at least one interview was conducted at 13 different dates out of the total 14 (92%). Overall, 32 data collection forms were filled in on land and 26 at sea.

Month		May		Jun							Jul							Aug					Sep					Oct							
Day		22 25		3	5	7	10	16	18	25	30	1	3	9	14	15	21	22	30	8	12	16	19	25	2	3	12	19	21	27	9	15	21	25	
Week		1	2	3	3	4	4	5	5	6	7	7	7	8	9	9	10	10	11	12	13	14	14	15	16	16	17	18	19	20	21	22	23	24	
Time slot	Boat	M	M	A		A		M		M	A			M	M		M	M		M			M		M										
	Shore1	A	A	M	A		M		A		M	A			M	A		M	A		M	A		A	M		A	M	A	M	A	M	A	M	A
	Shore2	M	A	M	A		M		A		M		A			M	A		M	A		M	A		A	M		A	M	A	M	A	M	A	M

Fig. 2 Days on which interviewers reported to have conducted surveys. M = morning, A = afternoon. The orange background indicates the dates for which no interview was available.

During on-site surveys, a total of 58 interviews were conducted, 26 at sea (54 interviewees) and 32 on land (48 interviewees). The number of on-site surveys and interviewees differ since multiple fishers could be interviewed in case their catches were pooled during the same fishing trip (in line with Grati et al., 2021).

Considering only valid data (for two persons the age was not specified), a total of 102 fishers were interviewed (100 men, two women). Overall, they had an age comprised between 5 and 75 years; at sea the majority belonged to the 61-70 age group (N=12 out of 54), while on land to the 41-50 age group (N=21 out of 48) (Fig. 3).

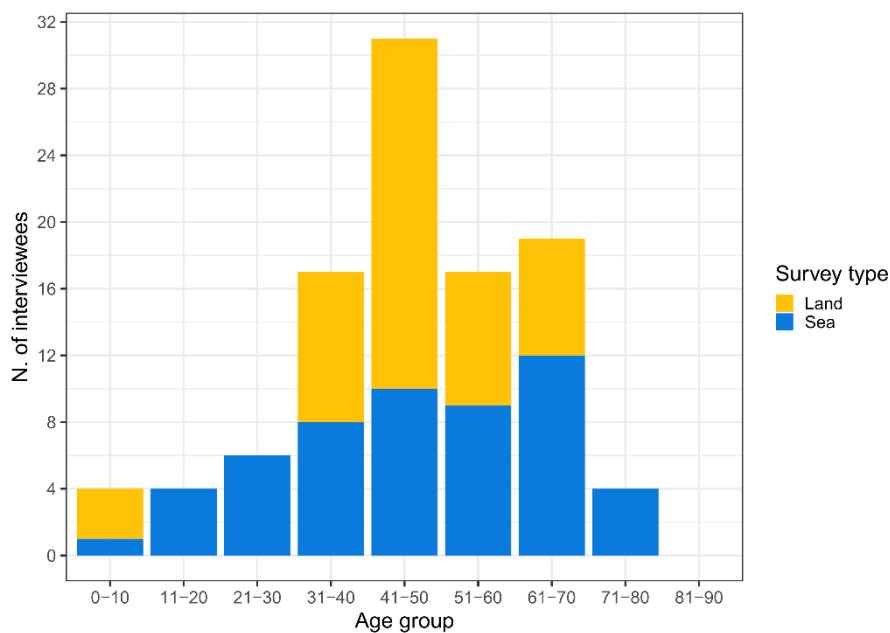


Fig. 3 Age groups of the interviewees during on-site surveys (N=54 fishers interviewed at sea and N=48 on land)

Fishing from the boat and from the shore were recorded as the most common fishing categories (*sensu* Grati et al., 2021) during surveys at sea and on land, respectively (Fig. 4).

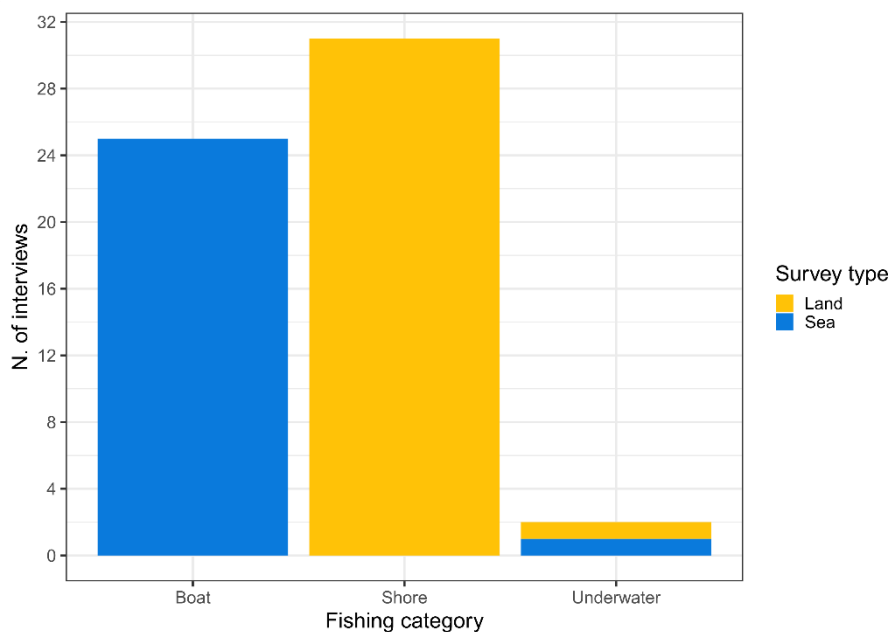


Fig. 4 Main fishing categories (*sensu Grati et al., 2021*) as reported in interviews conducted at sea (N=26) and on land (N=32)

Handlines and hand-operated poles were recorded as the most common fishing techniques (*sensu Grati et al., 2021*), both at sea and on land (Fig. 5). Since, in accordance with the Italian law, spearfishing is not allowed within the TGMPA, it must be noted that this technique was only reported by people that were fishing and interviewed outside the MPA boundaries. In addition, a “traditional” fishing method was also documented, which consists in using a chicken foot attached to a stick, launched from the shore, to catch octopuses.

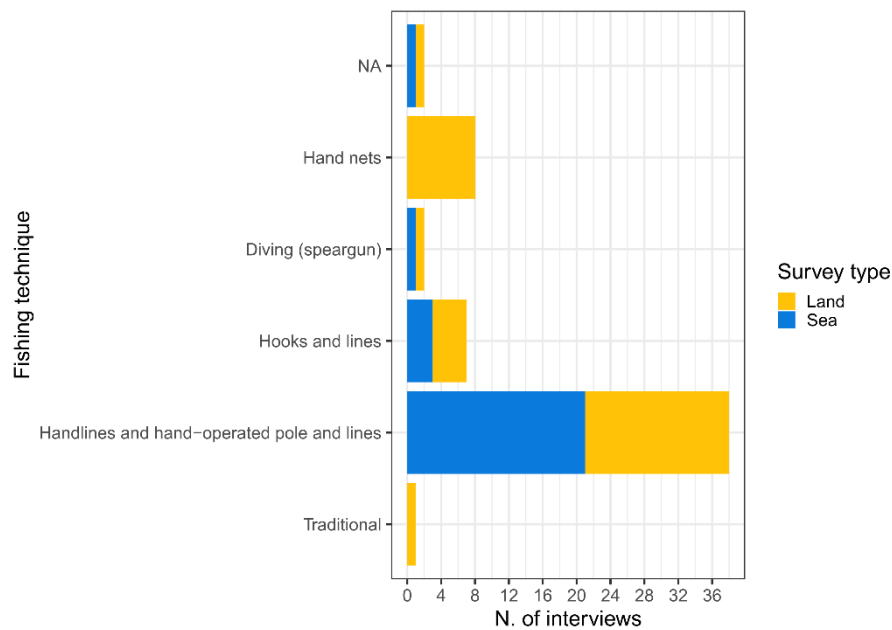


Fig. 5 Main fishing techniques (sensu Grati et al., 2021) used by the respondents (interviews at sea N=26, on land N=32). NA= unavailable data. The “Traditional” method refers to the use a chicken foot attached to a stick, used to catch octopuses

The information collected during the surveys, both at sea and on land, are not unfortunately complete and precise enough to make it possible to estimate fishing effort and catch per unit effort (CPUE).

A list of fish *taxa* occurring in interviewees’ catches (we could consider as ‘target species’ or ‘by-catch/discard/occasional catches’ for recreational fishers) is provided in Table 1.

Table 1 List of fish taxa reported in interviewees’ catches both on land and at sea.

Family	
Genus species	
Blenniidae	Serranidae
	<i>Serranus cabrilla</i>
Coryphaenidae	<i>Serranus scriba</i>
<i>Coryphaena hippurus</i>	
	Pomacentridae
Gobiidae	<i>Chromis chromis</i>
Labridae	Sparidae
<i>Coris julis</i>	<i>Dentex dentex</i>
<i>Thalassoma pavo</i>	<i>Diplodus</i> sp.
	<i>Diplodus sargus</i>
Moronidae	<i>Diplodus vulgaris</i>
<i>Dicentrarchus labrax</i>	<i>Lithognathus mormyrus</i>
	<i>Pagellus</i> sp.
Mullidae	<i>Pagellus erythrinus</i>
<i>Mullus</i> sp.	<i>Sparus aurata</i>
	<i>Spondylisoma cantharus</i>
Scorpaenidae	
<i>Scorpaena</i> sp.	

Besides fishes, interviewees' catches also included the cephalopod *Octopus vulgaris* and crustaceans like *Palaemon serratus* and *Eriphia verrucosa*.

At sea, the greatest number of interviews was conducted along the stretch of coast belonging to the municipality of Carovigno (Fig. 6).

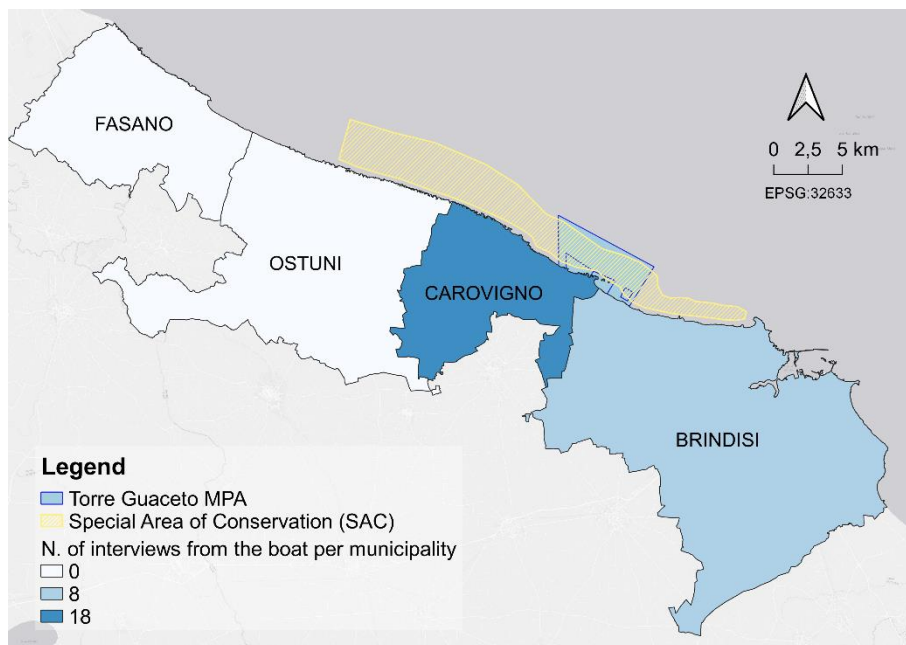


Fig. 6 Map displaying the absolute number of interviews conducted per municipality during on-site surveys from the boat. The closest locations to the coastline were used.

On land, the greatest number of interviews was conducted along the stretch of coast belonging to the municipalities of Brindisi, followed by Ostuni (Fig. 7).

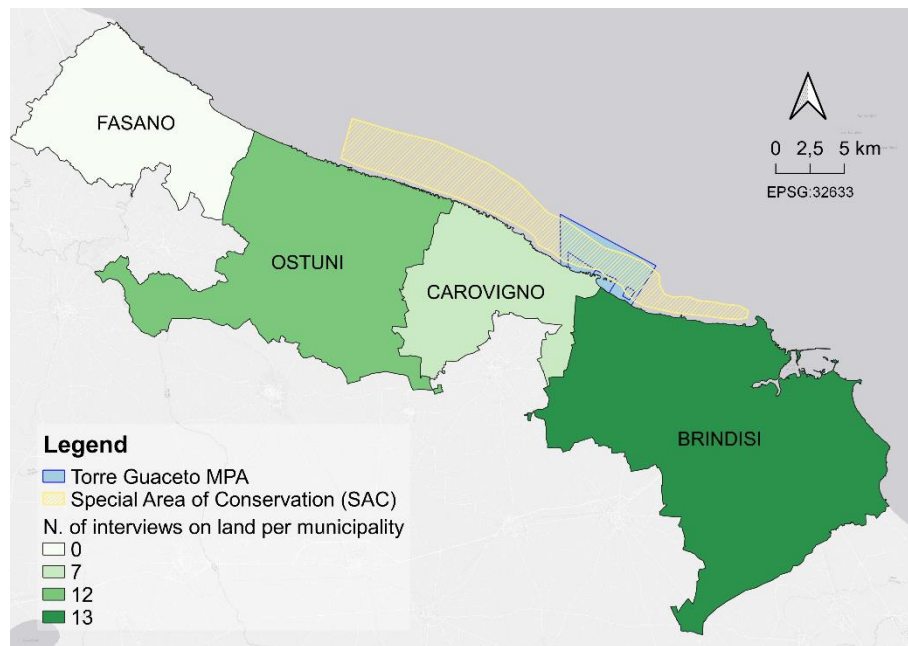


Fig. 7 Map displaying the absolute number of interviews conducted per municipality during on-site surveys on land.

Online questionnaire

On the whole, 16 posters were distributed in as many locations along the coast comprised between Marina di Ostuni, in the north, and Brindisi, in the south (ca. 40 km). Overall, 31 people completed the online questionnaire accessible as a Google Form at this link: <https://forms.gle/tZxmrUgiFAJcdznV6>.

Respondents, mostly males (N=30 out of 31), had an age comprised between 25 and 77 years, with most of them belonging to the 61-70 (N=9) and 41-50 age groups (N=8).

The years of recreational fishing experience ranged from 1 to 60, with most respondents declaring to have around 30 years of experience (Fig. 8).

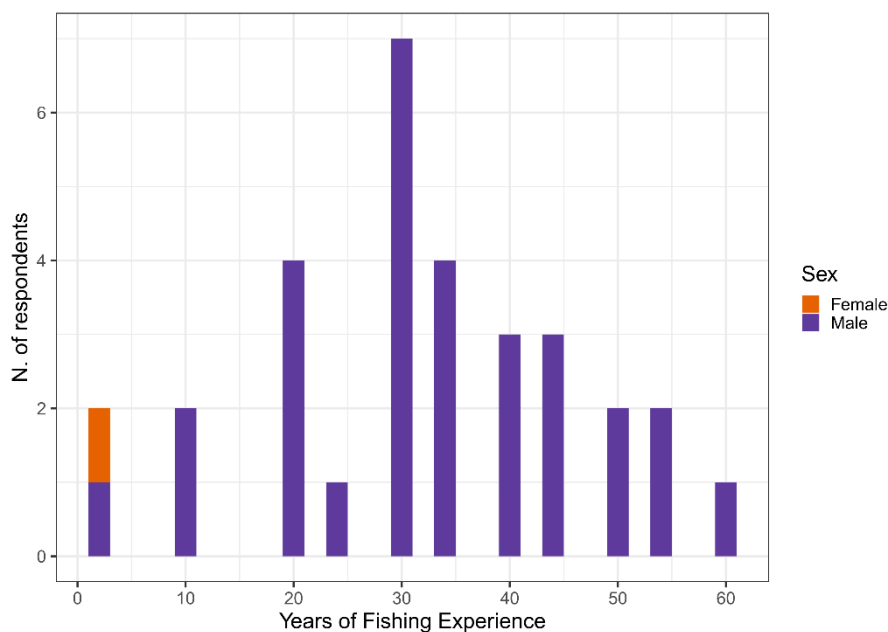


Fig. 8 Years of fishing experience of the respondents (N=31), distinguished by sex.

The most commonly reported fishing category (*sensu* Grati et al., 2021) was the one from the boat (Fig. 9). It must be noted that respondents practicing multiple fishing categories could indicate them in the online questionnaire. Therefore, it is not possible to distinguish answers uniquely by fishing category.

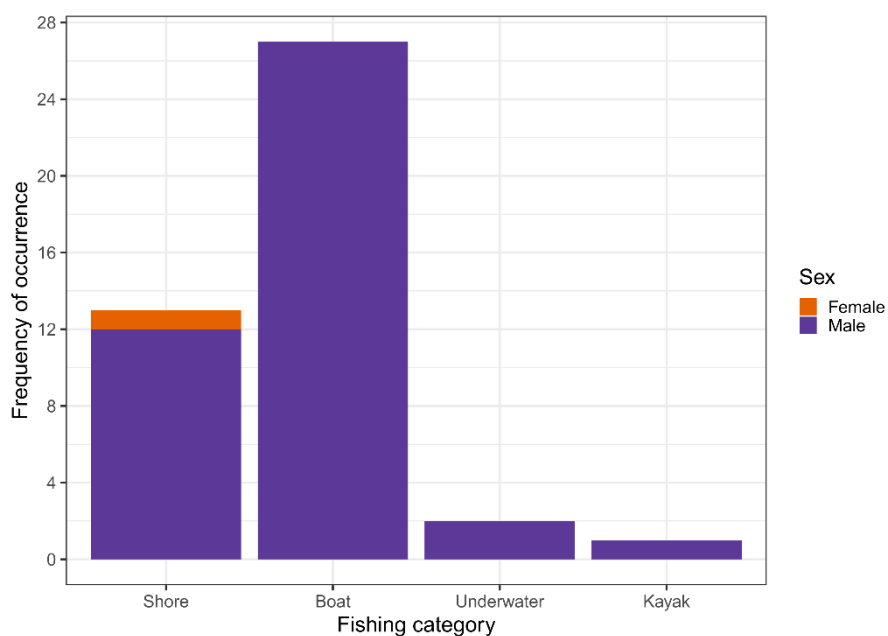


Fig. 9 Main fishing categories (*sensu* Grati et al., 2021) reported by the respondents (N=31), distinguished by sex

The use of hooks and lines was reported as the main fishing technique (Fig. 10).

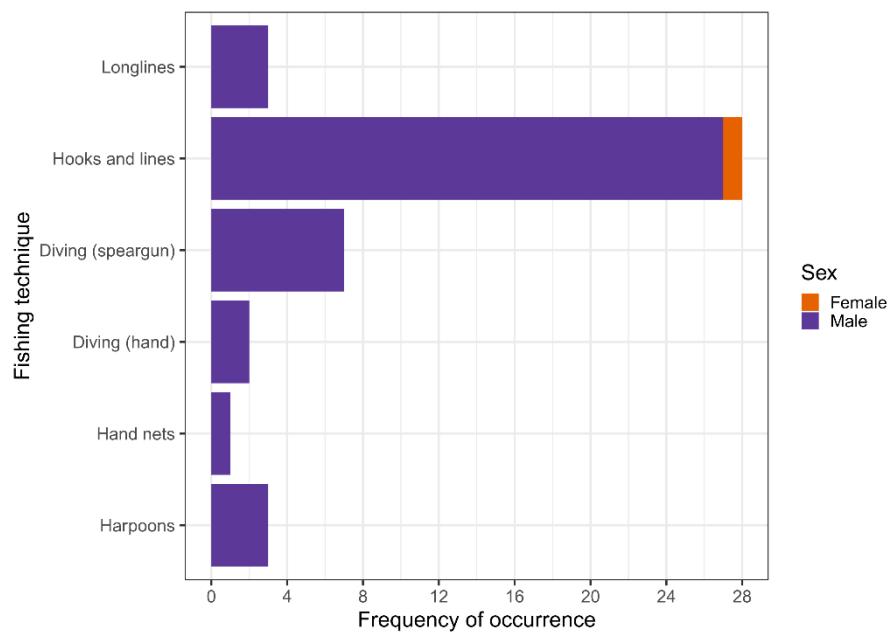


Fig. 10 Main fishing techniques (*sensu Grati et al., 2021*) used by the respondents ($N=31$), distinguished by sex.

Since spearfishing is not allowed within the TGMMPA, in accordance with the Italian law, it is worth noting that spearfishing (diving with a speargun) was only reported by people that either fish ‘only outside the MPA’ or both ‘inside and outside the MPA’ (see Fig. 11).

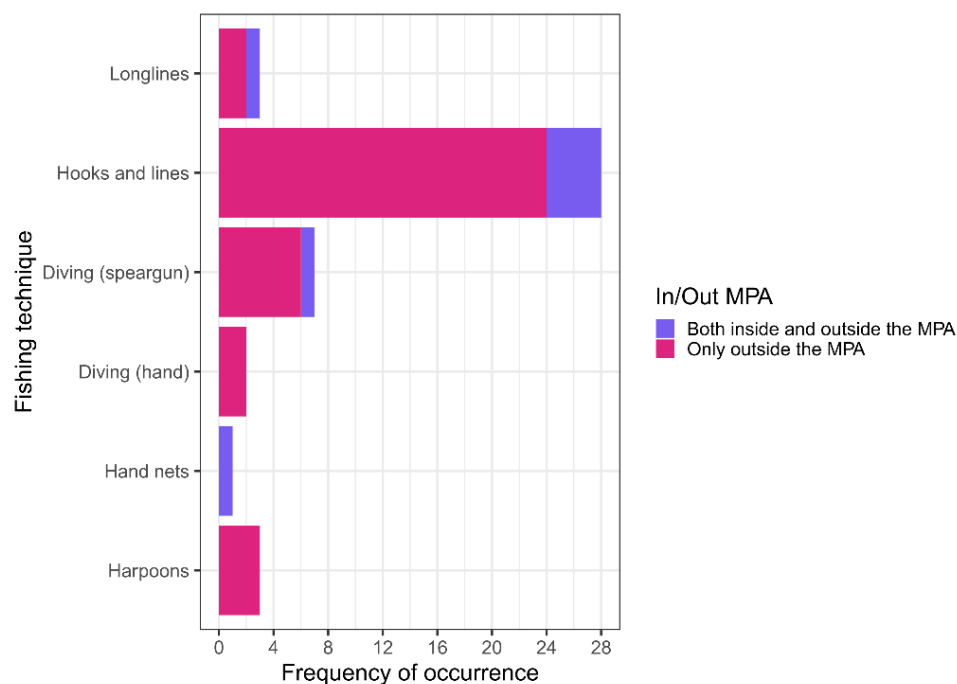


Fig. 11 Main fishing techniques (sensu Grati et al., 2021) used by the respondents (N=31), distinguished by preferential fishing area with respect to the TGMPA boundaries.

Concerning the favorite months to go fishing, two periods are the most preferred by respondents during the year: from spring to summer (March-August) and from late summer to early autumn (September-November) (Fig. 12). When considering a single fishing trip, most respondents declared that they usually fish for 4-5 consecutive hours (Fig. 13).

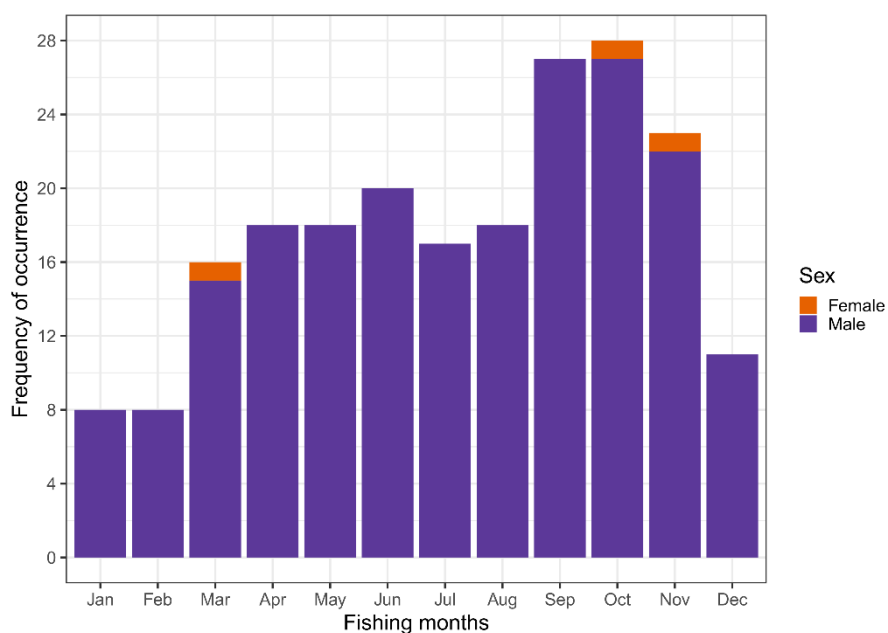


Fig. 12 Favourite fishing months of the respondents (N=31), distinguished by sex.

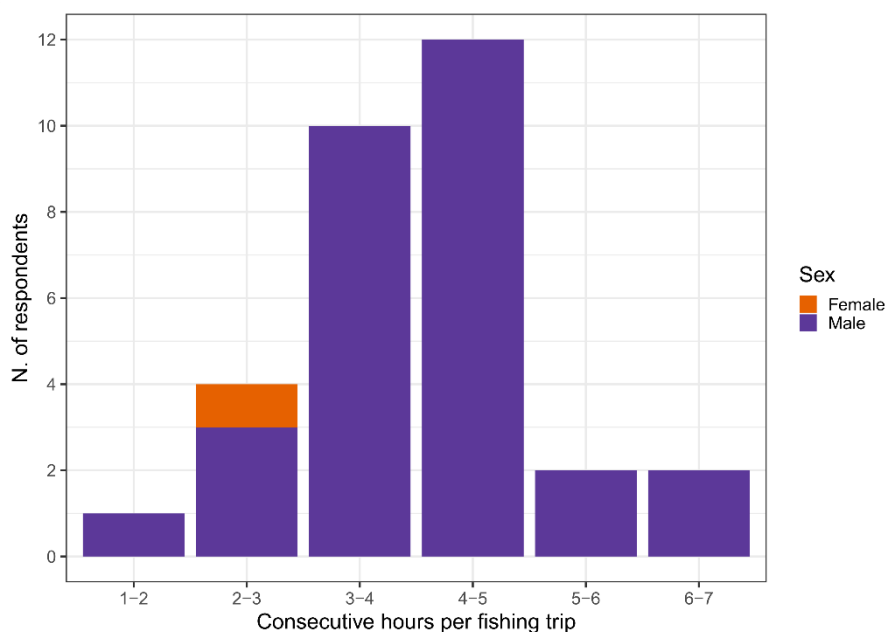


Fig. 13 Average duration (fishing time in hours) per fishing trip (N=31 respondents, distinguished by sex).

During a single fishing trip, 11 respondents out of 31 (35%) declared they do not usually lose any fishing item (e.g., hooks, lines and fishing weights), although the majority of them affirmed to lose, on average, at least 1 item per fishing trip (Fig. 14).

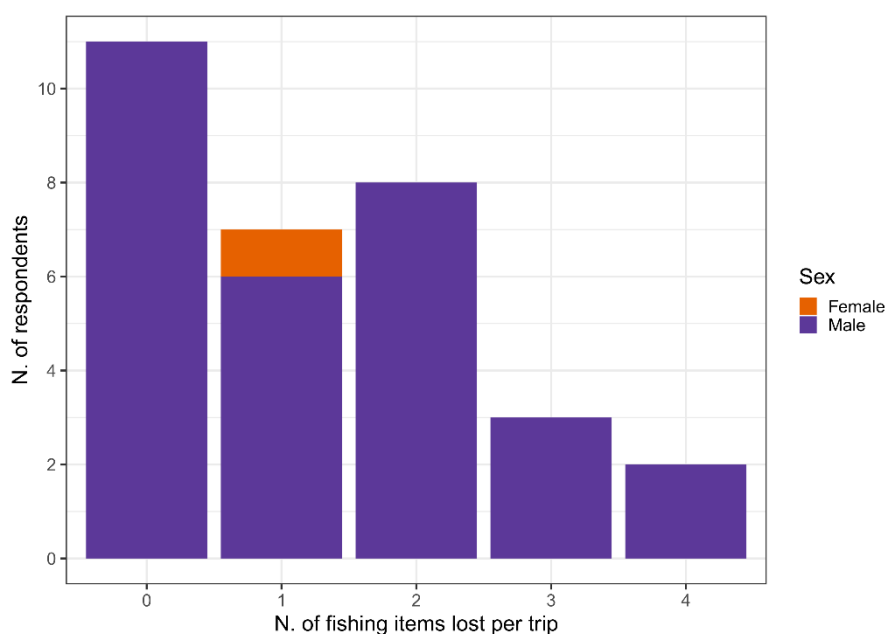


Fig. 14 Number of fishing gear items lost per fishing trip (N=31 respondents, distinguished by sex)

During the year, the main types of expenditure are hooks, lines and artificial baits, followed by the costs related to boat maintenance and fuel purchase (Fig. 15). Average annual expenses range from 100 to 6,000 € (Fig. 16)

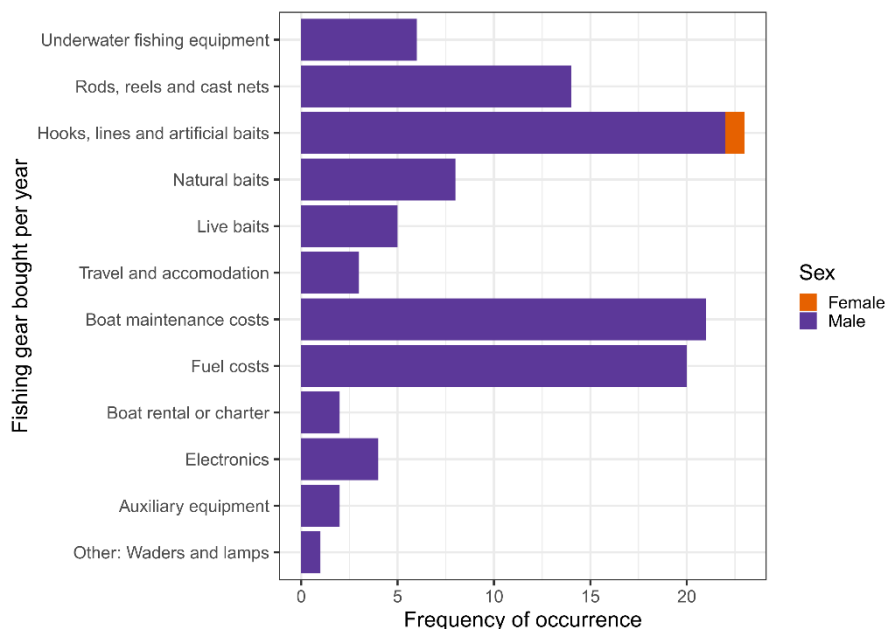


Fig. 15 Main items of expenditure per year (N=31 respondents, distinguished by sex)

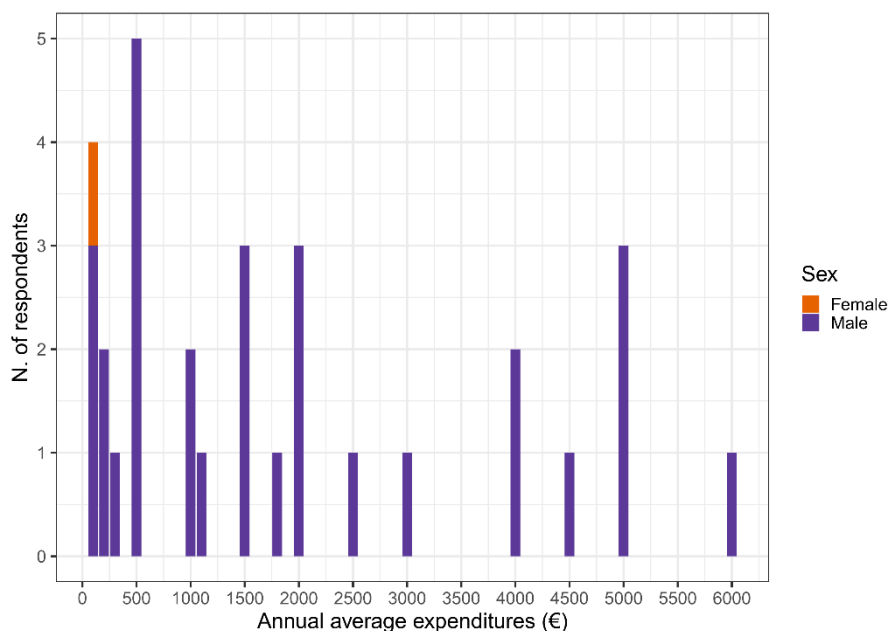


Fig. 16 Average expenditure estimates per year (N=31 respondents, distinguished by sex)

Concerning where the fishing effort was more spatially concentrated, most respondents declared to fish only outside the TGMPA, contrarily to four fishers declaring to fish both inside and outside the TG MPA. In addition, respondents who declared to fish inside the boundaries of the current Special Area of Conservation (SAC) mostly fish off the municipality of Ostuni (Fig. 17).

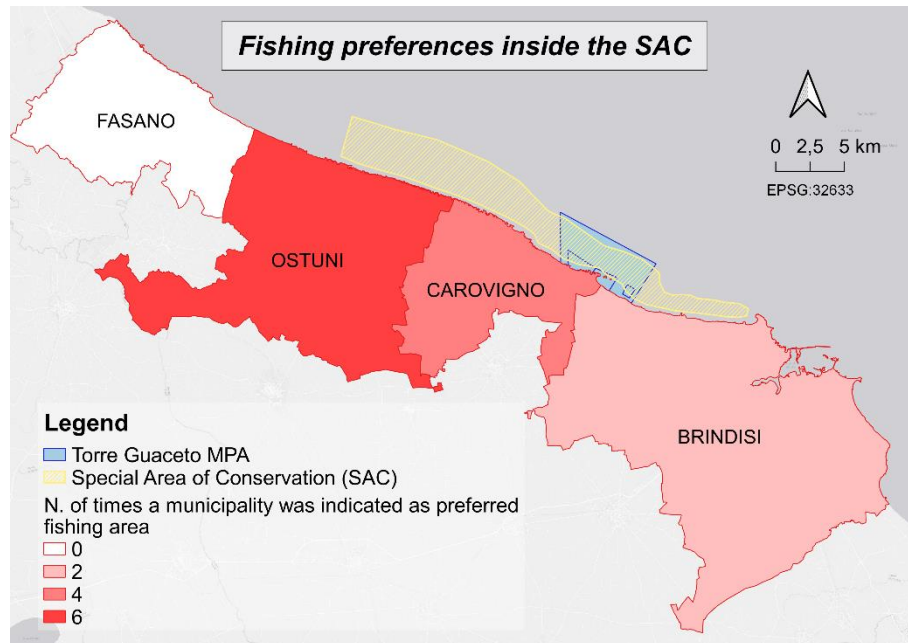


Fig. 17 Map displaying the municipalities off which fishers reported to concentrate their fishing effort inside the SAC. Each municipality's color refers to the absolute number of times it was indicated as preferred fishing area.

Similarly, respondents that declared to fish only outside the boundaries of the current Special Area of Conservation (SAC) mostly fish off the stretch of coast of the municipality of Ostuni (Fig. 18).

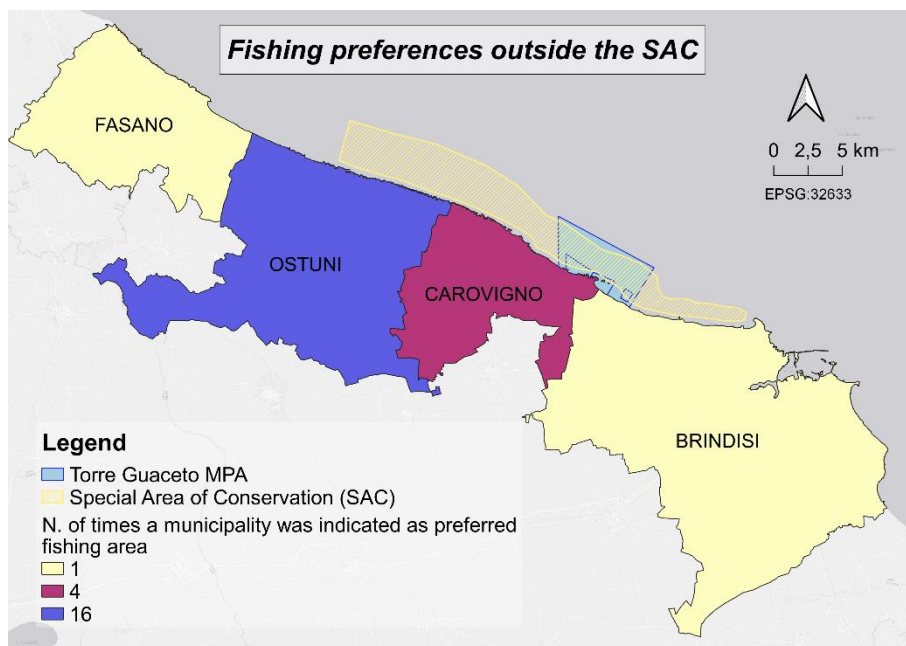


Fig. 18 Map displaying the municipalities off which fishers reported to concentrate their fishing effort outside the SAC. Each municipality's color refers to the absolute number of times it was indicated as preferred fishing area.

CONCLUSIONS

The pieces of information that could be extrapolated from this study allowed us to determine that:

- most of the fishers interviewed on land were aged 41-50 years old, while most of the fishers interviewed at sea and most of the respondents to the online questionnaire were aged 61-70 years old;
- considering the on-site surveys, most fishers reported to engage in fishing from the coast and/or a boat, with underwater fishing being the least represented fishing category;
- considering the on-line questionnaire, most respondents reported to fish more frequently from a boat than from the coast, with underwater fishing being, once again, the least represented fishing category;
- the most employed fishing techniques were handlines and hand-operated poles and lines (on-site surveys) and, in more generic terms, hooks and lines (online questionnaire);
- fishes belonging to the families Serranidae and Sparidae have been the most frequently reported during on-site surveys, especially those conducted at sea. Surprisingly, no fish belonging to the Mugilidae and Scombridae families has ever been reported;
- overall, considering both the on-site and on-line surveys, the reported fishing spots are located along and off the coastline stretching from the location "Torre Canne", in the north, to the city of Brindisi, in the south (Fig. 19);

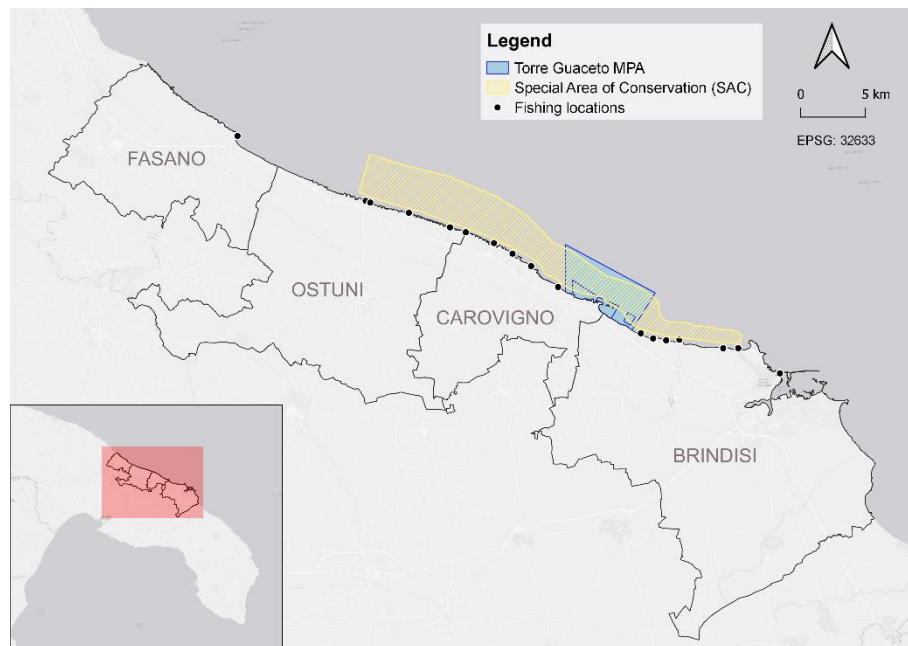


Fig. 19 Map displaying all the fishing spots reported during both on-site and online surveys

- in relation to the boundaries of the Special Area of Conservation (SAC) and based on what emerged from on-site surveys from the boat and the online questionnaire, the recreational fishing effort seems to be spatially concentrated off the Ostuni and Carovigno municipalities, thus in the northern SAC area. This suggests that placing new “fully protected areas” (FPAs) in the southern area of the SAC (off the Brindisi municipality) could reduce conflicts with local recreational fishers;
- the economic value of the local recreational fishing was estimated around 58,000 € per year based on the estimates of average annual expenditures by the 31 respondents to the online questionnaire.

To properly interpret the above-reported results, it is worth taking into account that the analysis of the recreational fishing occurring in the TGMPA and its surroundings could not be conducted thoroughly due to non-negligible limitations in data collection, both at sea and on land. Specifically, the data collection conducted by TGMPA staff did not meet the minimum requirements of our initially proposed sampling design since:

- data collection has been carried out in May-October and not in the spring (March-May) and summer (July-September) of 2021, as it was originally planned. Therefore, overall, approximately 5 months were sampled in a single temporal window against the 6 originally planned within two separate time windows;
- specifically, surveys from the boat were conducted only from late May to early September (approximately 3 months), while surveys on land occurred from late May to late October

- (approximately 5 months). However, no fisher was met, and thus interviewed, during surveys on land from July to September. This does not match with the fact that most respondents to the online questionnaire indicated September as the second-preferred month for fishing through the year, likely outside the MPA since only 8 fishing permits were released in September 2021;
- both types of on-site surveys, one at sea and one on land, were only conducted during 14 out of the total and expected 24 weeks of sampling.

In addition, we have to report that the collected data are quite often i) inconsistent, ii) incomplete, and iii) imprecise:

- i. the filled fields were not always consistent across data forms, thus making it complicate to compare collected data sets. As an example, sometimes only the weight, on other occasions the length or the abundance of caught fish was indicated during the interviews carried out from the boat;
- ii. in general, the data are characterized by a lack of completeness (not all fields have been filled with recorded values). As an example, the data collection form used in the current project was characterized by two free-text fields to record the personal data disclosed by interviewees eager to be contacted again (name, surname and a contact detail) and any other appropriate comment by the interviewees. However, the telephone number of the fisher/s was not always written down (preventing the possibility to obtain additional data or verify collected information) and/or the comment field was used to record either irrelevant information (e.g., fishing habits of the interviewee) or relevant but generic responses that should have been detailed in more appropriate sections. In addition, since responses like 'prefer not to say' and 'no response' have not been included wherever appropriate, we could not understand if the question was asked but the interviewee did not reply or if the response was missing or unknown for some reason;
- iii. the collected data are often imprecise since some records have not a meaningful value. As an example, it was required to indicate the exact age of the interviewee/s in the questionnaire. However, in multiple cases the age was just estimated, like "45-50 years". This prevented the possibility to use absolute age values for research purposes, only age groups. Then, a generic or ambiguous terminology was sometimes used. As an example, sometimes the species, in other occasions just the genera of caught fish was indicated (e.g., "Diplodus vulgaris" vs "Diplodus"). In addition, fish catches were often characterized using local fish names. However, as fish common names change from region to region in Italy, interviewers should have either indicated their corresponding Italian common name or directly the scientific name in Latin to avoid any misinterpretation.

Data quality could have been improved (as it was suggested on multiple occasions) i) before the start of data collection, ii) at its very beginning, and iii) when it was ongoing:

- i. training the staff in charge of interviewing recreational fishers within MPAs is crucial in any project dealing with similar issues. However, despite we declared ourselves willing to train the staff units selected by the TGMPA and charged to run the data collection, we did not receive any feedback or availability to follow a remote or in person training;
- ii. we repeatedly asked the TGMPA staff to contact us and discuss about any possible issue or limit of the data collection form not only when we designed it, but also at the very beginning of data collection. However, no request for discussion/clarification has ever been made;
- iii. we specifically asked to make data forms available in a shared folder once completed, so that we could check the way information was collected and highlight any gaps. Unfortunately, despite our multiple requests, filled-in data sheets were not uploaded on a regular basis and we could not make up for the poor-quality data *ex post*.

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ANNEX I

Data collection form used during on-site surveys

SCHEDA DI RACCOLTA DATI

1

Il presente questionario è stato preparato nell'ambito del progetto "Un futuro per il Mar Mediterraneo: Aree Marine Protette e co-gestione della pesca", finanziato da MAVA Foundation e coordinato dal WWF.

L'obiettivo di questo progetto è migliorare la gestione delle Aree Marine Protette e supportare la creazione di nuove zone di protezione integrale in 10 paesi del Mediterraneo, attraverso percorsi di co-gestione con i pescatori locali.

A Torre Guaceto vogliamo supportare l'ampliamento dell'Area Marina Protetta attraverso un processo partecipativo che coinvolga anche i pescatori ricreativi locali. La pesca ricreativa è, infatti, tra le attività più popolari lungo le coste Mediterranee e si stima rappresenti il 10 % della produzione ittica totale del Mediterraneo (fonte UE). Ma gli studi a disposizione sono ancora molto pochi o perfino assenti, come lungo le coste pugliesi.

Il presente questionario ha l'obiettivo di raccogliere informazioni relative alla pesca ricreativa nell'area di Torre Guaceto e dintorni per contribuire ad una maggiore conoscenza e avviare un percorso partecipativo.

Le tue risposte saranno trattate in forma anonima a scopo di rilevazione statistica e di ricerca scientifica.

Data _____ Ora _____ Luogo _____ Intervista N. _____

Informazioni raccolte da: ☐ 1 pescatore ☐ diversi pescatori (se catture aggregate)

N° pescatori ☐ _____

età

N° pescatori ☐ _____

età

Disponibile/i a essere ricontattato/i per indagini future? Se sì, indicare almeno un nome e numero di cellulare

Sito/Area di pesca

Località/Città _____

Distanza dalla costa (miglia nautiche) _____

Latitudine _____

Longitudine _____

Tempo di pesca totale

Inizio

Fine

Data

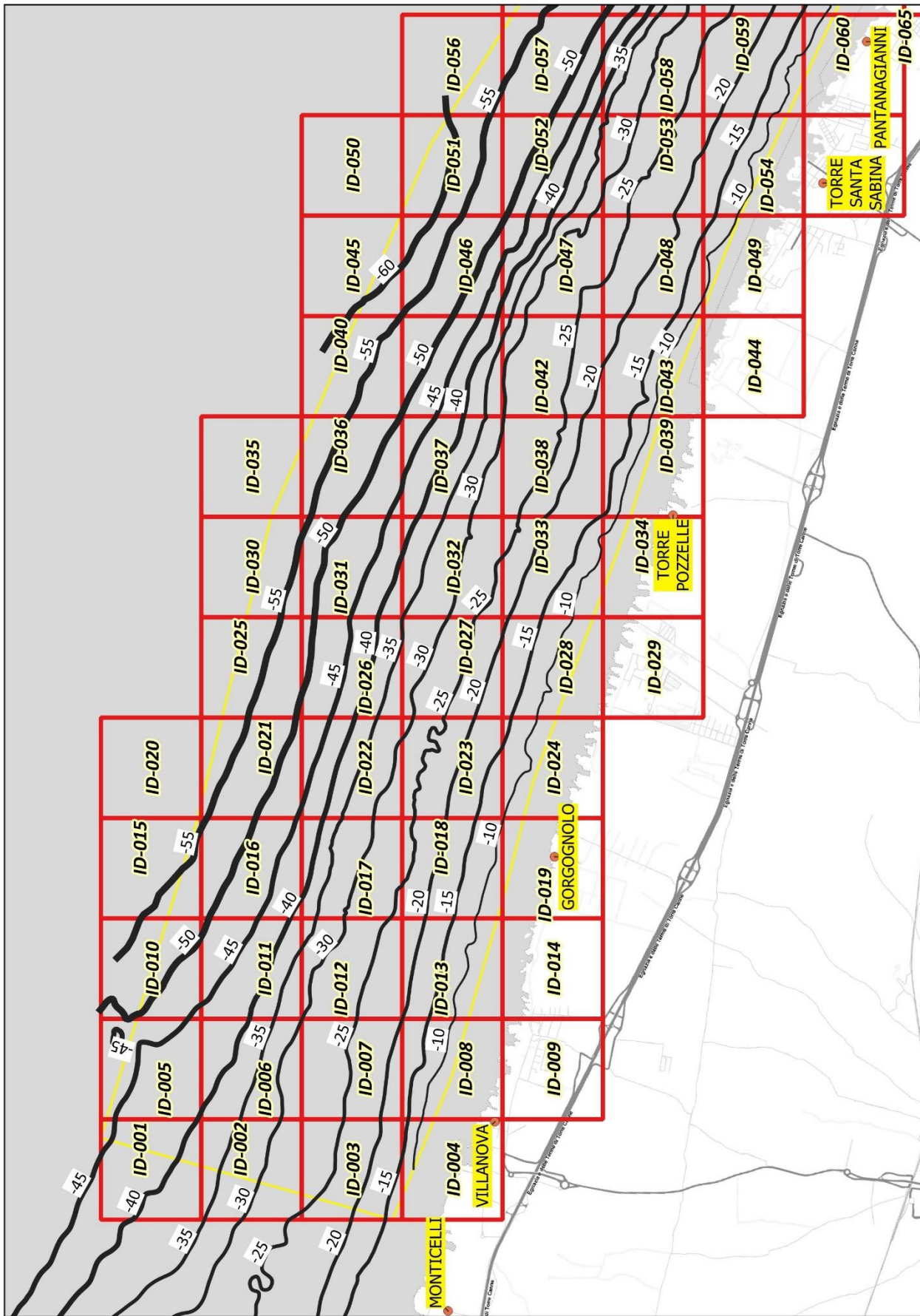
Ora

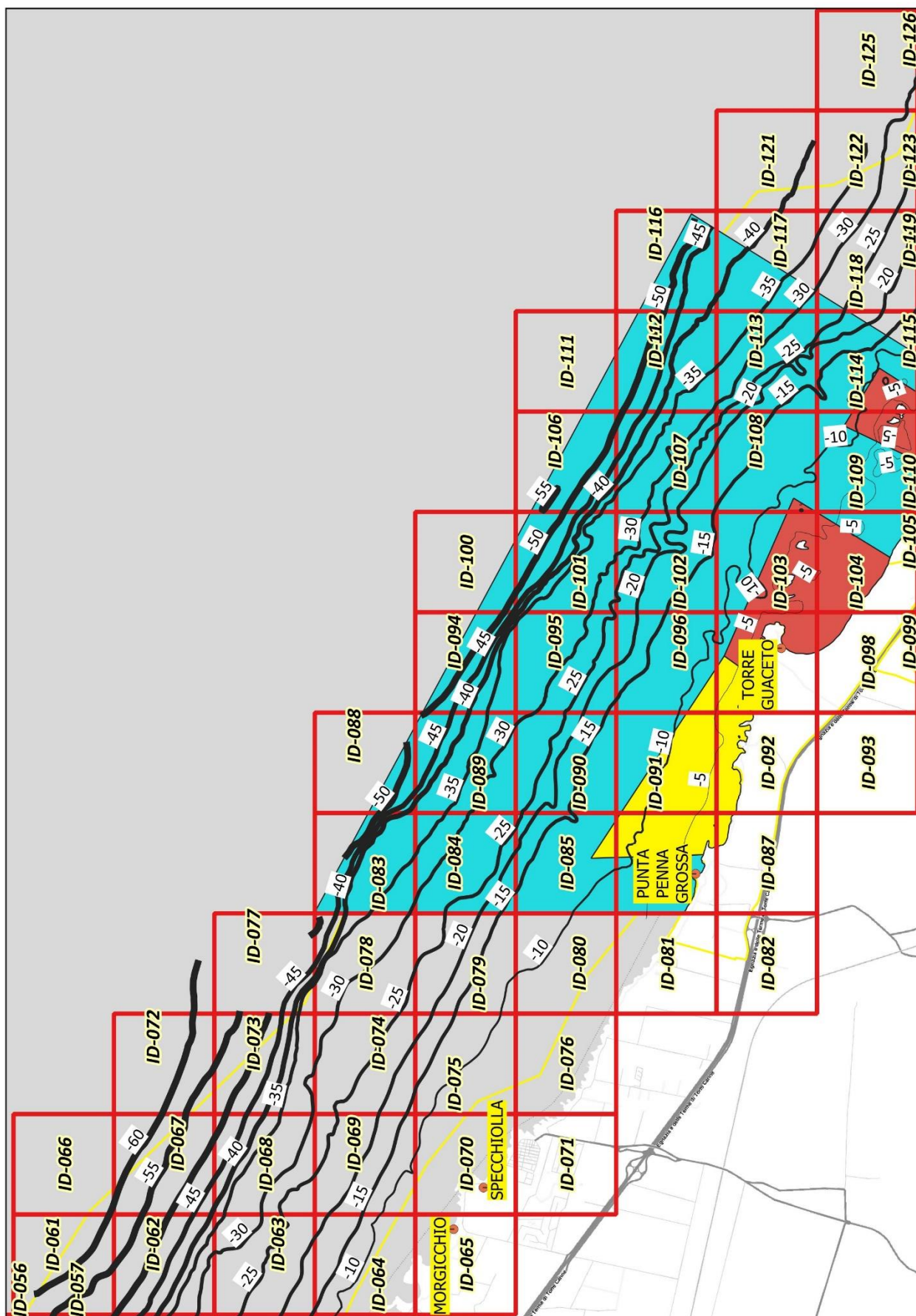
N° di uscite di pesca fatte nell'ultimo anno: _____ da barca _____ da terra _____ in apnea

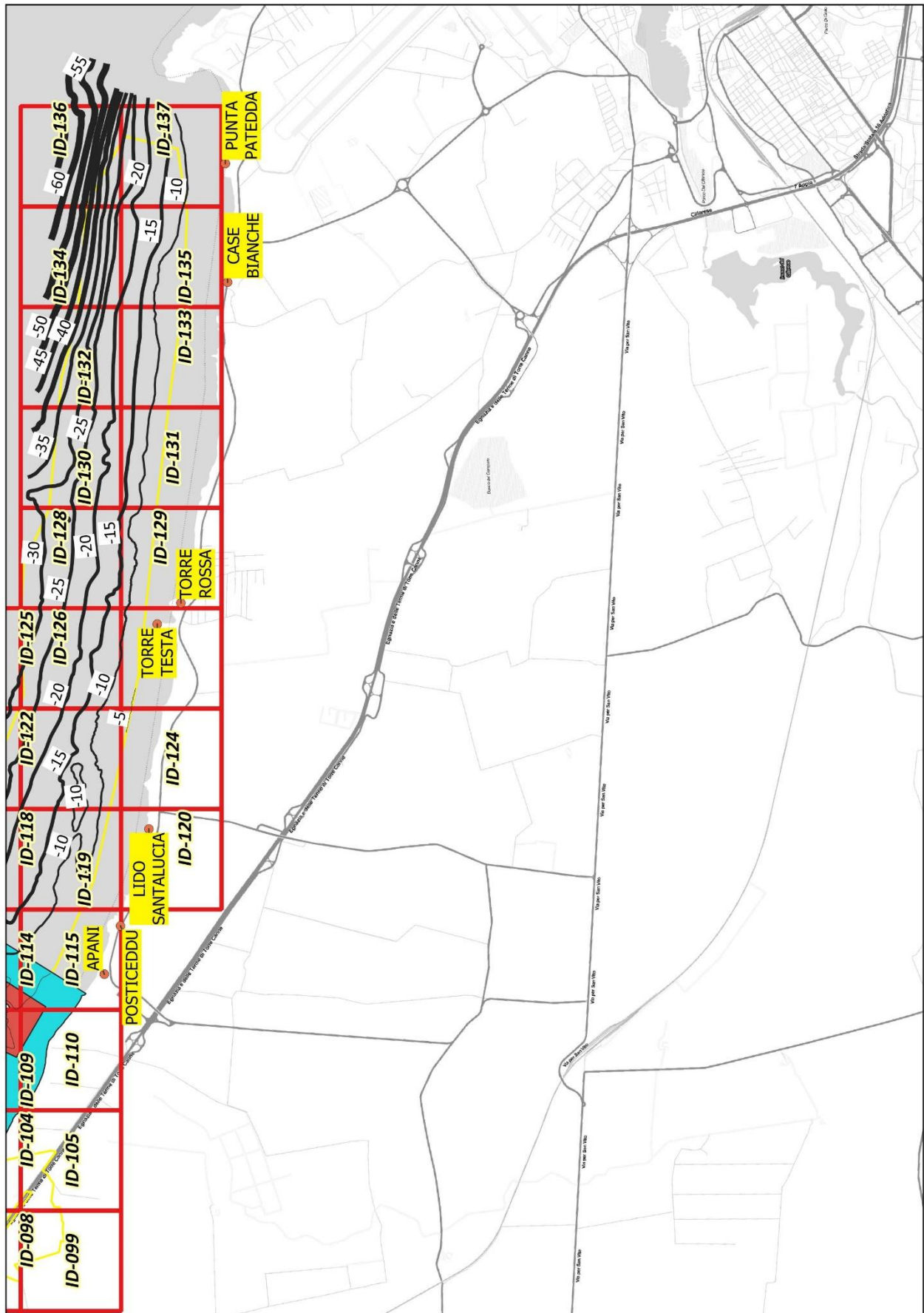
Fai parte di un'associazione di pescatori sportivo-amatoriali o una lega navale? Se sì, indica il nome

Commenti:

Indicare le aree di pesca maggiormente frequentate (segnare le celle)







SCHEMA DI RACCOLTA DATI

5

Attrezzo	Codice attrezzo	Modalità di pesca			N° ore di pesca tot (per attrezzo)	N° unità usate per attrezzo*
		Barca	Terra	Apnea		
Manuale (fiocina, rastrello)	MHI					
Guadini o coppi (retini a mano)	MSP					
In apnea a mano	MDH					
In apnea con fucile subacqueo	MDS					
Ami e lenze ¹	LX					
Lenze a mano e lenze a canna ²	LHP					
Palangari	LL					
Trappole, nasse incluse	FIX					
Reti da lancio (giacchio, rezzaglio)	FCN					
Reti da sollevamento (bilance)	LN					
^{1,2} da specificare nelle righe sotto						

Animali catturati/rilasciati

N°	Codice attrezzo	Specie catturata/rilasciata	Lunghezza **	Peso (g)	N° animali	
					Trattenuti	Rilasciati
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						

*Esempio: n° di ami totale = n° ami per canna da pesca × n° di canne da pesca

**Pesci: lunghezza totale (cm); Cefalopodi: lunghezza del mantello (cm); Crostacei: lunghezza carapace (mm)

ANNEX II

Online questionnaire available as a [Google Form](#)

La pesca ricreativa a Torre Guaceto e nelle aree limitrofe

Il presente questionario è stato preparato nell'ambito del progetto "Un futuro per il Mar Mediterraneo: Aree Marine Protette e co-gestione della pesca", finanziato da MAVA Foundation e coordinato dal WWF. Il questionario ha l'obiettivo di raccogliere informazioni relative alla pesca ricreativa nell'area di Torre Guaceto e nei suoi dintorni.

Le tue risposte saranno trattate in forma anonima. I dati raccolti attraverso il sondaggio saranno utilizzati a scopo di rilevazione statistica e di ricerca scientifica.

Grazie per il tempo che dedicherai a questo sondaggio

DATI PERSONALI

1. Genere (*scelta da menu a tendina*)

- > Maschile
- > Femminile

2. Anno di nascita

3. Comune di nascita

4. Comune di residenza

INFORMAZIONI SULLA TUA ATTIVITÀ DI PESCA – parte 1

5. Da quanti anni peschi?

6. Fai parte di un'associazione di pescatori sportivo-amatoriali o una lega navale? Se sì, indica il nome

7. Peschi nella Zona Speciale di Conservazione di Torre Guaceto? (indicata nella mappa dai confini gialli)

NELLA ZONA SPECIALE DI CONSERVAZIONE

8. Presso o al largo di quale località peschi più spesso?

9. A che profondità (metri) peschi di solito?

FUORI DALLA ZONA SPECIALE DI CONSERVAZIONE

10. Presso o al largo di quale località peschi più spesso?

11. A che profondità (metri) peschi di solito?

INFORMAZIONI SULLA TUA ATTIVITÀ DI PESCA – parte 2

12. In quali mesi dell'anno peschi più spesso?

(scegli tutte le risposte pertinenti)

- Gennaio
- Febbraio
- Marzo
- Aprile
- Maggio
- Giugno
- Luglio
- Agosto
- Settembre

- Ottobre
- Novembre
- Dicembre

13. Quanti giorni peschi all'anno, in media?

- ☐ 1-5
- ☐ 6-10
- ☐ 11-20
- ☐ 21-30
- ☐ 31-40
- ☐ 41-50
- ☐ 51-60
- ☐ 61-70
- ☐ 71-80
- ☐ 81-90
- ☐ 91-100
- ☐ >100
- ☐ Altro: _____

14. Per quante ore consecutive peschi in ogni uscita, in media?

- ☐ 1-2
- ☐ 2-3
- ☐ 3-4
- ☐ 4-5
- ☐ 5-6
- ☐ 6-7
- ☐ 7-8
- ☐ >8
- ☐ Altro: _____

15. Quali tipi di pesca pratichi?

(scegli tutte le risposte pertinenti)

- Pesca da terra
- Pesca da barca
- Altro (specificare per es. se in *Kayak*) _____

16. Specifica se utilizzi dispositivi ausiliari come:

(scegli tutte le risposte pertinenti)

- ☐ Esche luminose (luci stroboscopiche, chimiche, ecc,)
- ☐ Mulinello elettrico
- ☐ Salpa palamiti/palangari
- ☐ Motore elettrico per il Kayak
- ☐ Motore elettrico di prua collegato al GPS (Motor guide, Minn Kota o altro)
- ☐ Nessuno

17. Quale tecnica di pesca pratichi più frequentemente?

(scegli fino a 5 opzioni)

- ☐ Con fiocina e/o arpione a mano
- ☐ Rastrello
- ☐ Con guadino e/o coppo (retini a mano)
- ☐ In apnea a mano
- ☐ In apnea con fucile subacqueo
- ☐ Ami, lenze con o senza canne
- ☐ Palamiti o palangari
- ☐ Trappole, nasse incluse
- ☐ Reti da lancio (giacchio, rezzaglio o sparpiero)
- ☐ Reti da sollevamento (bilance)
- ☐ Altro: _____

18. Se hai indicato “Ami, lenze con o senza canne” specifica le sotto-tecniche che usi più spesso:

(scegli fino a 3 opzioni)

- ☐ Pesca con galleggiante
- ☐ Nattelli
- ☐ Pesca “leggera” a fondo su fondi sabbiosi (*Beach ledgering*)
- ☐ Pesca “pesante” a fondo su fondi sabbiosi (*Surfcasting*)
- ☐ Pesca a fondo su fondale roccioso
- ☐ Bolentino costiero
- ☐ Bolentino di profondità
- ☐ Correntine
- ☐ *Drifting*
- ☐ *Light drifting*
- ☐ Traina di superficie
- ☐ Traina di fondo (con piombi affondatori o *monel*)
- ☐ Pesca ai totani, calamari e seppie
- ☐ Pesca ai polpi
- ☐ Tecniche verticali (*Vertical Jigging*: *tenya*, *kabura*, *inchiku*, *slow pitch*, *jig* di varie forme e peso, *sabiky*, ecc...)
- ☐ *Spinning*
- ☐ Altro _____

19. Quali pesci peschi più frequentemente?

(scegli fino a 5 opzioni)

- ☐ Cernie
- ☐ Ricciola
- ☐ Corvina

- ☐ Scorfani
- ☐ Triglie
- ☐ Spigola o branzino
- ☐ Cefali
- ☐ Orata
- ☐ Dentice
- ☐ Pagello e pagro
- ☐ Saraghi
- ☐ Occhiata
- ☐ Lampuga
- ☐ Aguglia
- ☐ Suro (sauro, sugarello o occhialone)
- ☐ Leccia
- ☐ Palamita
- ☐ Pesce serra
- ☐ Sgombri
- ☐ Altri _____

20. Per i 5 pesci che hai indicato in precedenza, indica la media approssimativa delle catture annuali per ogni pesce

(e.g. spigola: 10 individui catturati; sarago: 25 individui catturati; lampuga: 2 individui catturati)

21. Quali pesci, tra quelli che catturi, scarti spesso?

(indica fino a 5 specie)

22. In relazione ai pesci che hai indicato in precedenza, qual è la principale ragione per la quale li scarti?

(scegli tutte le risposte pertinenti)

- ☐ Pratico il *catch and release*
- ☐ Taglia delle catture considerata troppo piccola per essere di interesse
- ☐ Specie senza valore gastronomico
- ☐ Specie non obiettivo della pesca
- ☐ Altro: _____

23. Quanta attrezzatura da pesca (ami, lenza, piombi, ecc.) perdi in media ad ogni uscita?

- ☐ nessuna
- ☐ 0-1
- ☐ 1-2
- ☐ 2-3
- ☐ 3-4
- ☐ >5

PESCA E PROTEZIONE MARINA

Rispetto ai confini dell'Area Marina Protetta di Torre Guaceto, peschi:

- > Solo al di fuori dell'area protetta
- > Solo dentro l'area protetta
- > Sia dentro che fuori l'area protetta

OPINIONI SE PESCHI SOLO DENTRO L'AMP

24. Cos'è cambiato dall'istituzione dell'Area Marina Protetta di Torre Guaceto?

- ☐ alcune specie di pesci non le pesco più
- ☐ adesso pesco anche altre specie di pesci
- ☐ non è cambiato nulla
- ☐ non so
- ☐ Altro: _____

OPINIONI SE PESCHI SIA DENTRO CHE FUORI L'AMP

25. Cos'è cambiato dall'istituzione dell'Area Marina Protetta di Torre Guaceto?

- ☐ alcune specie di pesci non le pesco più
- ☐ adesso pesco anche altre specie di pesci
- ☐ passo meno tempo a pescare nell'area protetta rispetto all'esterno
- ☐ passo più tempo a pescare nell'area protetta rispetto all'esterno
- ☐ non è cambiato nulla
- ☐ non so
- ☐ Altro: _____

OPINIONI SE PESCHI SOLO FUORI L'AMP

26. Cos'è cambiato dall'istituzione dell'Area Marina Protetta di Torre Guaceto?

- ☐ alcune specie di pesci non le pesco più
- ☐ adesso pesco anche altre specie di pesci
- ☐ pesco vicino ai suoi confini
- ☐ non è cambiato nulla
- ☐ non so
- ☐ Altro: _____

INFORMAZIONI RELATIVE ALLE SPESE

27. Quali sono le tue principali voci di spesa in un anno?

(Scegli tutte le opzioni pertinenti)

- ☐ Fucile e attrezzatura subacquea (maschera, pinne, muta, ecc.)
- ☐ Attrezzatura come canne, mulinelli, raffi e retini
- ☐ Ami, lenze, piccola ferramenta (piombi, girelle, ecc.) ed esche artificiali
- ☐ Esche naturali

- Esche vive
- Viaggio, vitto e alloggio
- Manutenzione della barca e costi di rimessaggio o posto barca
- Carburante
- Noleggio barca e/o servizio charter di pesca
- Dispositivi elettronici (GPS, radar, etc..)
- Dispositivi ausiliari (motori elettrici per *Kayak* o di prua, salpa palamito, ecc.)
- Altro: _____

28. In un anno, in media, quanto spendi (€) considerando l'insieme delle voci di spesa che hai selezionato? _____

RECAPITI

29. Saresti disponibile ad essere ricontattato qualora avessimo bisogno di altre informazioni e per conoscere i risultati del progetto?

30. Se sei d'accordo, lasciaci il tuo contatto (nome, email)

Poster/flier encoding the direct link (QR code) to the online questionnaire

UN FUTURO PER IL MAR MEDITERRANEO: AREE MARINE PROTETTE E CO-GESTIONE DELLA PESCA



PAROLA D'ORDINE: CO-GESTIONE

I sistemi di co-gestione dove pescatori, ricercatori, amministrazioni e ONG collaborano per identificare soluzioni condivise, rappresentano lo strumento migliore per garantire una gestione efficace del mare e una pesca sostenibile dal punto di vista ecologico e socio-economico, come sostenuto anche dalla Commissione Europea (CE) e dalla Commissione Generale per la Pesca nel Mediterraneo della FAO (GFCM).

MEDITERRANEO A RISCHIO, QUALI SOLUZIONI?

Lo sfruttamento eccessivo delle risorse marine rischia di compromettere la salute e la prosperità non solo del Mar Mediterraneo, ma anche di tutti coloro che dipendono dal mare, come i pescatori.

È stato però dimostrato che le Aree Marine Protette (AMP) e le relative aree a protezione integrale (NTZ), se gestite efficacemente, aumentano il numero e la dimensione dei pesci presenti sia dentro che fuori i propri confini, con conseguenti benefici socio-economici per le comunità locali.

Tuttavia, le AMP efficacemente gestite a mare rappresentano meno del 2% della superficie totale del Mar Mediterraneo, mentre le NTZ ne rappresentano solo meno del 0.05%.

OBIETTIVO

Migliorare la gestione delle AMP e supportare la creazione di nuove NTZ in 10 paesi del Mediterraneo, attraverso percorsi di co-gestione con i pescatori e gli attori locali.

I SITI ITALIANI DEL PROGETTO

- Area Marina Protetta Torre Guaceto
- Area Marina Protetta Santa Maria di Castellabate,
- Area Marina Protetta Capo Milazzo.



TORRE GUACETO, UN'AREA MARINA PROTETTA IN ESPANSIONE

L'Area Marina Protetta Torre Guaceto è un esempio internazionale di salvaguardia attuata insieme alle comunità locali. Grazie alla co-gestione della piccola pesca, studi recenti mostrano che le catture dentro la zona C dell'AMP sono maggiori di quelle ottenute in zone adiacenti, fuori AMP.

Ora vogliamo supportare l'ampliamento dell'AMP attraverso un processo partecipativo, per estendere i benefici all'ecosistema marino nelle aree adiacenti.

SEI UN PESCATORE RICREATIVO?

La pesca ricreativa è tra le attività più popolari lungo le coste Mediterranee, ma gli studi a disposizione sono ancora molto pochi o perfino assenti, come lungo le coste pugliesi.

Abbiamo quindi bisogno del tuo aiuto. Ti chiediamo di partecipare al progetto compilando un questionario online che servirà ad aumentare le conoscenze a disposizione e avviare una co-gestione informata delle risorse marine.



Scansionami!