





ANALITICAL REPORT

RECREATIONAL FISHING IN THE WATERS OF THE BLACK SEA MAIN RESULTS OF THE CONDUCTED SURVEY

REPRESENTATIVENESS:	Nationally representative of the country's 18+ population, 1% of the sample corresponds to approximately 53,450 people
	1% of the sample base of recreational fishers in the Black Sea corresponds to 2 245 people, aged 18+.
FIELDWORK TIMEFRAME:	8 – 21 August 2024
SAMPLE SIZE:	1,030 telephone interviews with the general population aged 18+.
	Booster sample of 100 effective on-site interviews among recreational fishermen in Black Sea waters
METHOD OF REGISTRATION	CATI (computer-assisted telephone interviews) and standardised face-to-face interviews
STOCHASTIC ERROR:	± 3.1 at 50 percent shares

Gallup International Balkan

2024

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MINISTRY OF AGRICULTURE AND FOOD

Methodology

Considering the specific objectives and target group of this sociological study, the fieldwork was carried out in two stages. The combination of different methods of information gathering supported to a large extent the approach to recreational fishermen in the Black Sea area in order to provide a basis for the main conclusions of the study, as well as the main calculations and estimations.

The first stage was a nationally representative survey of the adult population of the country using computer-assisted telephone interviews. The sample size implemented was 1030 interviews. 1% of the sample, based on all persons aged 18 and over, corresponds to approximately 53,450 persons. During the nationally representative survey, the screening question "Do you fish recreationally in the waters of the Black Sea?" reached 4.2% of recreational fishermen who fish in the waters of the Black Sea, i.e. 224 480 persons. The estimated parameter has a guaranteed probability P (t) = 95% in the interval "from ... - to ...", i.e. the estimated penetration into the population is 4.2% or 224 480 recreational fishermen, then with 95% probability the actual number of recreational fishermen who practice fishing in the waters of the Black Sea is between 158 349 and 290 611.

In the second stage, 100 additional standardized face-to-face interviews were conducted only with recreational fishers practicing in the Black Sea waters. The sample was constructed in order to include respondents from the local population living near the Black Sea coast as well as respondents from the rest of the country. During the two phases of fieldwork, a total of 142 recreational anglers practising in the Black Sea area were reached.

Sample structure

The sample size of 1130 interviews included 47.4% males and 52.6% females. The age structure of the respondents was as follows: 12.6% of respondents were aged 18-29 years, 23.3% were aged 30-44 years, 24.8% were aged 60-65 years and 12.4% were aged 75+ years. Out of all respondents, 18.8% live in the capital city, 33.3% in district centres, 21.7% in smaller towns and 26.2% in rural areas. 31% of respondents had a university degree, 60.6% had completed secondary education and 8.4% had primary or less than primary education. 4.8% of respondents were students, 60.4% were employed, 9.5% were unemployed at the time of the survey, and a quarter said they were retired, including some who were working. 13.9% reported a household income of up to BGN 800, 23.9% had an income between BGN 801 and BGN 1600, 19.3% said their household income was between BGN 1601 and BGN 2500. 12.2% of respondents fall into the 2501-3500 BGN category. The proportions are lower in the two upper brackets of BGN 3501 to BGN 4500 (7.7%) and BGN 4501 and above (6.6%). 16.3% of respondents find it difficult to declare an exact figure for their household income.

Note: It should be borne in mind that the sample size is small due to the specific target group, so over-interpretation of the data should be avoided.









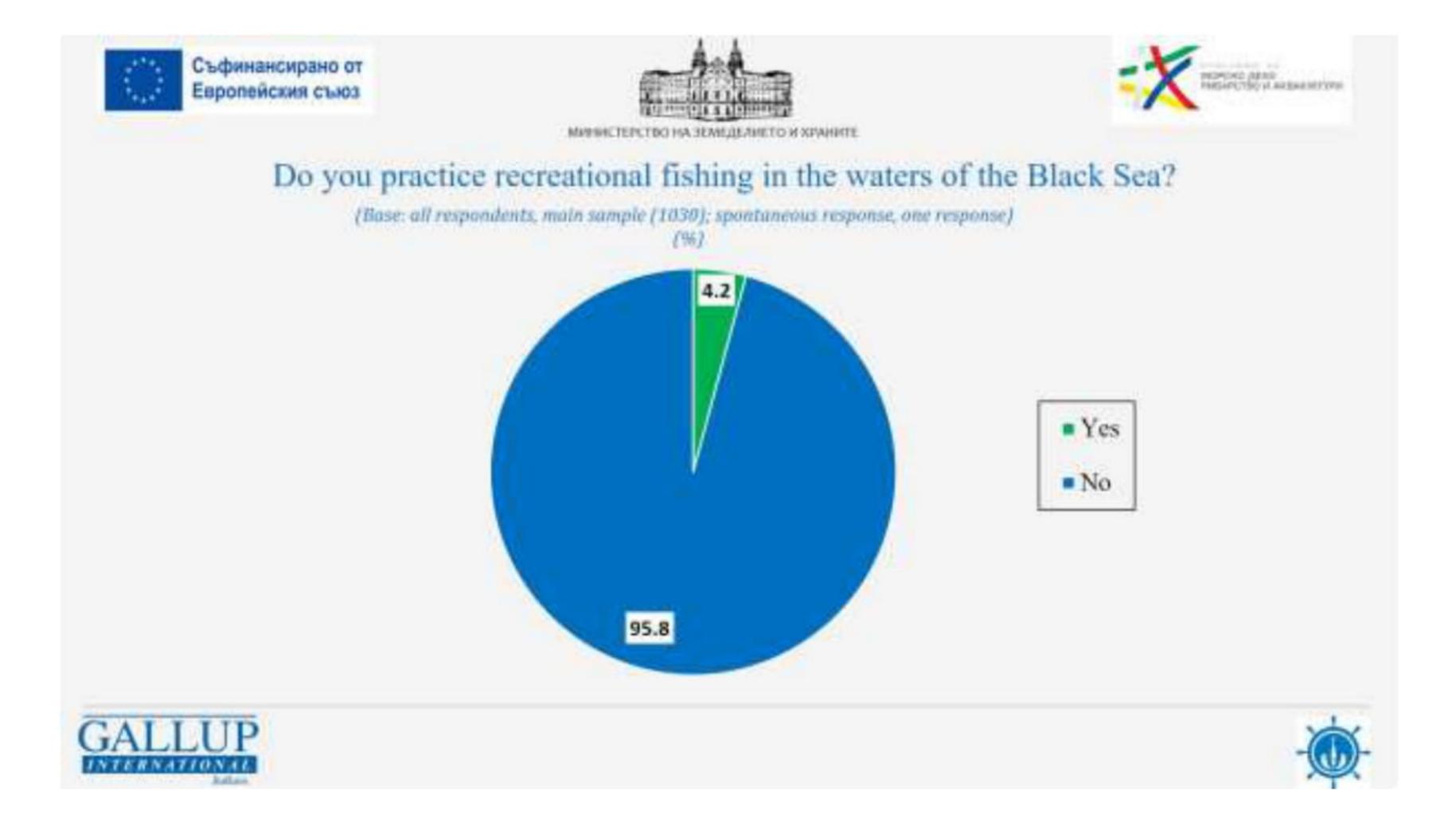


Figure 1

As expected, given the specificity of the subject, the majority of recreational anglers in the Black Sea waters - 82.7% - are men, and significantly less - 17.3% - are women. It is noteworthy that the majority of recreational anglers are people between 45 and 59 years old - 35.7%. Lower proportions are found among the youngest (14.3%) and the oldest (2.4%). This is most likely due to different preferences for hobbies, recreation and, in some cases, sports among different generations. The majority of recreational anglers in the Black Sea region are employed (71.7%), which to some extent corresponds to the rather high reported income.

Duration of recreational fishing in the waters of the Black Sea

The average number of years of practicing recreational fishing in the Black Sea is 17. 24.4% practice recreational fishing in the waters of the Black Sea over 21 years, a similar share of 22.4% fish there between 6 and 10 years, and 20.1% between 2 and 5 years. 12.9 percent of respondents fish in the Black Sea waters between 16 and 20 years, and 11.3 percent between 11 and 15 years. 2.2 percent of recreational fishermen have been recreational fishing for 1 year, and 6.7 percent of them found it difficult to indicate a specific period. 43.2% of the respondents aged between 18 and 29 years have been practicing recreational fishing for the shortest period – between 1 and 5 years, which is largely due to the fact that at an earlier stage of their life path and in the part of it in which they search, discover and form a hobby, ways of recreation, sports, etc. As expected, older recreational fishermen have been practicing fishing

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in the waters of the Black Sea for more than 16 years. Mainly these are working people (61.2%), but also 26.2% of amateurs who are of retirement age make an impression.

Note: For simplicity and data aggregation in the demographic breakdowns, the individual categories are grouped into the following scales: 1 to 5 years; 6 to 15 years; 16 years and more.

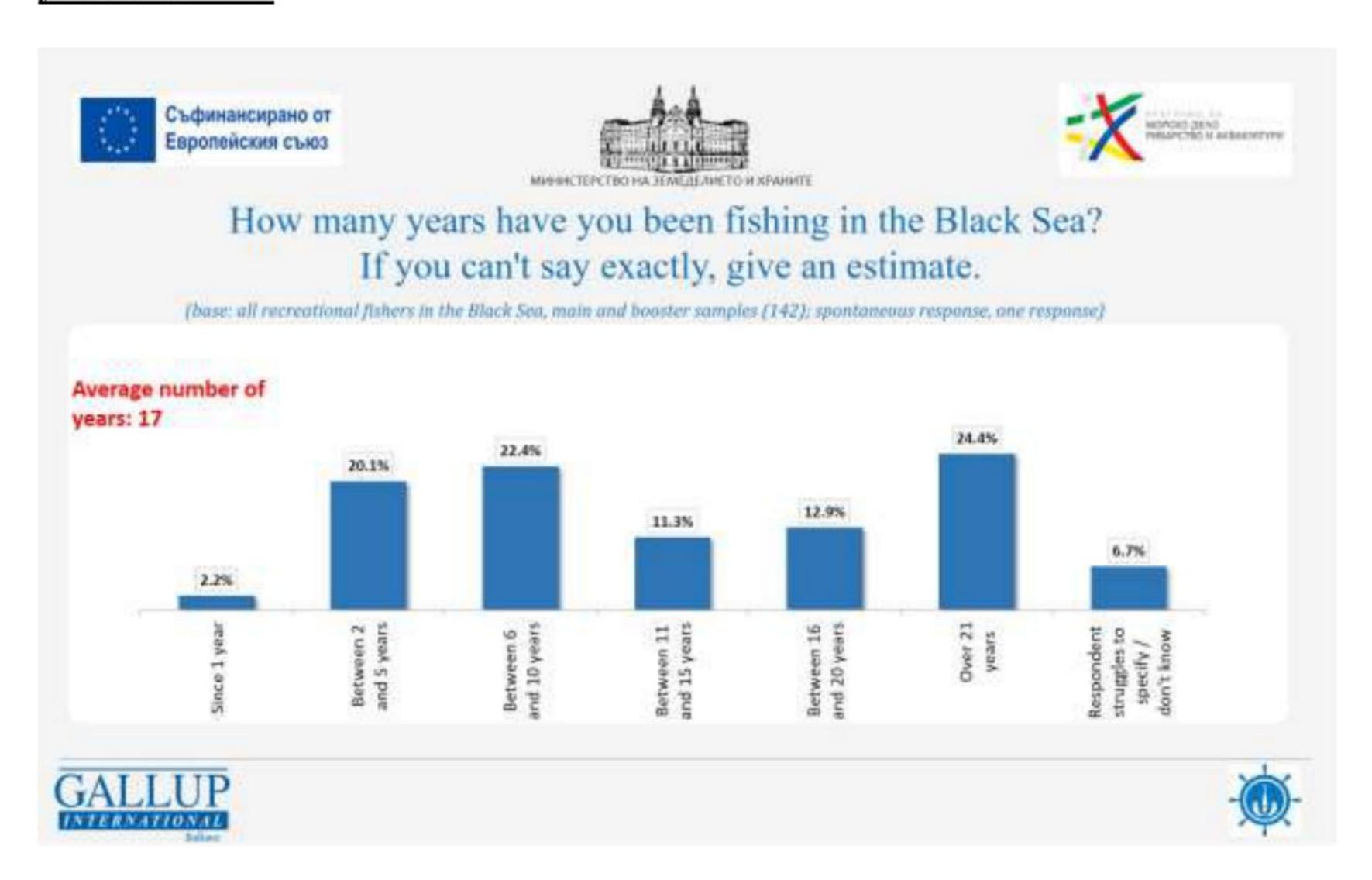


Figure 2

The average number of days spent on recreational fishing in the waters of the Black Sea per calendar year is 24.2. Up to 5 days are spent by 5% of the recreational fishermen, between 6 and 10 days are spent by 18.9% of the respondents. Between 11 and 15 days, 12.4% of the respondents fish in the waters of the Black Sea, and between 16 and 20 days, 8.9% of the respondents fish in the waters of the Black Sea. Up to one month (between 21 and 30 days) is spent by 25.1% of respondents, and up to two months (between 31 and 60 days) in a calendar year by 17.3%. 4.1% of respondents spend more than 61 days fishing in the Black Sea waters. For 8.3%, it is difficult to specify the number of days spent on recreational fishing.

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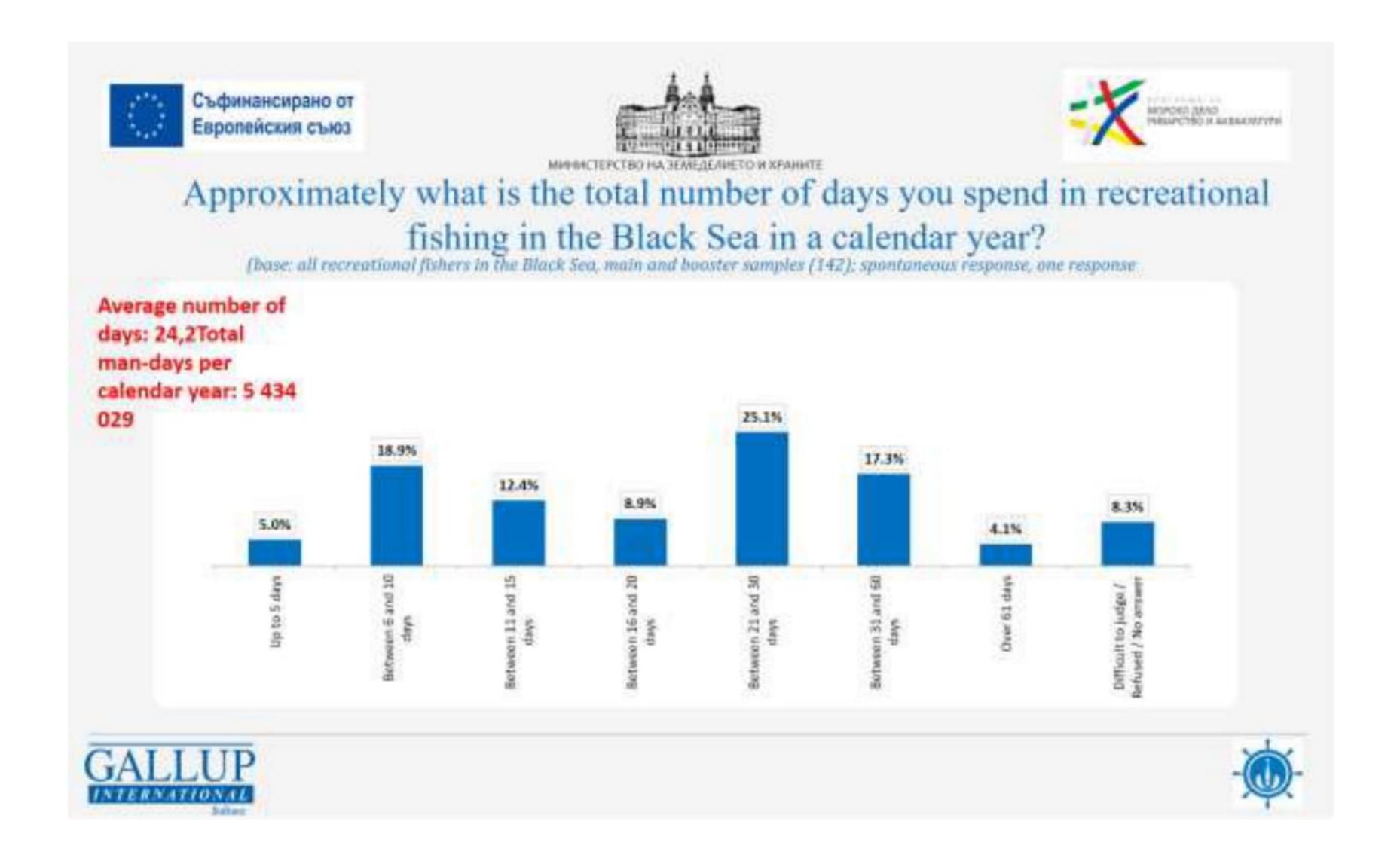


Figure 3

As part of hobbies and interests, recreation or sports, recreational fishing in the waters of the Black Sea depends directly on the free time available to its practitioners. Thus, older respondents, who are expected to have more free time (32.9%), spend the most days (more than 31 days) per calendar year on recreational fishing in the Black Sea. Respondents who are no longer in the labour market, e.g. retired, also reported spending more time on recreational fishing. Conversely, the youngest 18-29-year olds spend the least time, up to 10 days (30.5%), which is probably also due to a more hectic and busy daily life.

Note: For simplicity and data aggregation in the demographic breakdowns, the individual categories are grouped into the following scales: up to 10 days; between 11 and 20 days; between 21 and 30 days; more than 31 days.

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Preferred places for recreational fishing in the waters of the Black Sea

49% of recreational anglers most often fish on the southern Black Sea coast, while slightly fewer, 41.2%, fish on the northern Black Sea coast. Despite these differences, it is noticeable that there is no clear preference among recreational anglers for either the southern or northern Black Sea coast. Some of them - 9.8% - fish both north and south.

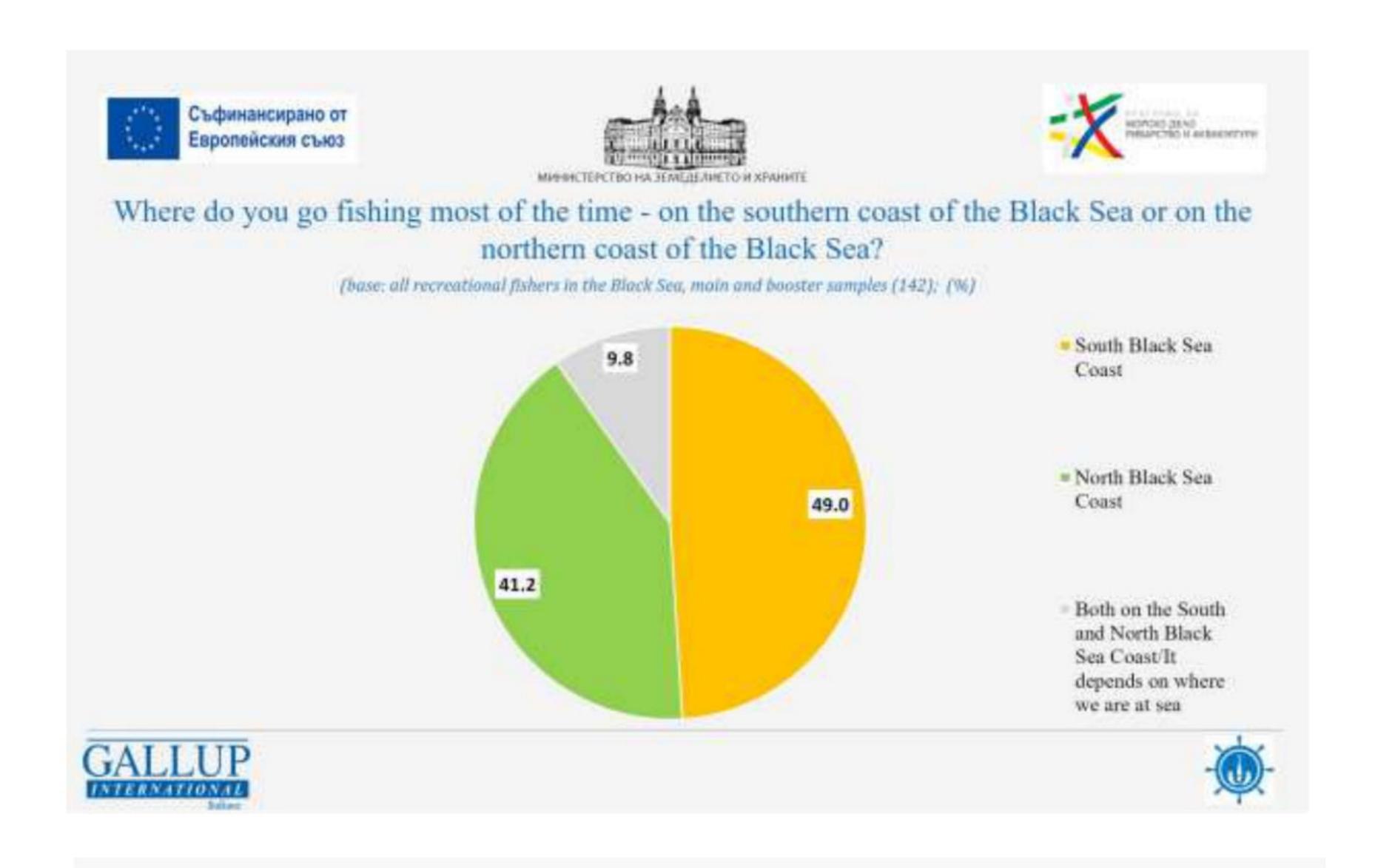


Figure 4

The specific places where anglers most often go fishing are as follows: Varna (22.5%), Sozopol (12.2%), Shabla (7.7%), Burgas Bay (7.3%), Burgas (6.7%), Balchik (6%), Tsarevo (5.9%), Ahtopol (5.6%), Kiten (5.2%), Chernomorets (4.0%), etc. (2.2% of the participants found it difficult to indicate a specific place, as in most cases they combine family holidays with recreational fishing.









Figure 5

Preferred time of the year for recreational fishing in the waters of the Black Sea

Summer is the most preferred season for recreational fishermen in Black Sea waters – 73.3%. This result is partly explained by the fact that some of the respondents indicated that it depends on the place where the anglers spend their vacations. 40.3 % stated that they fish in autumn and 19.9 % in spring. 14.6 % fish all year round on the Black Sea coast. It is important to note that respondents were given the opportunity to give more than one answer, so the total response rate is over 100%.









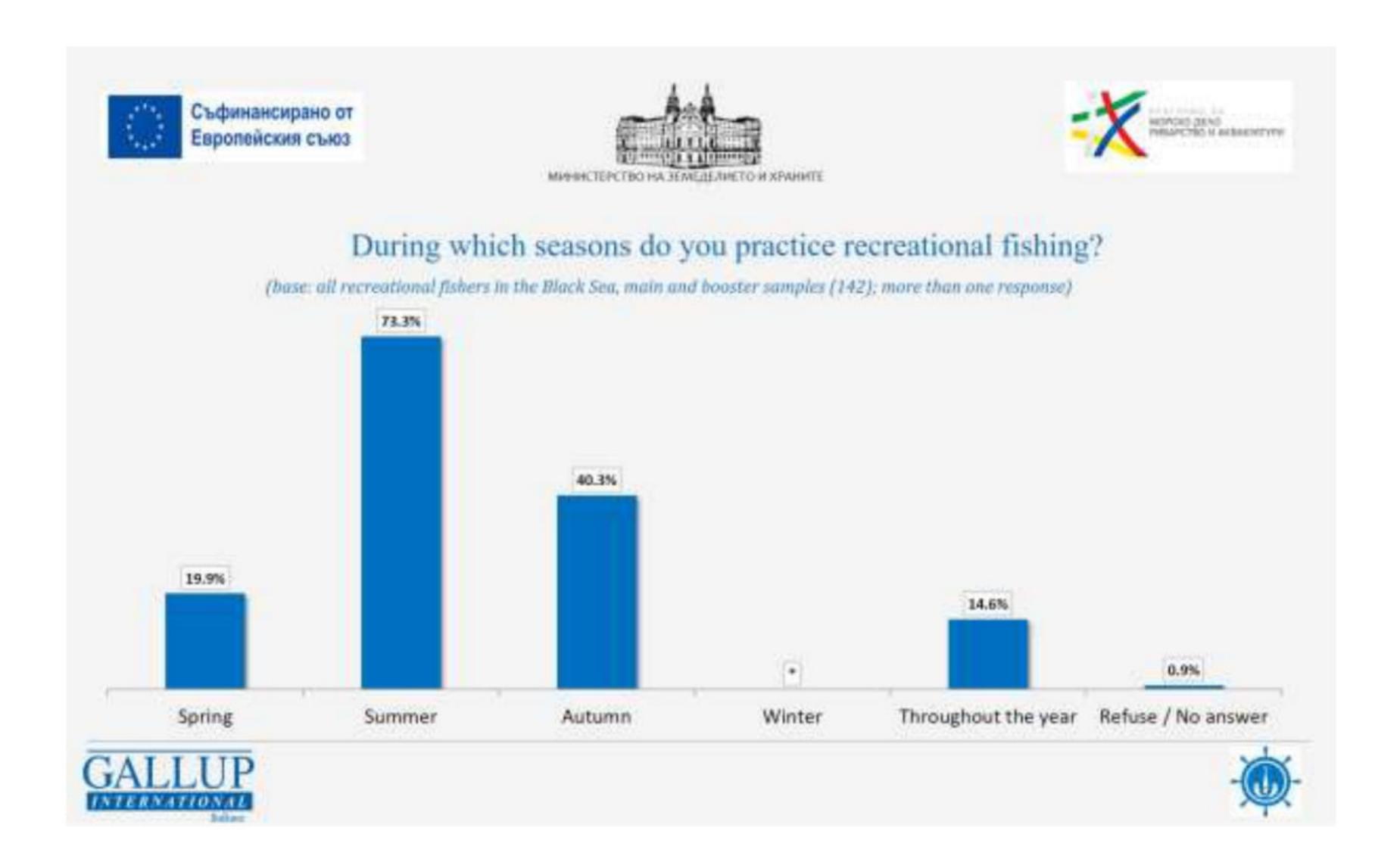


Figure 6

Preferred gear and methods for recreational fishing in Black Sea waters

In terms of the gear most used, the majority (77.8%) reported using a rod with a single hook or lure and 67.7% reported using a rod with tentacles. A smaller proportion of recreational fishermen (5.6%) used a harpoon. Although to a lesser extent, there are also those who do not use any specific gear for their catch, but collect clams and/or shellfish by hand. Due to the specificity of this particular indicator, respondents may indicate more than one type of gear, so the total percentages exceed one hundred.









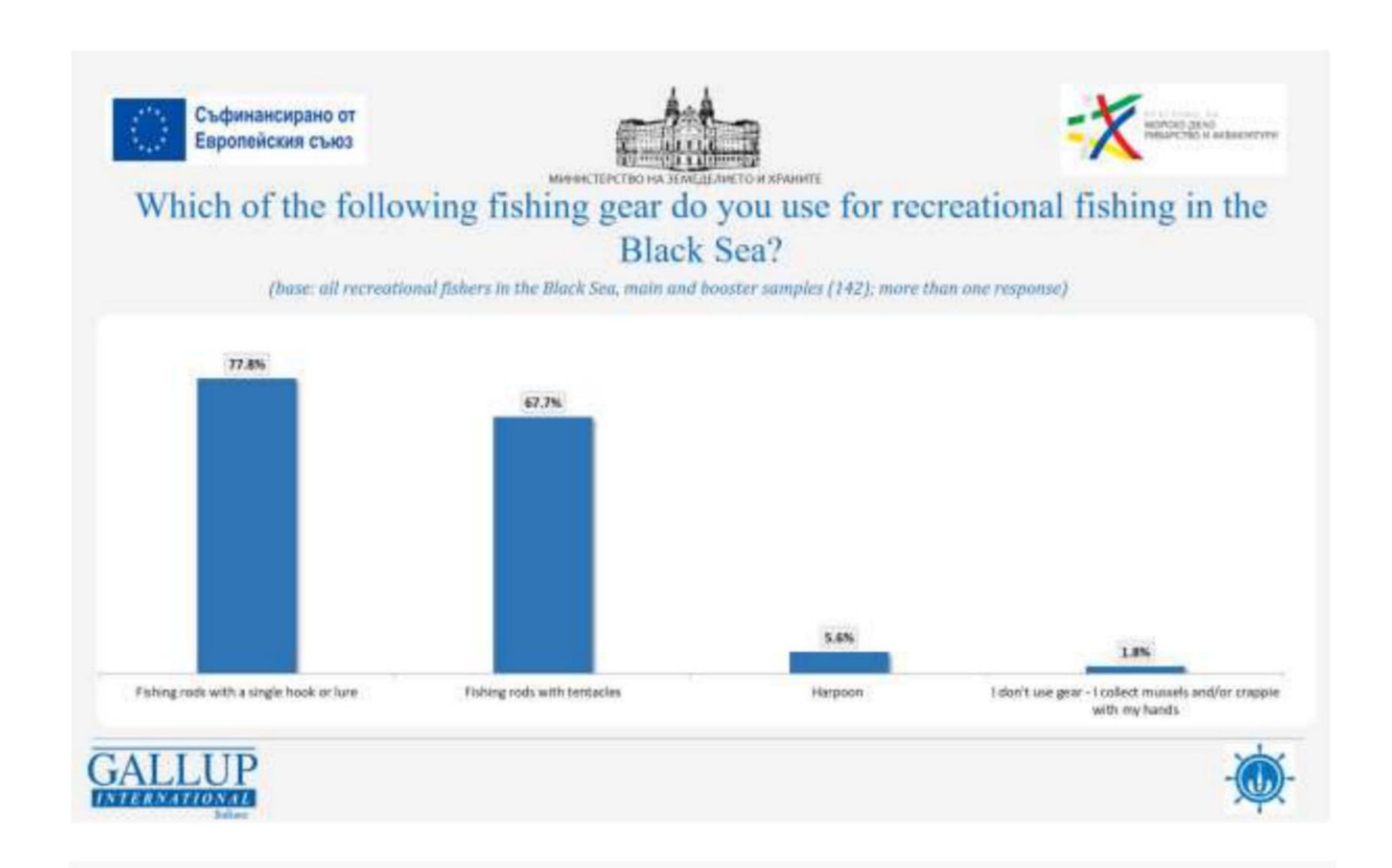


Figure 7

As expected, 86.3% practice recreational fishing in the waters of the Black Sea from the shore. 43.9% have a boat and use it to fish in the Black Sea. 28.0% fish by hand and 5.6% by harpoon. Taking into account the possibility of using different fishing methods according to, for example, weather conditions, specific preferences or the nature of the catch, the total response for this indicator also exceeds 100%.







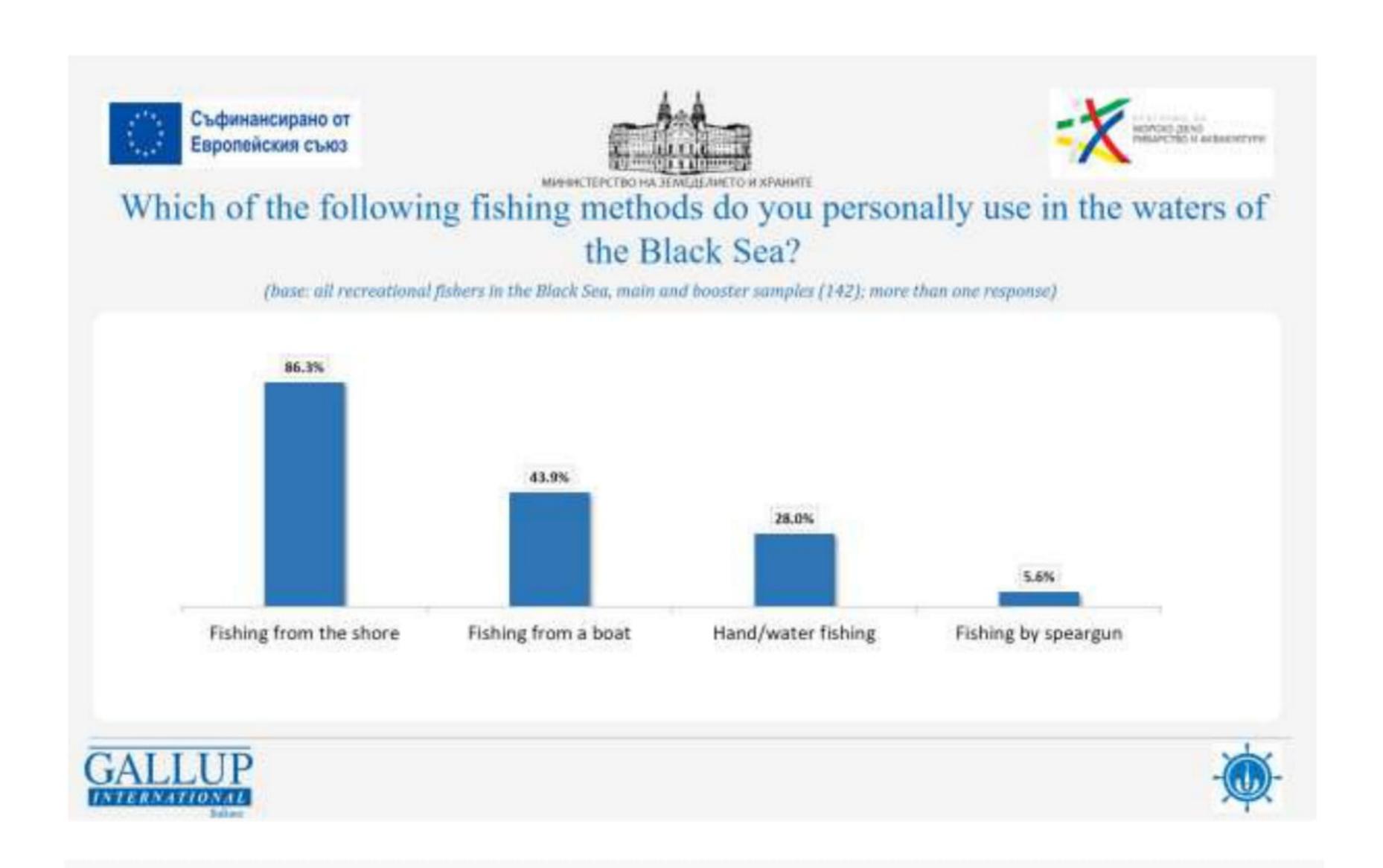


Figure 8

Assessment of access to Black Sea waters for recreational fisheries

Access to Black Sea waters is considered good by recreational anglers, as indicated by the cumulative responses of very good (40.9%) and rather good (31.4%). The opposite view is held by 24.7% who consider access to be poor, with the specific responses being very poor 9.6% and rather poor 15.2%. Categories such as very difficult to reach and not accessible at all were not mentioned by any of the respondents.









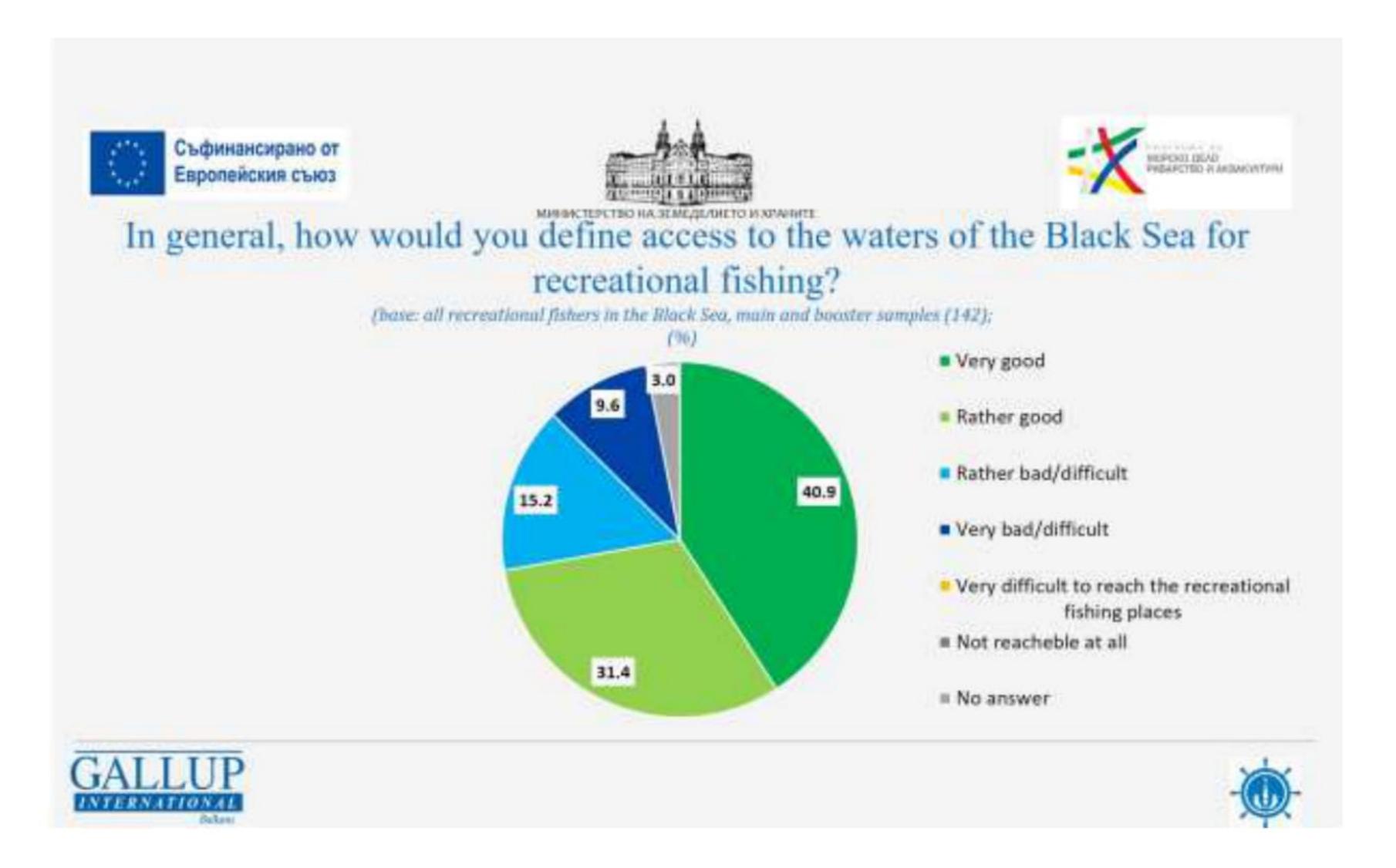


Figure 9

Main species of fish or other marine organisms most often caught by recreational fishermen in the waters of the Black Sea

For 88% of the respondents, the main species caught in the waters of the Black Sea is horse mackerel, followed by gobius (71.1), garfish (36.2%), bluefish (33.6%), mullet (30.1%), mussels (26.7%), bonito (19.5%), red mullet (12.9%), sea snail (11.5%), anchovy (8.9%), shrimp (6.4%), etc.

Note: For better readability of the data, all references with small accumulations have been grouped in the category other. It aggregates individual species designations – turbot, scorpionfish, tub gurnard, piked dogfish, etc.









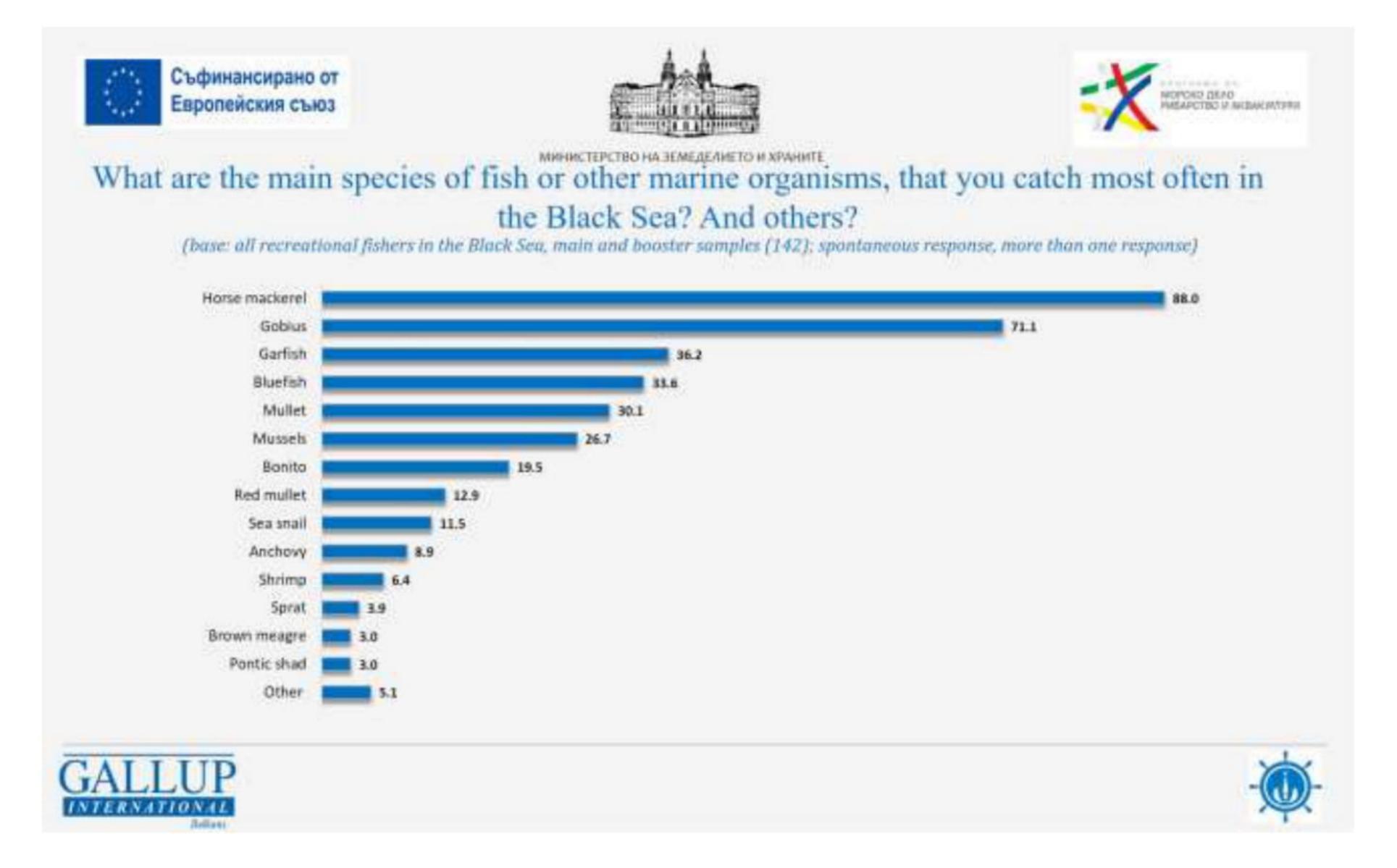


Figure 10

Approximate catch (in kg.) of the main species of fish or other marine organisms most commonly caught by recreational fishermen in the waters of the Black Sea in a calendar year

The average annual catch of a recreational fisherman in the waters of the Black Sea is 21 kg, and the total amount of fish and other marine organisms caught by recreational fishers in the waters of the Black Sea in one calendar year is 4 823 500 kg. The kilograms of each species are distributed as follows 1 705 916 kg. horse mackerel, 1 138 106 kg. gobies, 370 555 kg. bluefish, 351 846 kg. garfish, 337 020 kg. bonito, 285 835 kg. mullet, 243 390 kg. mussels, 70 142 kg. red mullet, 46 982 kg. sprat, 45 269 kg. anchovy, 40 150 kg. sea snail, 29 361 kg. corb, 22 800 kg. Black sea shad, 14 449 kg. Shrimp, 121 675 kg. other marine species.

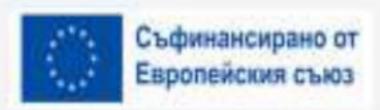
















What are the main species of fish or other marine organisms, that you catch most often in the Black Sea? Approximately how many kilograms of fish do you catch in a calendar year

(2023)?
(Base: all recreational fishers in the Black Sea, main and booster samples (142); spontaneous response, one response)

Average annual catch per recreational fisherman: 21 kg

		Confid	dence ir	nterval
A species of Black Sea fish/marine organism	Kilograms (estimate)	From	+	То
Horse mackerel	1 705 916	1 173 027	+	2 238 796
Gobius	1 138 106	737 408	÷	1 538 796
Bluefish	370 555	186 525	+	554 585
Garfish	351 846	181 013	+	522 684
Bonito	337 020	87 870	÷	586 180
Mullet	285 835	123 945	+	447 720
Mussels	243 391	93 123	+	393 653
Red Mullet	70 142	2 599	÷	137 689



"Respondents are asked to indicate for each species they caught and the kilograms for the previous calendar year (2023)



Figure 11







What are the main species of fish or other marine organisms, that you catch most often in the Black Sea?

Approximately how many kilograms of fish do you catch in a calendar year (2023)?

Average annua catch (Base: all recreational fishers in the Black Sea, main and booster samples (142); spontaneous response, one response) per recreational

rman: 21 kg		Confi	ndence in	terval
A species of Black Sea fish/marine organism	KG	From	*	То
Sea snail	46 982	32	÷	115 371
Sprat	45 270	1 692	+	88 847
Anchovy	40 150	30	+:	86 977
Brown meagre	29 362	22	÷	77 748
Ponticshad	22 801	13	+	60 397
Shrimp	14 449	10	+	30 792
Others	121 675	85	+	276 161
Total	4 823 500	2 587 394	+	7 156 396



"Respondents are solved to indicate for each species they cought and the kilograms for the provious entendar (von (2023).



Figure 12

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Project BG14MFPR001-1.002-0001 "Collection, management and use of data for the purposes of scientific analysis and implementation of the Common Fisheries Policy for the period 2023-2024", financed by the Program for European Maritime, Fisheries and Aquaculture, co-financed by The European Union through the European Maritime, Fisheries and Aquaculture Fund.











Proportion of catches (by species) from recreational fisheries in Black Sea waters relative to catches (by species) from commercial fisheries in the Black Sea per calendar year (2023)

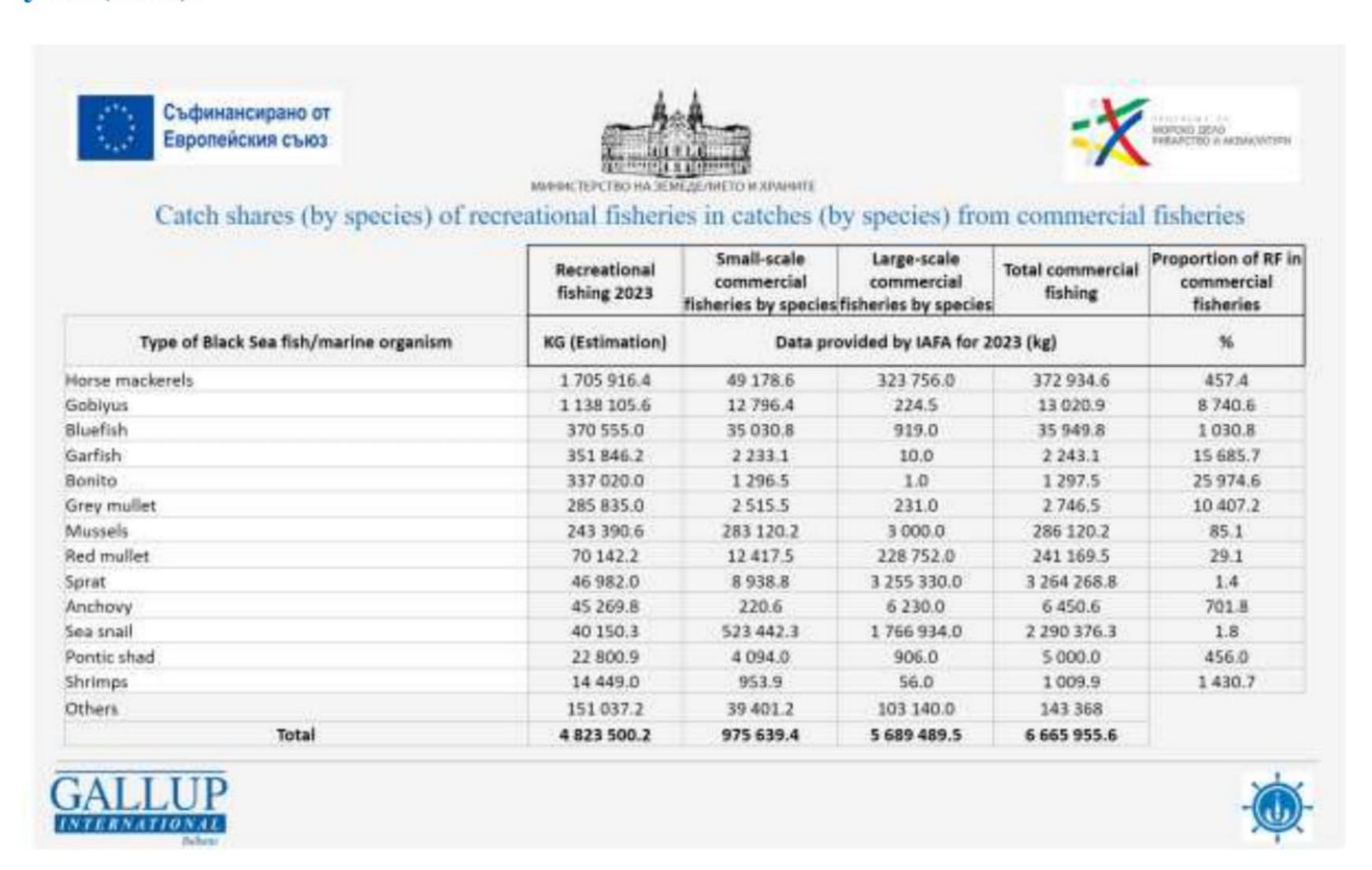


Figure 13

Horse mackerel - 1 705 916.4 kg. from recreational fishing compared to 372 934.6 kg. from commercial fishing or 457.4%. Mussels - 243,390.6 kg. from recreational fishing compared to 286,120.2 kg. 85.1%. Sea snail - 40,150.3 kg. from recreational fishing vs. 2,290,376.3 kg. or 1.8%. Sprat- 46,982.0 kg. from recreational fishery vs. 3,264,268.8 kg. from commercial fishery or 1.4%. The kilograms presented for the commercial fishery are the summed 2023 landings by species for the small-scale and large-scale fleets. Data are provided by the Executive Agency for Fisheries and Aquaculture.

<u>Note:</u> The calculations for the species different than Horse mackerel, mussels, Sea snail and sprat are made on a very low base and the data on the proportion of catches by species from recreational fisheries to commercial catches for 2023 should not be misinterpreted.







Conclusions:

- The total number of recreational fishermen in the Black Sea waters is 224 480;
- Varna, Sozopol, Shabla, Burgas Bay, Burgas and Balchik are among the most visited places by recreational fishermen;
- Recreational fishermen in the Black Sea most often fish from the shore;
- the most common type of gear used by recreational fishermen is fishing line with a hook or bait;
- The total number of days spent on recreational fishing in the waters of the Black Sea per calendar year is 543 029;
- The most common fish and marine organisms caught by recreational fishermen for a calendar year in Black Sea waters are horse mackerel, gobies, carfish, bluefish, mullet, scallops, bonito and red mullet, grey mullet, etc.

Detailed results are presented in Annex 1 to this report.





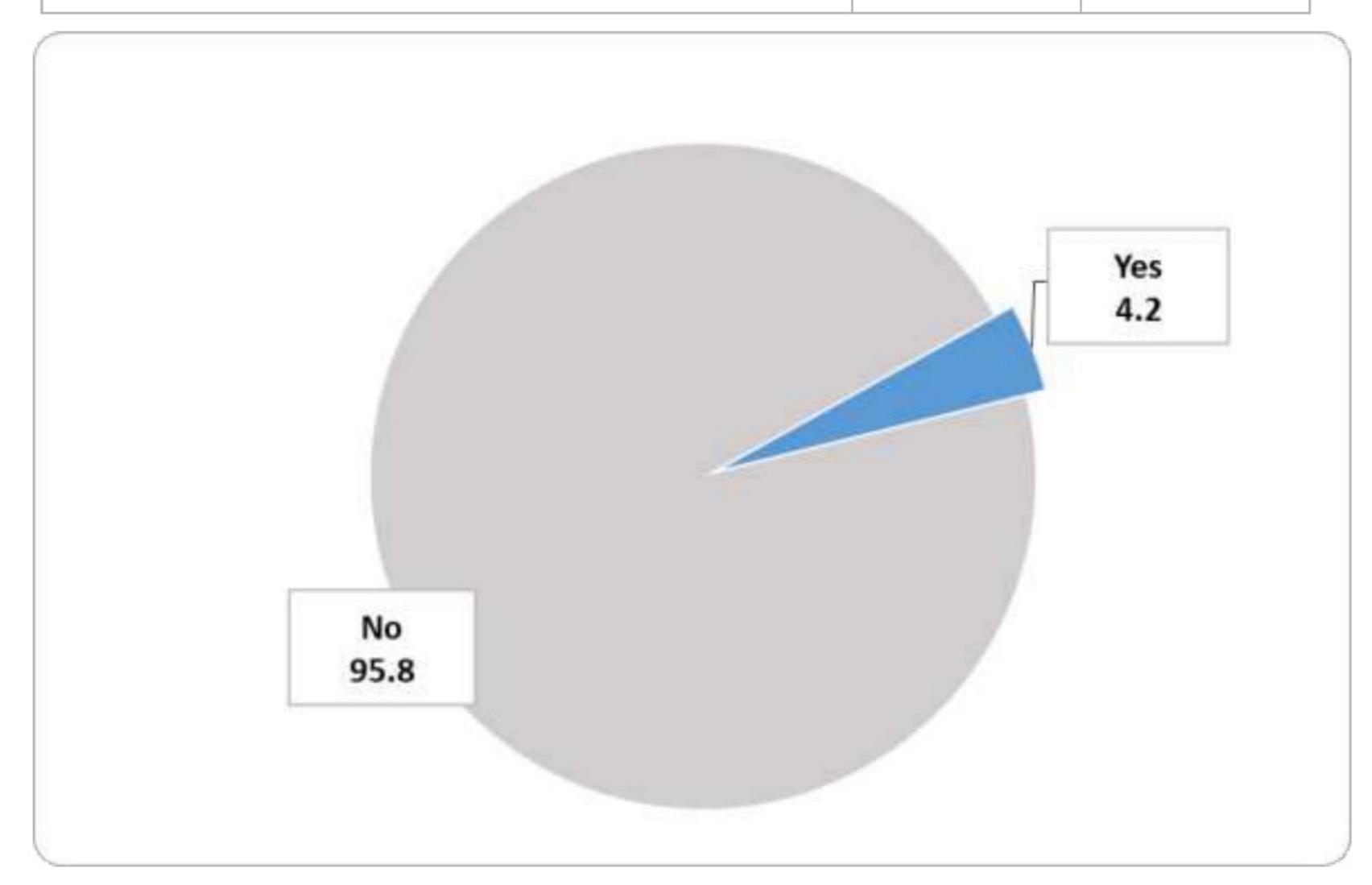


Annex 1

Penetration of recreational fishers in the Black Sea

Do you practice recreational fishing in the waters of the Black Sea?

base: all respondents, main sample (1030)	%	('000)
Yes	4.2	224
No	95.8	5 121









Penetration and number of individuals aged 18+ practicing recreational fishing in the Black Sea waters

	Confidence interval*2				
%	From	7 ÷	То		
4.2	3.0	÷	5.4		

	Confidence interval*?				
Quantity	From	7 ÷	То		
224 480	158 349	÷	290 611		

*The estimated parameter has a probability P (t)=95% in the interval "From ... - To ...".

That is, if the estimated penetration (penetrance) among the universe of individuals is 4.2% or 224 480 recreational fishers, then with 95% probability the actual number of recreational fishers practicing fishing in the Black Sea is between 158 349 and 290 611.







Socio-demographic profile of recreational fishermen in the Black Sea

Do you practice recreational fishing in the waters of the Black Sea? 2

base: a	all respondents, main and booster samples (1130)	Se (Co	2 1 %)	Se (Ro	2 w %)
J	Male	82.7	45.9	7.3	92.7
Sex	Female	17.3	54.1	1.4	98.6
	18-29	14.3	12.5	4.8	95.2
	30-44	23.8	23.3	4.3	95.7
Age	45-59	35.7	26.5	5.6	94.4
	60-65	23.8	24.8	4.0	96.0
	75+	2.4	12.8	0.8	99.2
	Sofia	11.7	19.1	2.6	97.4
Type of settlement	Regional centre	52.9	32.4	6.7	93.3
Type of ettlemen	Othes city	23.9	21.6	4.6	95.4
Ň	Village	11.5	26.8	1.8	98.2
uo	Higher	31.0	31.0	4.2	95.8
Education	Secondary	62.4	60.5	4.3	95.7
Ed	Primary and lower	6.7	8.5	3.3	96.7
Ħ	Pupil, student (not working)	3.4	4.9	3.0	97.0
Employment	Working	71.7	59.8	5.0	95.0
oldu	yed (unemployed, housewife)	8.4	9.5	3.7	96.3
- ш	Pensioner (incl. working)	16.6	25.8	2.7	97.3
	up to 800 BGN	0.5	14.5	0.2	99.8
	801-1600 BGN	5.9	24.7	1.0	99.0
e e	1601-2500 BGN	18.3	19.3	4.0	96.0
Income	2501-3500 BGN	28.5	11.5	9.8	90.2
_ <u>-</u>	3501-4500 BGN	13.5	7.5	7.3	92.7
	More than 4501 BGN	8.8	6.5	5.6	94.4
	DK/NA	24.4	16.0	6.3	93.7

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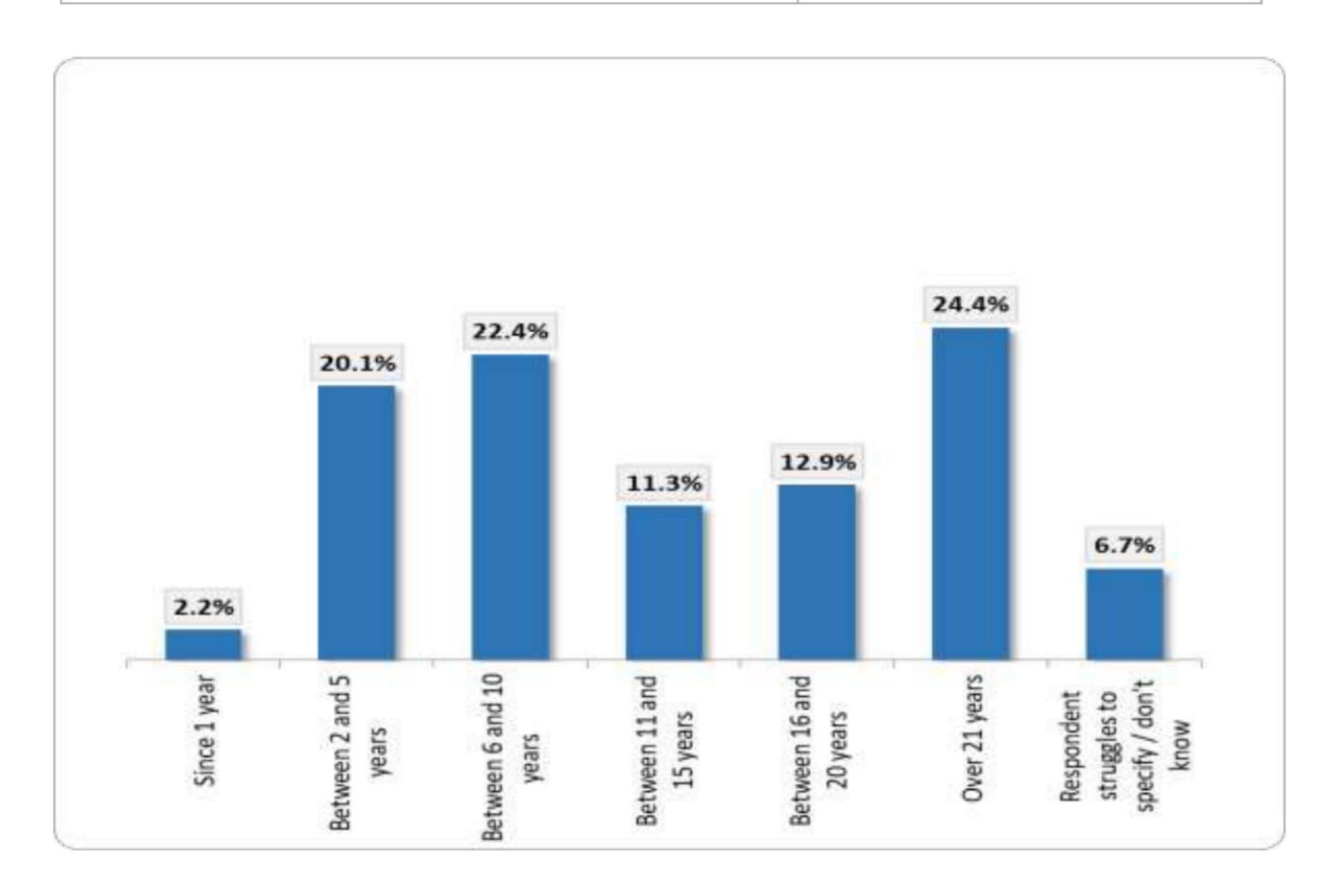






How many years have you been fishing in the Black Sea? If you can't say exactly, give an estimate.

base: all recreational fishers in the Black Sea, main and booster samples (142)	%	('000)
Since 1 year	2.2	5
Between 2 and 5 years	20.1	45
Between 6 and 10 years	22.4	50
Between 11 and 15 years	11.3	25
Between 16 and 20 years	12.9	29
Over 21 years	24.4	55
Respondent struggles to specify / don't know	6.7	15
Average number of years	1	7



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How many years have you been fishing in the Black Sea? If you can't say exactly, give an estimate.

	e: all recreational fishers in the c Sea, main and booster samples (142)	1-5 years	ි Between 6 and 15 % years	Over 16 years	1-5 years	Between 6 and 15 % years	Over 16 years
×	Male	65.9	84.2	88.2	17.8	34.4	39.7
Sex	Female	34.1	15.8	11.8	43.9	30.7	25.5
	18-29	43.2	13.8	*	67.5	32.5	*
	30-44	22.0	41.7	5.8	20.6	59.0	9.1
Age	45-59	18.2	36.5	49.8	11.4	34.5	51.9
	60-65	16.6	8.1	38.0	15.5	11.4	59.4
	75+	*	*	6.4	*	*	100.0
	Sofia	12.5	12.0	13.0	23.9	34.7	41.4
Type of settlement	Regional centre	57.9	57.5	43.1	24.4	36.6	30.3
Type	Othes city	10.8	25.4	28.9	10.1	35.8	45.0
Š	Village	18.8	5.1	15.0	36.5	15.0	48.5
uo	Higher	24.1	46.7	23.3	17.4	50.9	28.0
Education	Secondary	65.2	53.3	65.1	23.3	28.8	38.9
Edu	Primary and lower	10.7	*	11.5	35.7	*	64.3
_t	Pupil, student (not working)	12.1	2.1	*	79.3	20.7	*
Employment	Working	57.3	91.9	61.2	17.8	43.2	31.8
oldu	yed (unemployed, housewife)	14.0	1.6	12.6	37.3	6.6	56.1
ᇤ	Pensioner (incl. working)	16.6	4.4	26.2	22.3	9.0	59.0
	up to 800 BGN	2.3	*	*	100.0	*	*
	801-1600 BGN	*	1.4	14.7	*	7.7	92.3
a	1601-2500 BGN	21.3	9.5	24.6	25.9	17.5	50.0
Income	2501-3500 BGN	30.1	36.6	21.6	23.5	43.3	28.2
드	3501-4500 BGN	12.4	18.1	12.4	20.5	45.2	34.2
	More than 4501 BGN	8.1	11.9	7.9	20.6	45.8	33.6
	DK/NA	25.8	22.4	18.7	23.6	31.0	28.6

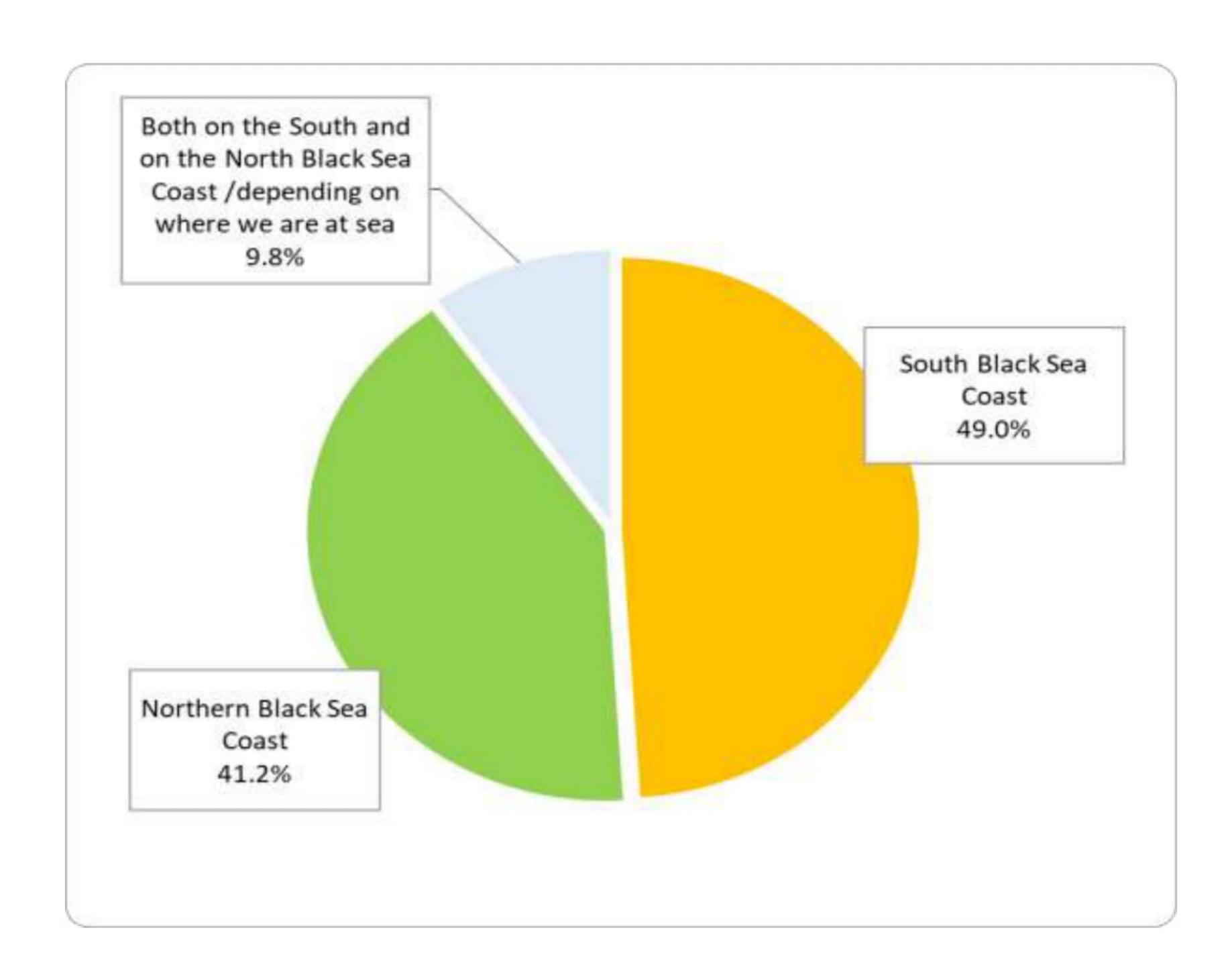
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Where do you go fishing most of the time - on the southern coast of the Black Sea or on the northern coast of the Black Sea?

base: all recreational fishers in the Black Sea, main and booster samples (142)	%
South Black Sea Coast	49.0
Northern Black Sea Coast	41.2
Both on the South and on the North Black Sea Coast /depending on where we are at sea	9.8













Where do you go fishing most of the time - on the southern coast of the Black Sea or on the northern coast of the Black Sea?

	e: all recreational fishers in the Sea, main and booster samples (142)	South Black Sea Coast	ର North Black Sea Coast	Both	South Black Sea Coast	% North Black Sea Coast	Both
.,	Male	85.2	76.8	94.4	50.5	38.3	11.2
Sex	Female	14.8	23.2	5.6	41.8	55.0	3.2
	18-29	18.4	9.8	12.7	63.1	28.2	8.7
	30-44	29.0	18.2	21.4	59.8	31.4	8.8
Age	45-59	33.8	39.4	29.9	46.4	45.4	8.2
	60-65	18.8	26.9	36.0	38.6	46.5	14.9
	75+	*	5.8	*	*	100.0	*
	Sofia	17.1	8.0	*	71.9	28.1	*
Type of settlement	Regional centre	42.0	62.3	67.9	38.9	48.5	12.6
Type of ettlemen	Othes city	23.9	21.9	32.1	49.1	37.7	13.2
S	Village	17.0	7.8	*	72.3	27.7	*
u	Higher	27.3	34.8	32.9	43.2	46.3	10.5
Education	Secondary	61.3	62.4	67.1	48.2	41.2	10.6
Edu	Primary and lower	11.3	2.7	*	83.2	16.8	*
	Pupil, student (not working)	5.4	*	8.0	76.9	*	23.1
Employment	Working	69.9	75.5	64.8	47.8	43.3	8.9
oldu	yed (unemployed, housewife)	11.9	3.7	10.2	69.8	18.1	12.0
ᇤ	Pensioner (incl. working)	12.9	20.8	17.0	38.1	51.8	10.1
	up to 800 BGN	1.1	*	*	100.0	*	*
	801-1600 BGN	1.1	13.1	*	8.9	91.1	*
e e	1601-2500 BGN	19.6	20.1	4.6	52.4	45.1	2.5
ncome	2501-3500 BGN	18.6	38.6	35.8	32.0	55.7	12.3
_ <u>-</u>	3501-4500 BGN	9.4	19.4	9.4	34.1	59.0	6.9
	More than 4501 BGN	13.3	5.5	*	74.1	25.9	*
	DK/NA	37.0	3.3	50.2	74.2	5.6	20.2

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Please indicate the specific place where you most often go fishing on the Black Sea.

base: all practitioners of recreational fishing in the Black Sea	% Main Sample (42)	% Main and Buster Sample (142)
Varna	30.8	22.5
Sozopol	19.1	12.2
Shabla	4.3	7.7
Burgas Bay	*	7.3
Burgas	6.5	6.7
Balchik	4.0	6.0
Tsarevo	6.4	5.9
Ahtopol	15.7	5.6
Kiten	2.9	5.2
Chernomorets	1.6	4.0
Balgarevo	*	3.6
Primorsko	*	3.5
Kavarna	*	2.7
Devil's River / Devil's Bay - Primorsko	*	1.3
Rezovo	*	1.0
Byala	2.8	1.0
Overview	2.8	0.8
Pomorie	3.0	0.7
Respondent struggles to specify / fishing, where he goes to the sea with the family / don't know	*	2.2

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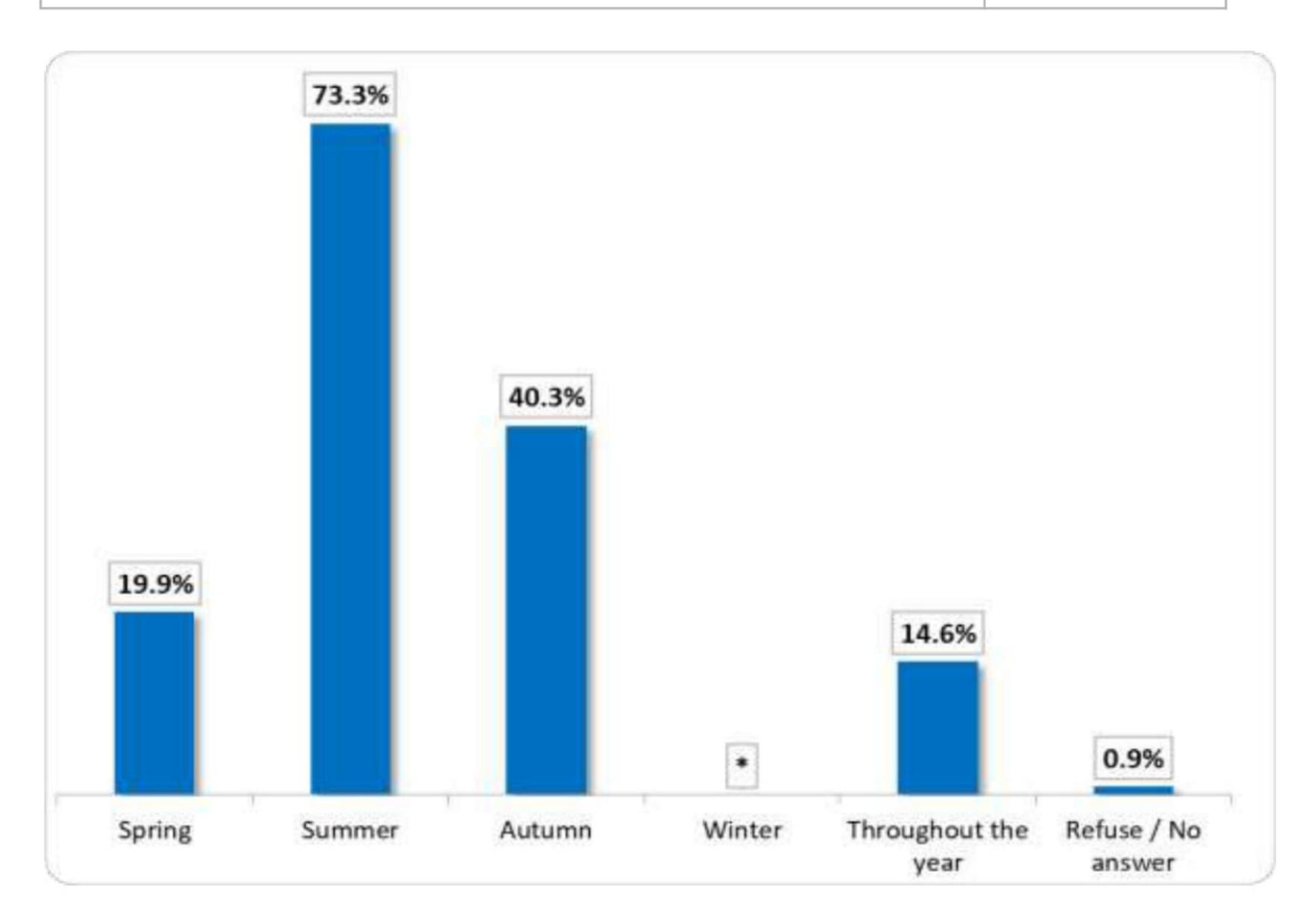






"During which seasons do you practice recreational fishing? (respondents gave more than one answer)" ?

base: all recreational fishers in the Black Sea, main and booster samples (142)	%
Spring	19.9
Summer	73.3
Autumn	40.3
Winter	*
Throughout the year	14.6
Refuse / No answer	0.9









"During which seasons do you practice recreational fishing? (respondents gave more than one answer)" ②

	e: all recreational fishers in the k Sea, main and booster samples (142)	Spring	Summer (Co	Autumn (%)	Throughout the year	Spring	Summer (Rov	Autumn	Throughout the year
	Male	83.2	79.6	83.0	92.2	20.0	70.6	40.5	16.3
Sex	Female	16.8	20.4	17.0	7.8	19.4	86.2	39.5	6.6
	18-29	6.8	16.9	6.4	13.2	9.4	86.5	18.2	13.5
	30-44	29.3	21.8	21.4	39.8	24.5	67.1	36.3	24.4
Age	45-59	21.1	35.3	41.2	26.8	11.7	72.5	46.5	10.9
	60-65	37.2	22.8	28.2	20.2	31.1	70.0	47.7	12.4
	75+	5.6	3.2	2.8	*	47.1	100.0	47.1	*
·	Sofia	10.1	13.3	7.3	*	17.2	83.4	25.3	*
e of ment	Regional centre	40.2	48.3	52.2	72.8	15.1	66.9	39.8	20.1
Type of settlement	Othes city	44.9	23.7	36.3	22.2	37.4	72.7	61.2	13.5
Š	Village	4.8	14.7	4.2	5.0	8.2	93.6	14.6	6.4
u	Higher	20.2	27.7	35.0	45.5	13.0	65.7	45.6	21.4
Education	Secondary	74.1	63.1	62.2	54.5	23.7	74.2	40.2	12.7
Edu	Primary and lower	5.6	9.1	2.8	*	16.8	100.0	16.8	*
l t	Pupil, student (not working)	3.6	4.7	1.8	*	20.7	100.0	20.7	*
ymei	Working	69.5	68.1	76.6	83.4	19.3	69.6	43.1	17.0
Employment	yed (unemployed, housewife)	3.9	10.3	4.9	*	9.4	90.6	23.6	*
늅	Pensioner (incl. working)	23.0	16.9	16.8	16.6	27.7	74.9	40.9	14.6
	up to 800 BGN	*	*	1.3	*	*	*	100.0	*
	801-1600 BGN	11.9	6.3	11.5	*	39.9	77.8	78.3	*
<u>ə</u>	1601-2500 BGN	33.0	19.2	20.8	*	35.9	77.0	45.8	*
Income	2501-3500 BGN	23.5	32.3	34.4	14.0	16.4	83.0	48.6	7.1
=	3501-4500 BGN	6.8	12.5	14.2	26.0	10.0	67.8	42.4	28.1
	More than 4501 BGN	7.1	10.2	6.4	4.3	16.1	84.8	29.2	7.2
	DK/NA	17.7	19.5	11.5	55.7	14.5	58.5	18.9	33.2

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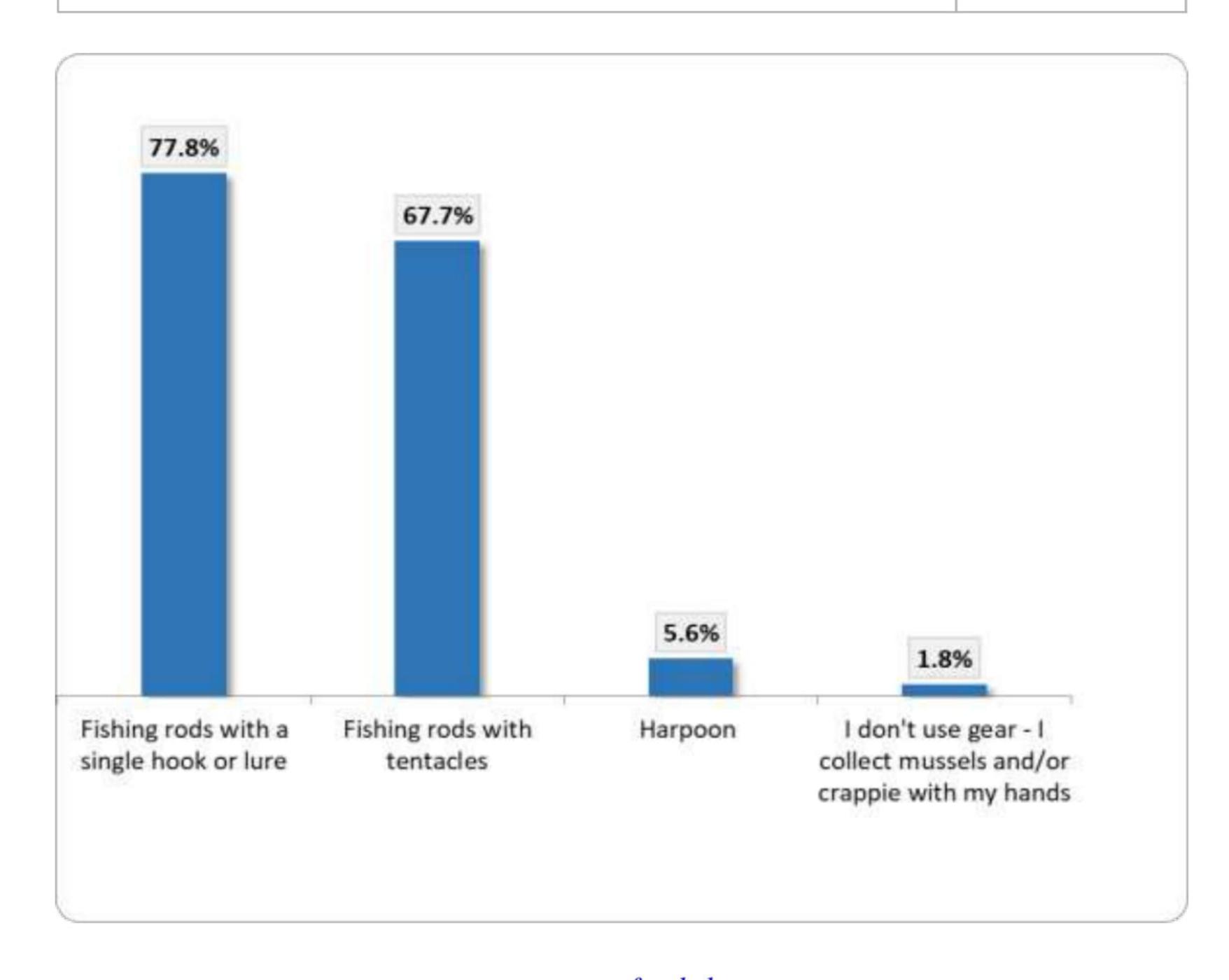






Which of the following fishing gear do you use for recreational fishing in the Black Sea? (respondents gave more than one answer)

base: all recreational fishers in the Black Sea, main and booster samples (142)	%
Fishing rods with a single hook or lure	77.8
Fishing rods with tenatacles	67.7
Harpoon	5.6
I don't use gear - I collect mussels and/or crappie with my hands	1.8
DK/NA	*









"Which of the following fishing gear do you use for recreational fishing in the Black Sea? (respondents gave more than one answer)"

[2]

Fishing rods with hook or lure Fishing rods with hook or lure Fishing rods withsoft lure stringers Fishing rods withsoft lure stringers base: all recreational fishers in the Black Sea, main and booster samples (142)(Col %) (Row %) Male 82.5 88.6 77.6 72.6 Sex Female 17.5 11.4 78.6 44.3 18-29 16.9 5.1 91.9 24.2 30-44 23.5 32.0 91.0 76.9 Age 45-59 37.1 31.4 80.8 59.4 60-65 21.0 79.5 28.0 68.8 75+ 100.0 1.4 3.5 47.1 Sofia 6.8 12.0 45.5 69.6 settlement Type of Regional centre 54.9 55.1 80.7 70.4 Othes city 28.1 75.3 26.6 91.4 Village 10.2 6.3 69.2 37.1 Higher 28.9 37.4 81.8 72.6 Education Secondary 62.5 60.9 78.0 66.1 Primary and lower 8.6 1.7 100.0 16.8 Pupil, student (not working) 4.4 1.0 100.0 20.7 **Employment** Working 70.4 77.6 76.5 73.2 yed (unemployed, housewife) 10.7 1.8 100.0 14.9 Pensioner (incl. working) 14.4 19.5 67.8 79.9 up to 800 BGN 100.0 8.0 801-1600 BGN 6.6 6.9 86.8 79.2 1601-2500 BGN 17.4 14.4 73.9 53.3 Income 2501-3500 BGN 28.3 26.8 77.2 63.5 3501-4500 BGN 14.3 66.4 13.3 82.3 More than 4501 BGN 6.2 10.5 55.2 80.9 DK/NA 27.2 27.3 86.7 75.7

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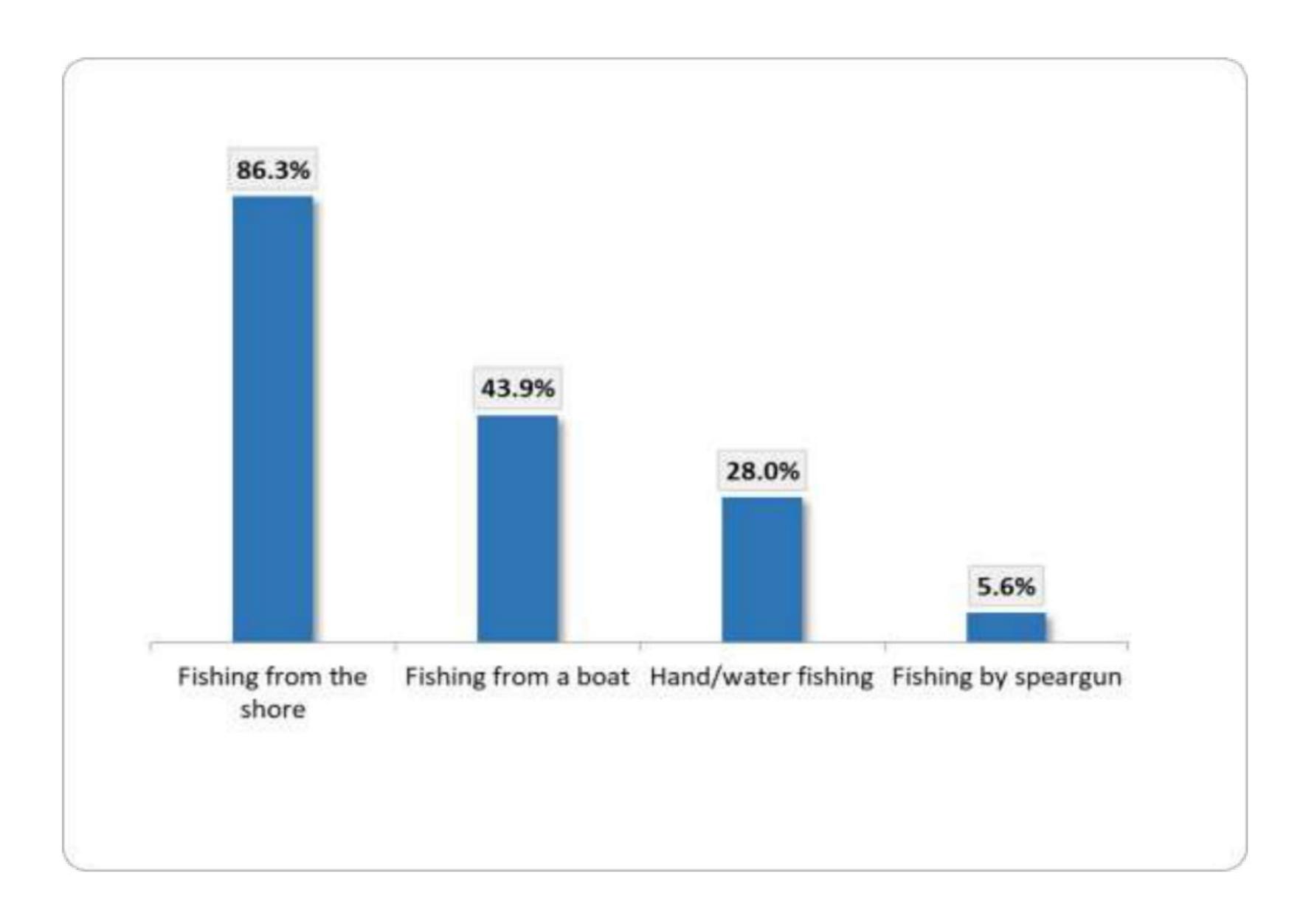




Which of the following fishing methods do you personally use in the waters of the Black Sea?

(respondents gave more than one answer)

base: all recreational fishers in the Black Sea, main and booster samples (142)	%	('000)
Fishing from a boat	43.9	99
Fishing from the shore	86.3	194
Fishing with a speargun	5.6	13
Fishing by hand/water method - without the use of fishing gear	28.0	63
No answer	*	*









Which of the following fishing methods do you personally use in the waters of the Black Sea?

(respondents gave more than one answer)

	all recreational fishers in the Sea, main and booster samples (142)	Fishing from a boat	Fishing from the shore	Fishing by hand/water method - without the use of fishing gear	Fishing from a boat	Mos (% Rom the shore (%)	Fishing by hand/water method - without the use of fishing gear
Sex	Male	91.1	80.6	92.9	48.4	84.1	31.5
Š	Female	8.9	19.4	7.1	22.4	96.8	11.4
	18-29	6.4	13.9	16.7	19.7	83.7	32.8
	30-44	27.6	25.6	24.6	51.0	92.8	28.9
Age	45-59	31.3	34.5	30.2	38.5	83.5	23.7
	60-65	29.2	24.7	28.5	53.9	89.6	33.5
	75+	5.4	1.3	*	100.0	47.1	*
1	Sofia	16.5	7.9	8.6	62.2	58.2	20.6
Type of settlement	Regional centre	45.5	55.1	53.3	37.7	89.9	28.2
Typ	Othes city	32.0	25.7	26.8	58.8	92.6	31.4
S	Village	6.0	11.4	11.3	22.9	85.3	27.5
on	Higher	38.3	30.3	32.4	54.3	84.4	29.4
Education	Secondary	59.1	62.0	56.2	41.6	85.9	25.3
Edı	Primary and lower	2.6	7.7	11.3	16.8	100.0	47.5
t L	Pupil, student (not working)	*	4.0	*	*	100.0	*
Employment	Working	74.9	70.4	68.2	45.9	84.8	26.7
oldu	ed (unemployed, housewife)	*	9.7	15.0	*	100.0	50.2
<u> </u>	Pensioner (incl. working)	25.1	15.9	16.8	66.6	83.1	28.5
	up to 800 BGN	*	0.6	*	*	100.0	*
	801-1600 BGN	7.2	6.3	5.3	53.5	91.6	24.9
υ	1601-2500 BGN	15.6	18.0	18.8	37.4	84.7	28.8
Income	2501-3500 BGN	30.0	26.3	21.5	46.2	79.7	21.2
<u> =</u>	3501-4500 BGN	7.1	15.6	2.9	22.9	100.0	6.0
	More than 4501 BGN	6.1	7.7	10.0	30.5	75.1	31.9
	DK/NA	34.0	25.5 w.eufunds	41.4	61.1	90.3	47.5

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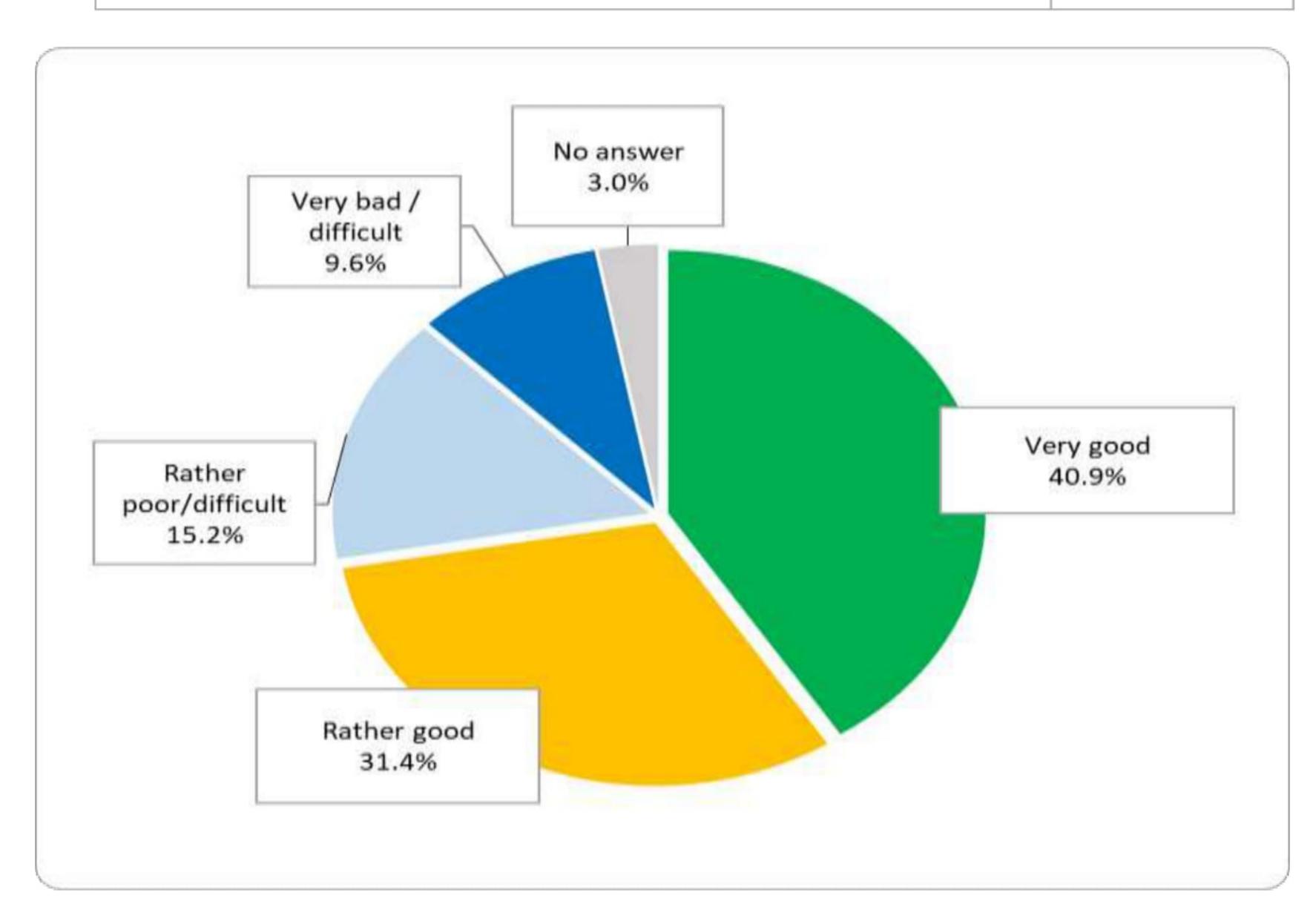






In general, how would you define access to the waters of the Black Sea for recreational fishing?

base: all recreational fishers in the Black Sea, main and booster samples (142)	%
Very good	40.9
Rather good	31.4
Rather poor/difficult	15.2
Very bad / difficult	9.6
Very difficult to reach recreational fishing places	*
Not reachable at all	*
No answer	3.0









In general, how would you define access to the waters of the Black Sea for recreational fishing?

base: all recreational fishers in the Black Sea, main and booster samples good (142)/ery good Very bad ather Rather Rather (Row %) (Col %) Male 80.9 78.9 91.3 83.5 40.0 29.9 16.7 9.7 Sex Female 8.7 38.1 7.6 9.1 19.1 21.1 16.5 45.2 18-29 11.8 14.7 19.6 19.7 32.2 20.8 13.2 33.8 30-44 25.7 20.8 22.7 5.9 15.8 35.7 14.6 44.1 Age 45-59 31.9 11.4 49.7 4.8 7.3 56.6 27.2 36.4 60-65 24.8 12.9 33.3 38.4 42.6 17.0 21.2 15.5 75+ * * 5.8 * * * * 100.0 Sofia 15.0 5.0 6.5 * 15.3 * 52.5 41.0 settlement Regional centre 44.3 49.1 74.0 34.2 29.1 21.2 60.6 11.0 Othes city 28.5 16.0 22.8 10.1 15.8 17.4 39.4 48.7 Village 49.6 * 5.1 * 12.3 18.2 43.6 6.7 Higher 32.6 33.1 16.0 29.9 32.7 37.1 39.4 11.5 Education Secondary 61.5 67.4 9.7 57.2 62.9 40.3 28.8 16.4 Primary and lower * 8.6 10.1 52.5 47.5 * * * Pupil, student (not working) 5.2 * 1.7 6.1 * 20.7 56.1 23.1 Employment Working 73.8 66.6 30.2 14.1 69.0 70.4 42.1 9.4 yed (unemployed, housewife) * 68.9 12.3 18.4 10.4 10.7 18.8 Pensioner (incl. working) 6.5 12.3 24.5 17.8 18.9 60.5 16.3 10.9 up to 800 BGN * * 1.6 * * 100.0 * * 801-1600 BGN 8.7 * 7.6 4.8 * 52.3 25.6 22.2 1601-2500 BGN 18.5 * 15.3 * 19.6 21.1 43.8 36.1 Income 2501-3500 BGN 41.1 20.6 18.4 22.7 9.8 17.8 58.9 6.0 3501-4500 BGN 17.9 14.7 10.3 34.2 54.2 11.6 More than 4501 BGN * 5.8 18.3 * 7.4 26.7 65.2 8.0 DK/NA 8.0 18.8 44.1 74.8 13.4 24.1 27.4 29.3

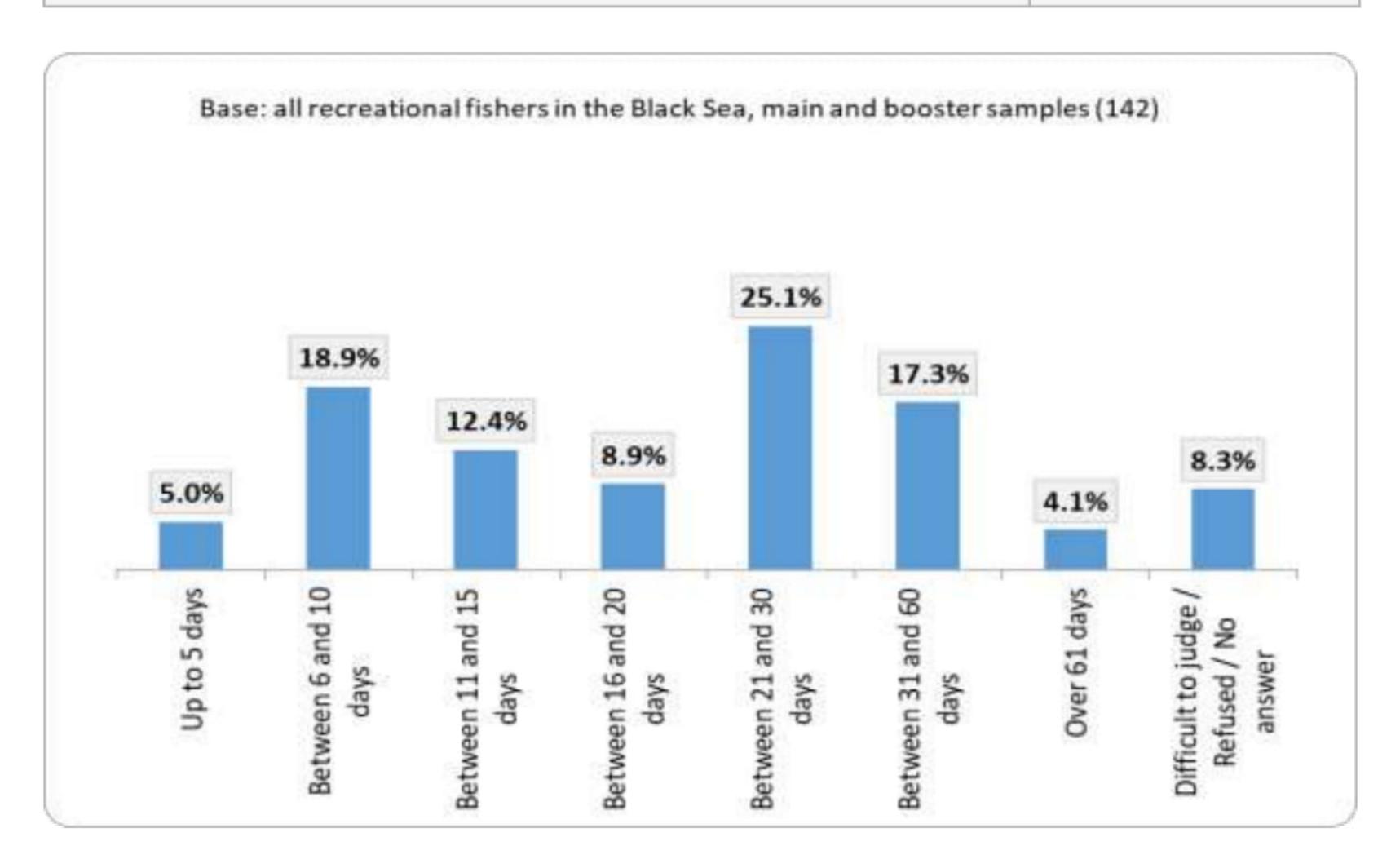






Approximately what is the total number of days you spend recreational fishing in the Black Sea in a calendar year?

base: all recreational fishers in the Black Sea, main and booster samples (142)	%
Up to 5 days	5.0
Between 6 and 10 days	18.9
Between 11 and 15 days	12.4
Between 16 and 20 days	8.9
Between 21 and 30 days	25.1
Between 31 and 60 days	17.3
Over 61 days	4.1
Difficult to judge / Refused / No answer	8.3
Average number of days (median)	24.2
Total number of man-days per calendar year (extrapolation)	5 434 029









Approximately what is the total number of days you spend recreational fishing in the Black Sea in a calendar year?

	e: all recreational fishers in the Sea, main and booster samples (142)	Up to 10 days	Between 11 and 20 days	ි 8etween 21 and 30 days	More than 31 days	Hasitatas/DK/NA	Up to 10 days	Between 11 and 20 days	8 Between 21 and 30 days	More than 31 days	Hasitatas/DK/NA
J	Male	77.2	70.3	83.0	94.0	100.0	22.3	18.1	25.2	24.3	10.1
Sex	Female	22.8	29.7	17.0	6.0	*	31.4	36.5	24.7	7.4	*
	18-29	30.5	18.1	9.4	3.7	*	50.9	26.9	16.6	5.6	*
	30-44	20.1	20.6	21.0	27.6	41.3	20.2	18.4	22.2	24.9	14.5
Age	45-59	28.2	40.8	47.7	30.5	21.6	18.8	24.3	33.6	18.3	5.0
	60-65	21.2	14.6	21.9	32.9	37.1	21.2	13.1	23.1	29.6	13.0
	75+	*	5.9	*	5.2	*	*	52.9	*	47.1	*
	Sofia	18.7	22.4	6.7	3.5	*	38.2	40.9	14.4	6.5	*
Type of settlement	Regional centre	45.8	67.4	51.2	42.0	69.3	20.7	27.1	24.3	17.0	10.9
Typettle	Othes city	10.6	10.1	29.5	43.2	30.7	10.6	9.0	31.0	38.7	10.7
Š	Village	24.9	*	12.6	11.3	*	51.5	*	27.5	20.9	*
on	Higher	22.4	39.6	33.3	26.8	37.1	17.2	27.2	27.0	18.5	10.0
Education	Secondary	67.6	60.4	54.1	67.9	62.9	25.9	20.6	21.8	23.3	8.4
Edı	Primary and lower	10.0	*	12.6	5.2	*	35.7	*	47.5	16.8	*
nt	Pupil, student (not working)	14.3	*	*	*	*	100.0	*	*	*	*
Employment	Working	61.9	79.3	75.9	69.4	73.4	20.6	23.5	26.6	20.7	8.5
oldu	yed (unemployed, housewife)	8.5	2.9	16.7	7.1	*	24.3	7.3	50.2	18.1	*
- ū	Pensioner (incl. working)	15.2	17.9	7.5	23.6	26.6	21.9	22.9	11.3	30.5	13.4
	up to 800 BGN	2.2	*	*	*	*	100.0	*	*	*	*
	801-1600 BGN	3.3	2.5	2.0	19.2	*	13.2	8.9	8.4	69.4	*
e e	1601-2500 BGN	19.8	6.3	19.5	28.7	14.4	25.8	7.3	26.7	33.6	6.6
Income	2501-3500 BGN	18.6	50.4	29.5	21.7	15.7	15.6	37.6	26.0	16.3	4.6
_	3501-4500 BGN	7.1	20.5	20.0	11.4	*	12.5	32.2	37.2	18.0	*
	More than 4501 BGN	19.8	8.6	4.6	5.1	*	53.6	20.9	13.0	12.5	*
	DK/NA	29.2	11.8	24.5	13.9	69.9	28.5	10.2	25.2	12.1	23.9

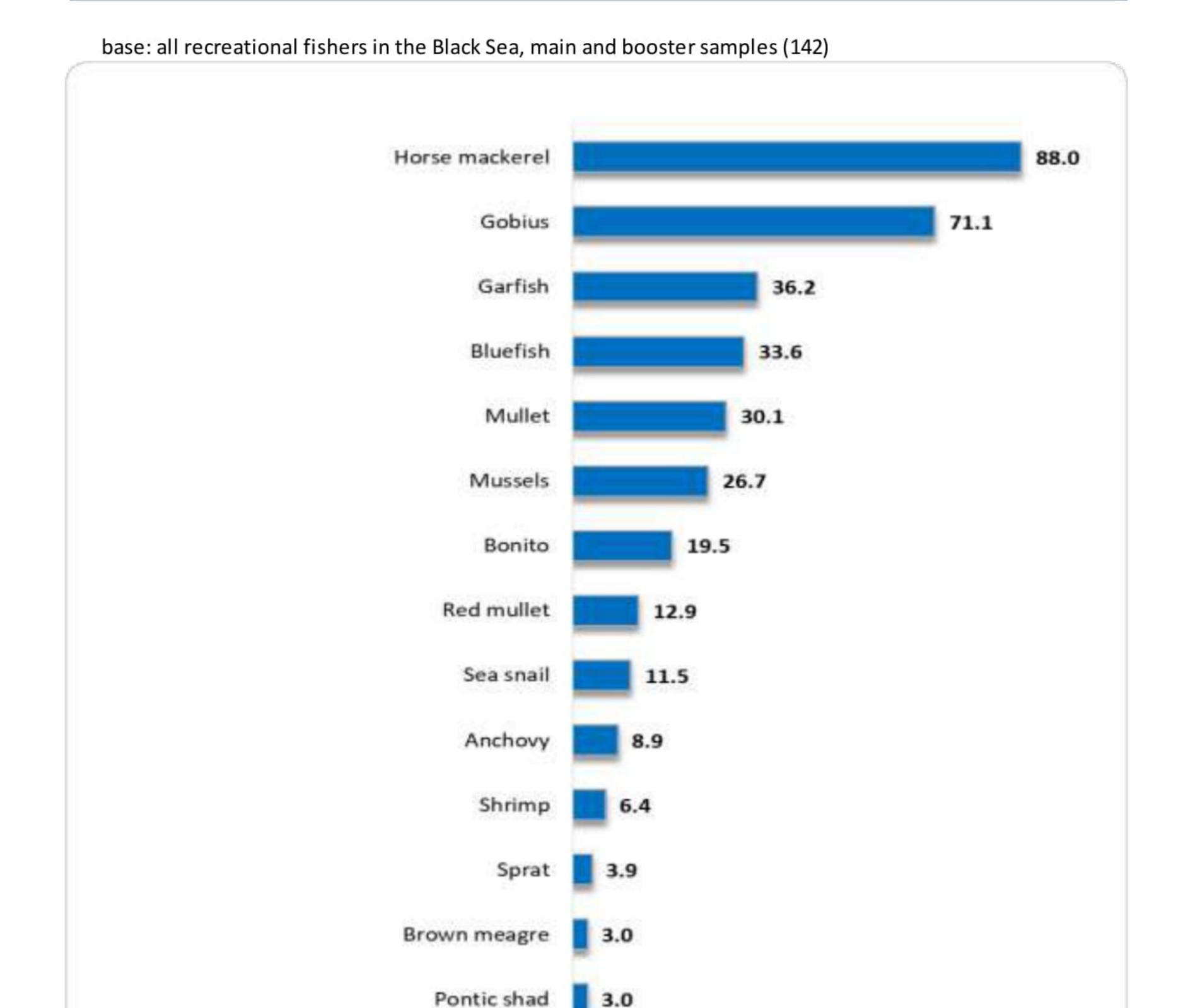






What are the main species of fish or other marine organisms that you catch most often in the Black Sea? And others?

(respondents gave more than one answer)



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Other







"What are the main species of fish or other marine organisms that you catch most often in the Black Sea? And others? (respondents gave more than one answer)"

[]

base: all recreational fishers in the Black Sea, main and booster samples (142)

species					Confidence interval*				
	% fishermen	Number	From	÷	То				
Horse mackerels	88.0	197 642	138 245	÷	257 040				
Gobius	71.1	159 687	106 100	÷	213 274				
Bonito	19.5	43 862	15 465	÷	72 259				
Bluefish	33.6	75 511	38 363	÷	112 658				
Garfish	36.2	81 255	42 742	÷	119 769				
Grey mullet	30.1	67 476	32 334	÷	102 618				
Clams	26.7	59 831	26 716	÷	92 947				
Red mullet	12.9	28 881	5 806	÷	51 956				
Sea snail	11.5	25 710	3 932	÷	47 487				
Sprat	3.9	8 735	6	÷	21 450				
Anchovy	8.9	19 929	745	÷	39 113				
Pontic shad	3.0	6 810	4	÷	18 039				
Brown meagre	3.0	6 817	5	2 -	18 051				
Shrimp	6.4	14 449	10	÷	30 792				
Others	5.1	11 474	8	÷	26 042				

^{*}The parameter being evaluated has a probability P (t)=95% in the interval "From ... - To ...". For example, if 88% or 197,642 recreational fishermen catch horse mackerel, then with 95% probability the actual number of recreational fishermen catching horse mackerel is between 138,245 and 257,040.

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Annual catch of Black Sea fish by recreational fishermen*2

"What are the main species of fish or other marine organisms you catch most often in the Black Sea? Approximately how many kilograms ... do you catch in a calendar year?"

☐

base: all recreational fishers in the Black Sea, main and booster samples (142) [2]

		Confir	idence i	interval
Species	KG	From	÷	То
Horse mackerels	1 705 916	1 173 027	÷	2 238 796
Gobius	1 138 106	737 408	÷	1 538 796
Bonito	370 555	186 525	÷	554 585
Bluefish	351 846	181 013	÷	522 684
Garfish	337 020	87 870	÷	586 180
Grey mullet	285 835	123 945	÷	447 720
Mussels	243 391	93 123	÷	393 653
Red mullet	70 142	2 599	÷	137 689
Sea snail	46 982	32	÷	115 371
Sprat	45 270	1 692	÷	88 847
Anchovy	40 150	30	÷	86 977
Brown meagre	29 362	22	÷	77 748
Pontic shad	22 801	13	÷	60 397
Shrimp	14 449	10	÷	30 792
Others	121 675	85	÷	276 161
Total	4 823 500	2 587 394	÷	7 156 396

Average annual catch per recreational fisherman:

21 kg













Catch shares (by species) of recreational fisheries in catches (by species) from commercial fisheries

What are the main species of fish or other marine organisms that you catch most often in the Black Sea? Approximately how many kilograms do you catch in a calendar year (2023)?

base: all recreational fishers in the Black Sea, main and booster samples (142)

	Recreational fishing 2023	commercial	Large-scale commercial fisheries by species	Total commercial fishing	Proportion of RF in commercial fisheries
Type of Black Sea fish/marine organism	KG (Estimation)	Data p	%		
Horse mackerels	1 705 916.4	49 178.6	323 756.0	372 934.6	457.4
Gobiyus	1 138 105.6	12 796.4	224.5	13 020.9	8 740.6
Bluefish	370 555.0	35 030.8	919.0	35 949.8	1 030.8
Garfish	351 846.2	2 233.1	10.0	2 243.1	15 685.7
Bonito	337 020.0	1 296.5	1.0	1 297.5	25 974.6
Grey mullet	285 835.0	2 515.5	231.0	2 746.5	10 407.2
Mussels	243 390.6	283 120.2	3 000.0	286 120.2	85.1
Red mullet	70 142.2	12 417.5	228 752.0	241 169.5	29.1
Sprat	46 982.0	8 938.8	3 255 330.0	3 264 268.8	1.4
Anchovy	45 269.8	220.6	6 230.0	6 450.6	701.8
Sea snail	40 150.3	523 442.3	1 766 934.0	2 290 376.3	1.8
Pontic shad	22 800.9	4 094.0	906.0	5 000.0	456.0
Shrimps	14 449.0	953.9	56.0	1 009.9	1 430.7
Others	151 037.2	39 401.2	103 140.0	143 368	
Total	4 823 500.2	975 639.4	5 689 489.5	6 665 955.6	