Data in Brief 57 (2024) 111081

Contents lists available at ScienceDirect

Data in Brief

journal homepage: www.elsevier.com/locate/dib

Data Article

Survey data on public awareness on the value of marine biodiversity conservation in the Strait of Sicily (Central Mediterranean Sea)

Evelina Carmen Sabatella[a,*], Fabio Fiorentino[b,c], Umberto Grande[b], Valentina Lauria[b], Danilo Scannella[b], Germana Garofalo[b]

[a] *Institute for research on population and social policies (IRPPS), National Research Council (CNR), Corso S. Vincenzo Ferreri, 12, 84084 Fisciano, Italy*
[b] *Institute for Marine Biological Resources and Biotechnology (IRBIM), National Research Council (CNR), Via L. Vaccara 61, 91026, Mazara del Vallo, Italy*
[c] *Stazione Zoologica Anton Dohrn (SZN), Lungomare Cristoforo Colombo 4521, 90149, Palermo, Italy*

ARTICLE INFO

Article history:
Received 7 August 2024
Accepted 22 October 2024
Available online 28 October 2024

Dataset link: Survey on biodiversity conservation in the Strait of Sicily (Original data)

Keywords:
Ecosystem services
Questionnaire
Sustainable management of marine resources

ABSTRACT

The Strait of Sicily (SoS) is a region of key ecological importance because of its peculiar oceanographic conditions, high biodiversity, and critical role as a transition area between the western and eastern basins of the Mediterranean Sea. The SoS was designated as an Ecologically or Biologically Significant Area (EBSA) by the Contracting Parties of the Convention on Biological Diversity in 2014 [1] and acknowledged as an Important Shark and Ray Area (ISRA) in 2023 [2].
Ongoing research and conservation efforts are essential to protect this vital marine corridor from increasing anthropogenic pressures. Public awareness and perception can significantly influence policy development, resource allocation, and the effectiveness of conservation plans. Despite its great importance, surveys to assess society awareness and perception have been rarely implemented in the SoS, in particular from the perspective of marine biodiversity as a provider of valuable ecosystem services.
This dataset presents raw data from a survey conducted through in-person interviews between November 2023 and January 2024, yielding 128 responses from 7 locations along

* Corresponding author.
E-mail address: evelina.sabatella@cnr.it (E.C. Sabatella).
Social media: @SabatellaE (E.C. Sabatella)

https://doi.org/10.1016/j.dib.2024.111081

the southern coast of Sicily, which borders the northern sector of the SoS. The survey was structured in 4 sections: (1) confidence and awareness about the biodiversity conservation in the SoS; (2) perception about habitat conservation efforts and their level of effectiveness; (3) willingness to pay for habitat conservation in the SoS; and (4) socio-demographic information. Participation was voluntary, responses were anonymous and all respondents provided informed consent after reading a participant information form at the beginning of the survey.

This dataset, despite its limited size, is a valuable resource for quantitative analyses, filling a gap in similar analysis in the study area and offering an original perspective focused on biodiversity as an ecosystem service. It provides opportunities for researchers and policymakers to estimate the economic value that individuals place on preserving marine biodiversity. By assessing these valuations, stakeholders can gain insights into the public's willingness to pay for conservation initiatives and their prioritization of different aspects of marine ecosystem preservation.

The dataset accompanying this article includes several critical components. It contains a copy of the questionnaire used to gather data, providing transparency and allowing for replication or further study. Additionally, detailed information about the participants is included, which can help understanding the demographic and socioeconomic factors that influence public perception and preferences. The data itself is meticulously compiled, and a corresponding codebook is provided to facilitate accurate interpretation and analysis. This robust documentation ensures that users can efficiently navigate and utilize the dataset for their specific research needs.

Specifications Table

Subject	Biodiversity, Strategy and Management, Behavioural Finance and Economics
Specific subject area	In-person survey to assess confidence and awareness about the biodiversity conservation in the Strait of Sicily and the willingness to pay for habitat conservation in the SoS.
Data format	Raw
Type of data	Table
Data collection	Data were collected through in-person interviews between November 2023 and January 2024. The questionnaire was designed into Google and responses were entered in real time. Question items were designed specifically for this survey following the OECD report on Cost Benefit Analysis and the Environment [3], chapter 4.3 Designing a contingent valuation questionnaire. Respondents were approached through personal contacts of the researchers on the coastal communities, targeting groups that represent individuals interested in marine and coastal ecosystems in the Strait of Sicily.
Data source location	Respondents were located in the municipalities situated along the southern coast of Sicily, which borders the northern sector of the SoS (see fig.1). The questionnaire was administered through face-to-face interviews by researchers of the Italian National Research Council (CNR), specifically from the IRBIM and IRPPS institutes.

(*continued on next page*)

Data accessibility	Repository name: Mendeley Data Data identification number: DOI: 10.17632/rbnr9yr4yh.2 Direct URL to data: https://data.mendeley.com/datasets/rbnr9yr4yh/2

1. Value of the Data

- The dataset offers numerous opportunities for researchers and policymakers, serving as a tool for estimating the economic value that individuals place on preserving marine biodiversity. This information is critical for understanding the financial support that different conservation strategies might receive and for prioritizing efforts that align with public interest and perceived importance.
- For researchers, the dataset provides a foundation for conducting quantitative analyses to reveal patterns and trends in public opinion regarding marine biodiversity. It allows for the exploration of factors influencing people's valuation of marine ecosystems, such as demographic variables, socioeconomic status, and personal experiences with marine environments. This leads to a deeper understanding of the societal drivers behind conservation support and help in identifying target groups for awareness and education campaigns.
- The dataset enables the integration of public preferences into decision-making processes, ensuring that marine conservation and sustainable resource management strategies reflect the values and concerns of the community. This alignment with public sentiment can enhance the effectiveness and acceptance of policies aimed at protecting marine environments.
- Overall, the dataset is a resource that bridges the gap between scientific research and practical policymaking, contributing to the preservation of marine biodiversity and the sustainable management of marine resources.

2. Background

The Strait of Sicily (SoS), a key marine corridor between the eastern and western basins of the Mediterranean Sea, is a region with unique ecological characteristics influenced by its geographical location, oceanographic conditions, and biodiversity [1,4]. The SoS is characterized by a dynamic environment with significant water mass exchange, vertical mixing, and nutrient upwelling [5]. The SoS is a biodiversity hotspot with a variety of marine habitats, including seagrass meadows, coral reefs, and deep-sea ecosystems [6,7] that faces a myriad of anthropogenic pressures that collectively threaten its ecological balance and biodiversity [8]. These pressures predominantly stem from overfishing [9], intense shipping traffic [10,11], land-based activities [12] and pervasive pollution [13].

Addressing these anthropogenic pressures in the SoS requires concerted efforts from policymakers, scientists, and local communities. By adopting sustainable practices and effective management strategies, we can strive towards preserving this vital marine ecosystem for future generations.

Within this context, understanding people's views about exogenous impacts on marine and coastal systems, alongside other threats, is essential. The survey discussed here was conducted to better known public perception and awareness of marine biodiversity conservation and value and management of marine ecosystem services

3. Data Description

The questionnaire was administered through face-to-face interviews, uploading the answers in real time to the Google Form survey platform. The questionnaire has been widely discussed and tested within the research team. The questionnaire is available in English [14].

The questionnaire was structured into 4 sections:

(1) confidence and awareness about the biodiversity conservation in the SoS; this section includes questions to gauge respondents' confidence in their answers and in their familiarity with and knowledge about marine biodiversity and the related ecosystem services.
(2) perceptions about habitat conservation efforts and their level of effectiveness; this section includes questions on the importance of marine biodiversity in the SoS, its functions, and any potential threats or changes.
(3) willingness to pay (WTP) for habitat conservation in the SoS; this section includes closed-ended questions to elicit respondents' willingness to pay for the environmental good or service. A "payment card" approach is used to determine the range of acceptable values, with follow-up questions to understand the rationale behind their willingness to pay.
(4) socio-demographic information; this section includes questions to collect demographic information (age, gender, income, education) needed to analyze how different groups value the marine biodiversity and to identify the statistically significant determinants of WTP.

The final dataset comprises a total of 128 respondents and 6 081 entries. The dataset is provided in Mendeley Data as "Survey results SoS biodiversity.xlsx [14] and contains mostly numerical coding (mainly from Likert scales), except for text entries in 10 columns. The codebook to interpret the data is available in Mendeley Data as "Codebook Survey Strait of Sicily Biodiversity.pdf" [14].

Table 1 Contains the descriptive statistics of the numerical variables (including Likert scales) in the data set and reports the results of appropriate validity and reliability tests.

Target population is defined as the residents in the municipalities located in the coastal areas of the Strait of Sicily. Convenience sampling has been applied. This type of sampling is a non-probability sampling technique in which respondents are selected for their convenient accessibility and proximity to the researcher. It was not possible to determine the sample size before the survey implementation because no estimate of the proportion of the population willing to pay for the specified good was already available. Participation was entirely voluntary. Non-respondents were those who declined to participate or partially completed the survey. Partial responses were carefully reviewed, and any incomplete questionnaires were excluded from the final analysis to maintain data integrity. Among the engaged interviewees, 15 of them were not interested in participating in the survey considering the theme insignificant compared to the current socio-political issues affecting the local population.

Questions consisted of multiple-choice questions, demographic questions and open-ended questions. Most questions were compulsory, but demographic questions such as age, gender identity, education and personnel income included a 'prefer not to answer' option. Almost 46 % preferred not to answer the question concerning personal income. Questions also included "I don't know" options or in many cases allowed respondents to provide their own response or select "None" of the provided options.

Data screening was performed to check for completeness and consistency. This procedure yielded a final sample of 128 useful responses.

4. Experimental Design, Materials and Methods

The survey was implemented between November 2023 and January 2024. A total of 30 days were dedicated to the face-to face interviews. Respondents were identified in selected coastal localities with a specific interest in marine and coastal ecosystems and the related services. The target population was defined as the residents in the municipalities located in the coastal areas of the SoS. Respondents were selected for their convenient accessibility and proximity to the researcher: this non-probability sampling technique is called "convenience" sampling and was adopted because it is quick, simple and less expensive than other techniques.

A total of 128 survey responses were validated and included in the dataset. Descriptive statistics for the sample are presented in Table 1. Examining the main socio-economic variables of the

Table 1
Descriptive statistics, validity, and reliability tests.

ITEM RELIABILITY STATISTICS			
			If item dropped
	Mean	SD	Cronbach's α
Section 1. Confidence and awareness about the biodiversity conservation in the SoS			
Q1	1.88	0.334	0.772
Q2	3.84	1.290	0.767
Q3	2.95	1.458	0.770
Q4	3.96	1.375	0.752
Q6.1	2.84	1.649	0.752
Q6.2	2.75	1.676	0.764
Q6.3	4.21	1.317	0.766
Q6.4	4.50	1.112	0.764
Q6.5	4.59	0.930	0.769
Q6.6	4.84	0.757	0.769
Q6.7	3.32	1.515	0.770
Q6.8	3.02	1.507	0.780
Q6.9	4.16	1.247	0.763
Q6.10	2.93	1.536	0.766
Q6.11	4.09	1.164	0.749
Q6.12	4.66	0.920	0.760
Section 2: Perceptions about habitat conservation efforts and their level of effectiveness			
Q10	1.91	0.288	0.767
Q12	2.23	1.112	0.777
Q14	1.71	0.456	0.769
Q16	1.45	0.502	0.772
Q17	4.02	1.342	0.772
Section 3: Willingness to Pay for Habitat Conservation in the SoS			
Q18	1.73	0.447	0.762
Q19.1[a]	3.75	1.529	0.753
Q19.2[a]	2.04	1.401	0.774
Q19.3[a]	3.14	1.458	0.752
Q19.4[a]	3.48	1.401	0.758
Q19.5	3.21	1.371	0.750

SCALE RELIABILITY STATISTICS			
	Mean	SD	Cronbach's α
scale	3.23	0.465	0.772

[a] reverse scaled item.

sample, the average age is 42 years, the personal income per year is 23 thousand euro and 23 % of the respondents have a high education level.

Distribution of the samples across the coastal areas of the SoS (Fig. 1) shows that the municipality of Mazara del Vallo is most represented with 45 %, followed by the municipality of Sciacca with 22 %, Licata/Gela with 11 %, Portopalo di Capo Passero with 10 %, and the areas of Selinunte and Eraclea with 11 %.

The survey was composed of 30 questions across the above reported four main sections. An introductory section explaining the purpose and the importance of the survey was provided, and confidentiality and anonymity of responses were ensured, adhering to ethical standards including informed consent and protection of respondent confidentiality.

The survey was administered by researchers involved in the project. According to the aim of the study, different types of respondents were interviewed including stakeholders, policymakers and fishermen. In the case of fishermen, local fishing cooperatives were involved in recruiting respondents among the main fisher fleets operating in the SoS, distinguishing between artisanal and trawl fishery.

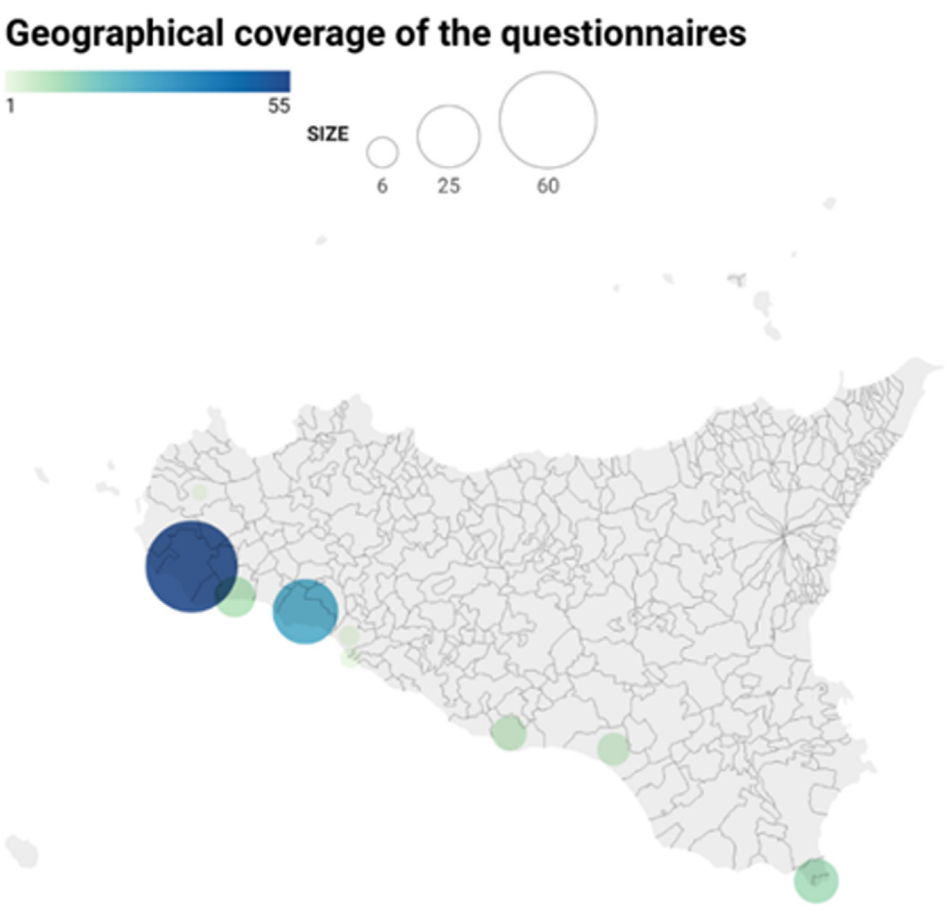

Fig. 1. Geographical coverage of the questionnaire.

To engage the largest number of potential respondents in the professional fishing sector, especially those involved in small-scale artisanal fishing, ad hoc meetings were organized with the support of sector cooperatives. During these meetings, the aim of the initiative and the introductory section were presented collectively, and subsequently, face-to-face meetings were conducted between the researchers and the interviewee for the questionnaire completion. Face-to-face interviews were carried out in a mean time of 15/20 min. As a result of this approach, fishermen, who are usually distrustful and reluctant to participate in such initiatives, were more comfortable and thus more willing to respond to the questions.

Question items were designed specifically for this survey, in line with the project's aims and objectives. The OECD manual on Cost–Benefit Analysis and the Environment was used as a reference [3].

Limitations

This survey data has some limitations, particularly regarding constraints related to the number of responses due to financial and human resource limitations, but it still represents an in-

novative approach in the study area in relation to the issues of biodiversity restoration and valuation of ecosystem services. The gender composition of the respondents leaned towards male respondents, consequently, conducting analyses on respondent attribute variables, such as gender, may be challenging.

Ethics Statement

The survey adheres to the CNR "Charter of Principles for Research in Social and Human Sciences and Code of Conduct" (2017) that establishes ethical guidelines for conducting research in the social and human sciences. Informed consent was obtained from all respondents prior to their completion of the survey. The authors of this manuscript declare that no ethical approval was required as the survey does not involve minors or any vulnerable population, is not a clinical trial and does not include particularly sensitive questions that could disturb respondents. All data acquired has been anonymized and research practices adopted in the survey fully comply with the ethical requirements for publication in the Data in Brief journal.

Data Availability

Survey on biodiversity conservation in the Strait of Sicily (Original data) (Mendeley Data).

CRediT Author Statement

Evelina Carmen Sabatella: Conceptualization, Methodology, Data curation, Visualization, Writing – original draft, Writing – review & editing, Supervision; **Fabio Fiorentino:** Methodology, Data curation, Visualization, Writing – review & editing; **Umberto Grande:** Methodology, Data curation, Visualization, Writing – original draft, Writing – review & editing; **Valentina Lauria:** Methodology, Writing – review & editing; **Danilo Scannella:** Methodology, Data curation, Writing – review & editing; **Germana Garofalo:** Conceptualization, Methodology, Data curation, Visualization, Writing – review & editing, Supervision.

Acknowledgements

The authors gratefully acknowledge all those who took the time to respond to our survey and participate in this research. This study received funding from the Italian Research Council (CNR), funds "Progetti di Ricerca@CNR 2020 - Capitale naturale e risorse per il futuro dell'Italia", project title "*BASSET-MED Biodiversity Assessment, Socio-economic SErvices, and anthropogenic Threats evaluation in the central MEDditerranean*". The funders had no role in any part of the research process.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

References

[1] N.J. Bax, J. Cleary, B. Donnelly, D.C. Dunn, P.K. Dunstan, M. Fuller, P.N. Halpin, Results of efforts by the convention on biological diversity to describe ecologically or biologically significant marine areas, Conservat. Biol. 30 (2016) 571–581, doi:10.1111/cobi.12649.

[2] R.W. Jabado, E. García-Rodríguez, P.M. Kyne, R. Charles, A.H. Armstrong, J. Bortoluzzi, T.L. Mouton, A. Gonzalez-Pestana, A. Battle-Morera, C. Rohner, G. Notarbartolo di Sciara, Mediterranean and Black Seas: A regional Compendium of Important Shark and Ray Areas, IUCN SSC Shark Specialist Group, Dubai, 2023, doi:10.59216/ssg.isra.2023.r3.
[3] OECDCost-Benefit Analysis and the Environment: Further Developments and Policy Use, OECD Publishing, Paris, 2018, doi:10.1787/9789264085169-en.
[4] M. Di Lorenzo, M. Sinerchia, F. Colloca, The north sector of the strait of sicily: a priority area for conservation in the Mediterranean Sea, Hydrobiologia 821 (2018) 235–253.
[5] N. Pinardi, E. Masetti, Variability of the large-scale general circulation of the Mediterranean Sea from observations and modeling: a review, Palaeogeogr Palaeoclimatol Palaeoecol 158 (3–4) (2000) 153–173.
[6] V. Lauria, G. Garofalo, F. Fiorentino, et al., Species distribution models of two critically endangered deep-sea octocorals reveal fishing impacts on vulnerable marine ecosystems in central Mediterranean Sea, Sci. Rep. 7 (2017) 8049, doi:10.1038/s41598-017-08386-z.
[7] F. Colloca, G. Garofalo, I. Bitetto, et al., The ecological sustainability of Mediterranean fisheries: a systemic approach, Front. Mar. Sci. 2 (2015) 44.
[8] T.H. Paramana, M. Dassenakis, V. Paraskevopoulou, N. Papadopoulou, C. Smith, S. Reizopoulou, S. Raicevich, M. Pulcini, F.R. Ronchi, M. Penna, A. Nguyen Xuan, R. Proietti, S. Maltese, V. Lauria, G. Garofalo, B. Mavrič, K. Klančnik, R. Kaučič, H. Caserman, T. Russo, N. Vrgoc, I. Isajlovic, N. Streftaris, P Pagkou, Screening and assessing physical pressures affecting seafloor integrity in the Mediterranean region, Ocean Coast. Manag. 251 (2024) 107046, doi:10.1016/j.ocecoaman.2024.107046.
[9] M. Coll, C. Piroddi, J. Steenbeek, K. Kaschner, F.B.R. Lasram, J. Aguzzi, … V. Christensen, The Mediterranean Sea under siege: spatial overlap between marine biodiversity, cumulative threats and marine reserves, Global Ecol. Biogeograp. 21 (4) (2013) 465–480.
[10] A. Abdulla, O. Linden, Maritime traffic effects on biodiversity in the Mediterranean Sea: review of impacts, priority areas and management options, Mar. Pollut. Bull. 57 (6–12) (2008) 691–700.
[11] R. Leaper, M. Renilson, A review of non-lethal management options for reducing ship strikes of large cetaceans, J. Cetacean Res. Manag. 12 (1) (2012) 119–127.
[12] A. Sahavacharin, P. Sompongchaiyakul, D. Thaitakoo, The effects of land-based change on coastal ecosystems, Landsc. Ecol. Eng. 18 (2022) 351–366.
[13] G. Garofalo, F. Quattrocchi, G. Bono, M. Di Lorenzo, F. Di Maio, F. Falsone, V. Gancitano, M.L. Geraci, V. Lauria, D. Massi, D. Scannella, A. Titone, F. Fiorentino, What is in our seas? Assessing anthropogenic litter on the seafloor of the central Mediterranean Sea, Env. Pollut. 266 (2020) 115213 ISSN: 0269-7491, doi:10.1016/j.envpol.2020.115213.
[14] Evelina Carmen Sabatella, Fabio Fiorentino, Umberto Grande, Valentina Lauria, Danilo Scannella, Germana Garofalo, Survey on biodiversity conservation in the Strait of Sicily, Mendel. Data (2024) V1, doi:10.17632/rbnr9yr4yh.