



“Dpesca: a new link between recreational fishers and stock management in Spain?”

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DPesca: The project

DPesca is a recreational fisheries data collection tool. Based on the self-report of the recreational fishers. The reported information is based on their catch and effort through digital application forms.

DPesca has been created and it is managed by Instituto Español de Oceanografía* within the project "Characterization of recreational fisheries in Andalusian waters" (2017-2020) funded by EMFF.



The project is developing in an area with 923 km of coastline and more than 270,000 fishing licenses. The main objectives are:

1. *Characterization of recreational fisheries in terms of fishing methods, fishing grounds, catches, discards, fishing effort, etc.*
2. *Data collection (quantity and quality) and continued in time.*

*Intermediate Managing Body of the EMFF



DPesca: The app

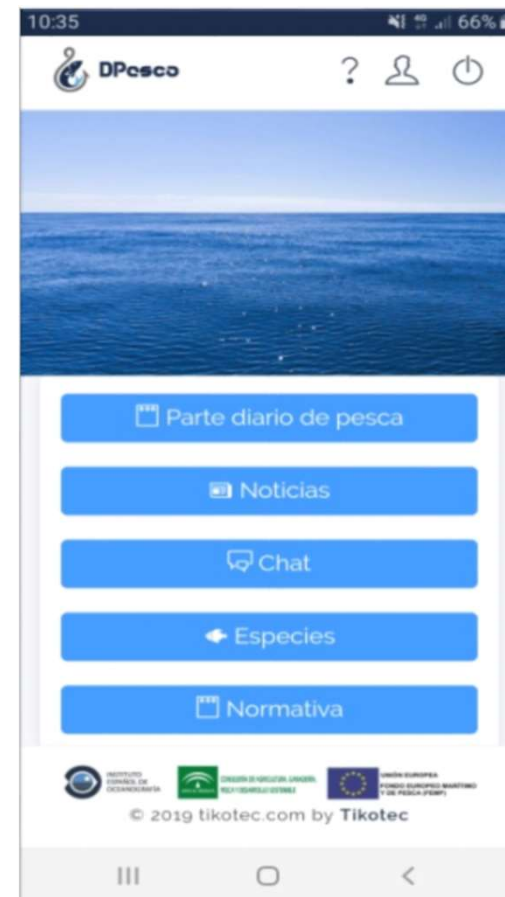
DPesca is available for Android and IOS devices (also in web-platform base) and in Spanish language. Initial costs were 3,600 euros and running costs are 350 euros per year.

Digital forms were tested from January to December of 2019 (development and validation):

1. More data (quantity and quality) the better.
2. Easy to fill: spearfishers and kayak fishers no training needed. Boat and coast fishers (greater average age) more specifications are advisable.
3. Fast to fill: 2 minutes.
4. Onsite surveys: to verify fisher-registered information

Dpesca was launched on May 2020 but due to the situation with Covid-19, it has not been possible to hold the planned meetings. Media campaign has been through social networks and specialized web pages.

Situation at present: ~250 km of coast covered (1 Atlantic and 1 Mediterranean subregions), 756 fishers registered (active: 30-40%), more than 1200 valid fishing days recorded.

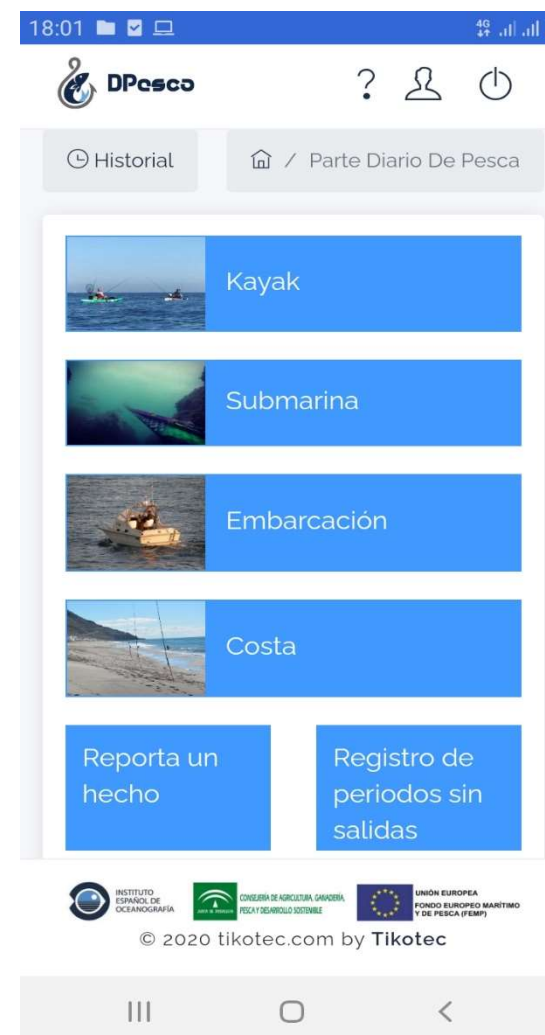


Dpesca: Output data¹

1. **Personal data²:** age, address (location), initial/annual costs, experience, type of fishing licence.
2. **Fishing category:** coast, boat, spearfishing and kayak.
3. **Fishing trip:** fishing grounds, diary costs, total fishing time (start-end), fishing subcategory, gears used, fishing rods, hooks and baits, etc.
4. **Catches and discards:** species, number of individuals, length (given by the fisher or through image analysis) and weight.
5. **Environmental data:** temperature, wind, depth, etc.
6. **Unusual events:** lost and abandoned fishing gears, cetacean sightings, invasive species, etc.

¹Handbook for recreational fisheries data collection in the Mediterranean and black sea (GFCM)

²Legal requirements: Law on Protection of Personal Data and guarantee of digital rights



Dpesca: Output data

Data collection: Spearfishing in Málaga (Pilot study, outgoing data example)

Family	Species	Common name	Capture modality					Month												Length (cm) min-max (average)	Depth range. (m)							
			Descending	Waiting	In the hole	Stalking	Breaker	J	F	M	A	M	J	J	A	S	O	N	D									
Balistidae	<i>Balistes carolinensis</i>	Grey triggerfish	+	+																					26.22-42 (33.85)	5-10		
Congridae	<i>Conger conger</i>	European conger			+																					149.9-160.1 (155.0)	4-15	
Gadidae	<i>Phycis Phycis</i>	Forkbeard			+	+																				27.82-52.21 (40.95)	10-20	
Haemulidae	<i>Plectorhinchus mediterraneus</i>	Rubberlip grunt	+		+																					24.27-48.61 (31.75)	5-15	
Labridae	<i>Labrus bergylta</i>	Ballan wrasse			+																					20.99-37.42 (30.18)	20-25	
Moronidae	<i>Dicentrarchus labrax</i>	European seabass		+																						32.57-63.28 (44.11)	10-15	
	<i>Dicentrarchus punctatus</i>	Black Spotted Bass																								27.84-46.47 (37.15)	10-15	
Mugilidae	<i>Mugil cephalus</i>	Flathead grey mullet	+	+		+																				38.26-38.26 (38.26)	3-10	
Mullidae	<i>Mullus barbatus</i>	Red mullet	+			+																				24.67-25.11 (24.86)	6-15	
	<i>Mullus surmuletus</i>	Surmullet	+	+		+																				13.11-33.24 (24.14)	6-15	
Pomatomidae	<i>Pomatomus saltatrix</i>	Bluefish				+																				25.30-88.74 (43.83)	2-15	
Scianidae	<i>Argyrosomus regius</i>	Meagre		+																						59-70 (64.5)	30-30	
Scombridae	<i>Scomber colias</i>	Atl. chub mackerel				+																				26.87-26.87 (26.87)	5-5	
Serranidae	<i>Ephinephelus alejandrinus</i>	White grouper			+																					42.11-42.11 (42.11)	15-15	
	<i>Ephinephelus marginatus</i>	Dusky grouper			+																					23.07-63 (45.10)	15-15	
Sparidae	<i>Dentex dentex</i>	Common dentex	+	+																						31.17-75.96 (52.39)	10-15	
	<i>Dentex gibbosus</i>	Pink dentex	+																							25-44.29 (34.70)	15-25	
	<i>Diplodus cervinus</i>	Zebra seabream	+																							20-46.90 (32.57)	5-15	
	<i>Diplodus puntazzo</i>	Sharps seabream	+	+	+	+																				24.38-52.87 (34.72)	5-15	
	<i>Diplodus sargus</i>	White seabream	+	+	+	+																				19.27-51.26 (29.73)	5-15	
	<i>Pagrus auriga</i>	Redband seabream	+																								31.05-43.67 (36.48)	30-30
	<i>Sparus aurata</i>	Gilthead seabream	+																								30.00-48 (37.65)	5-10

Dpesca: Challenges

Mayor Challenges: Engagement and retention

1. **Transparency**: how data will be used. Fishers need to internalize that they play an important role in data collection which allow to manage and to develop (or to modify) fishing policy.
2. **Fishers involvement**: surveys and digital forms were made with fishers' help.



Build collaboration and gain trust

(Message: more data, better management, more sustainability (included fishing activity))



Motivation

Dpesca: Challenges

Mayor Challenges: Engagement and retention

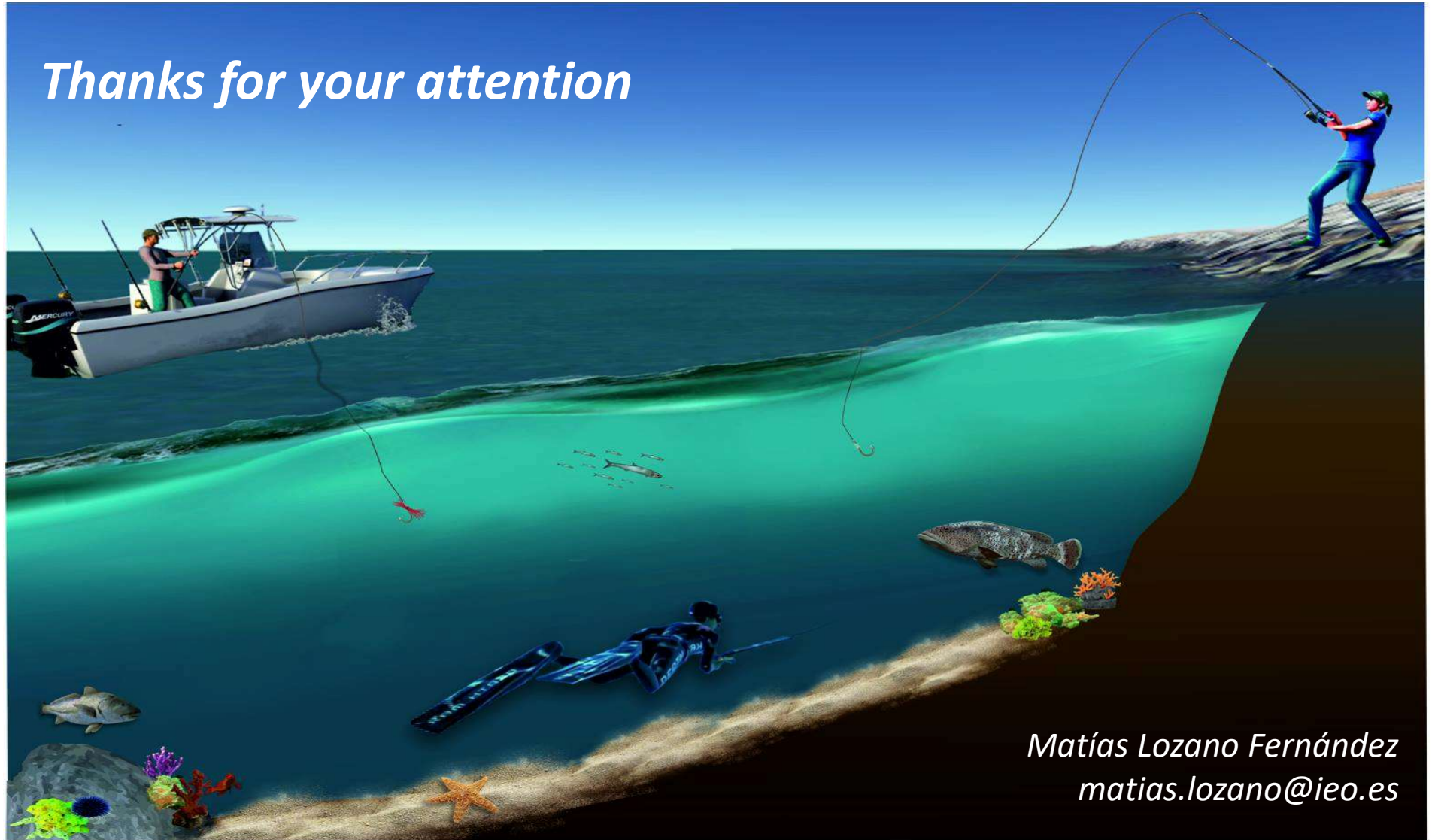
1. **Be active**: participate in specialized forums, publish news on social networks and disseminate the achievements that have been made.
2. **Be close**: communication channels (direct chat) are needed. Fishers need to feel the proximity of science and the objectives to be achieved.
3. **Make data available**: Technical reports (catches, discards, fishing effort, fishing grounds, etc.) are periodically made available to fishers and associations, so they can have access to the information that is being generated.



Final remarks

- Recreational fisheries data collection through digital applications (offsite surveys) are *cheap, easy* to use and allow to obtain the information on a continuous basis, in an updated and digitalized way. *Quick and simple* self-sampling.
- *Onsite surveys* must be done as a check for offsite surveys and online surveys as complementary data to boat and coast fishing categories (mainly), even if it implies an increase monitoring effort, both personal and financial.
- There is a significant *gap* between *fishers and managers* that directly affects the success of the use of digital forms by fishers. When the management measures that are implemented (for example in MPAs) are not based on scientific data, and significantly reduce or eliminate recreational fishing as a permitted activity, demotivation is assured and therefore non-participation of fishers in data collection.
- It is essential that representatives of recreational fisheries participate as in the development of management plans and regulations.

Thanks for your attention



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