



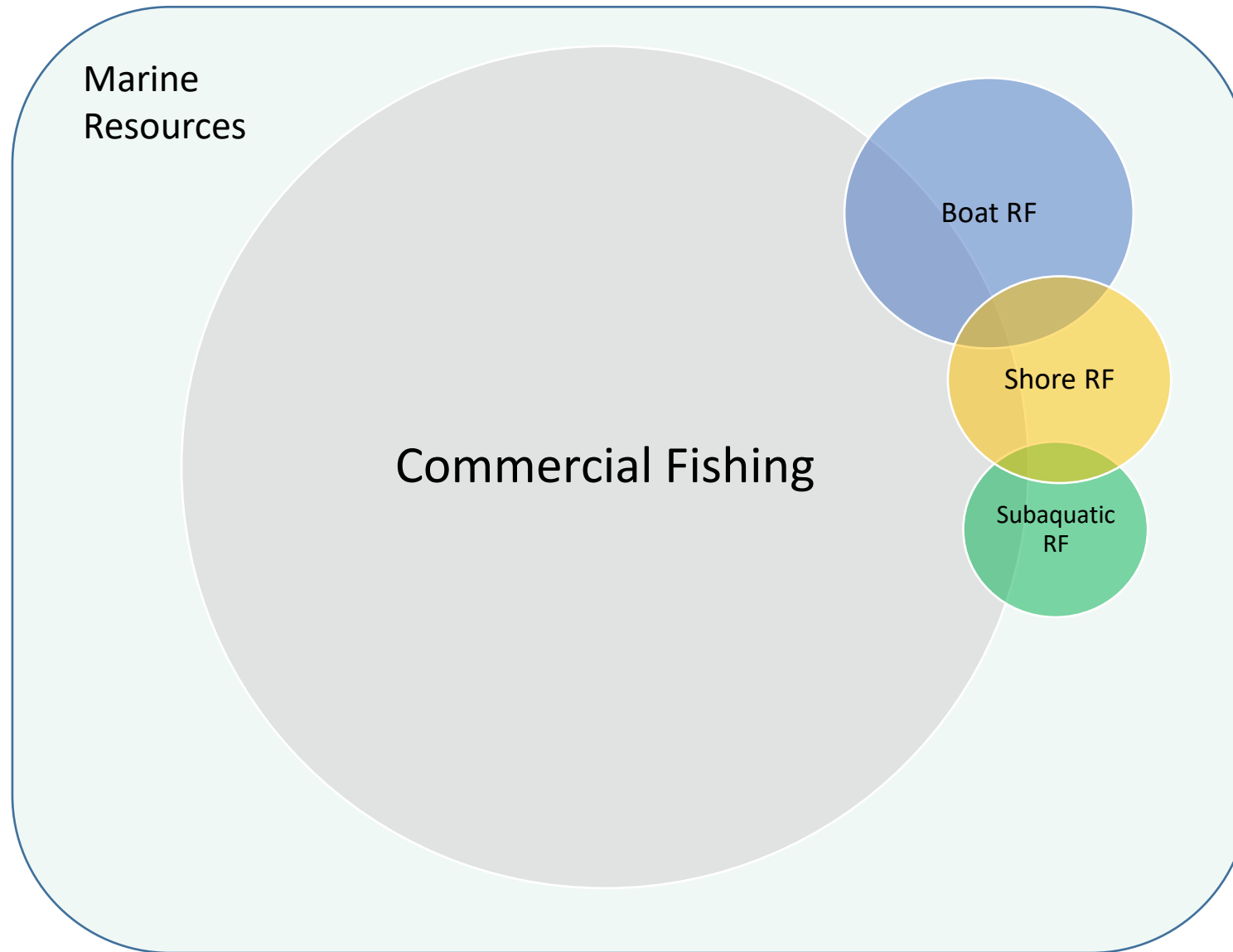
# MONITORING MARINE RECREATIONAL FISHING IN CATALONIA

Results of a pilot test and implementation of a permanent  
monitoring system

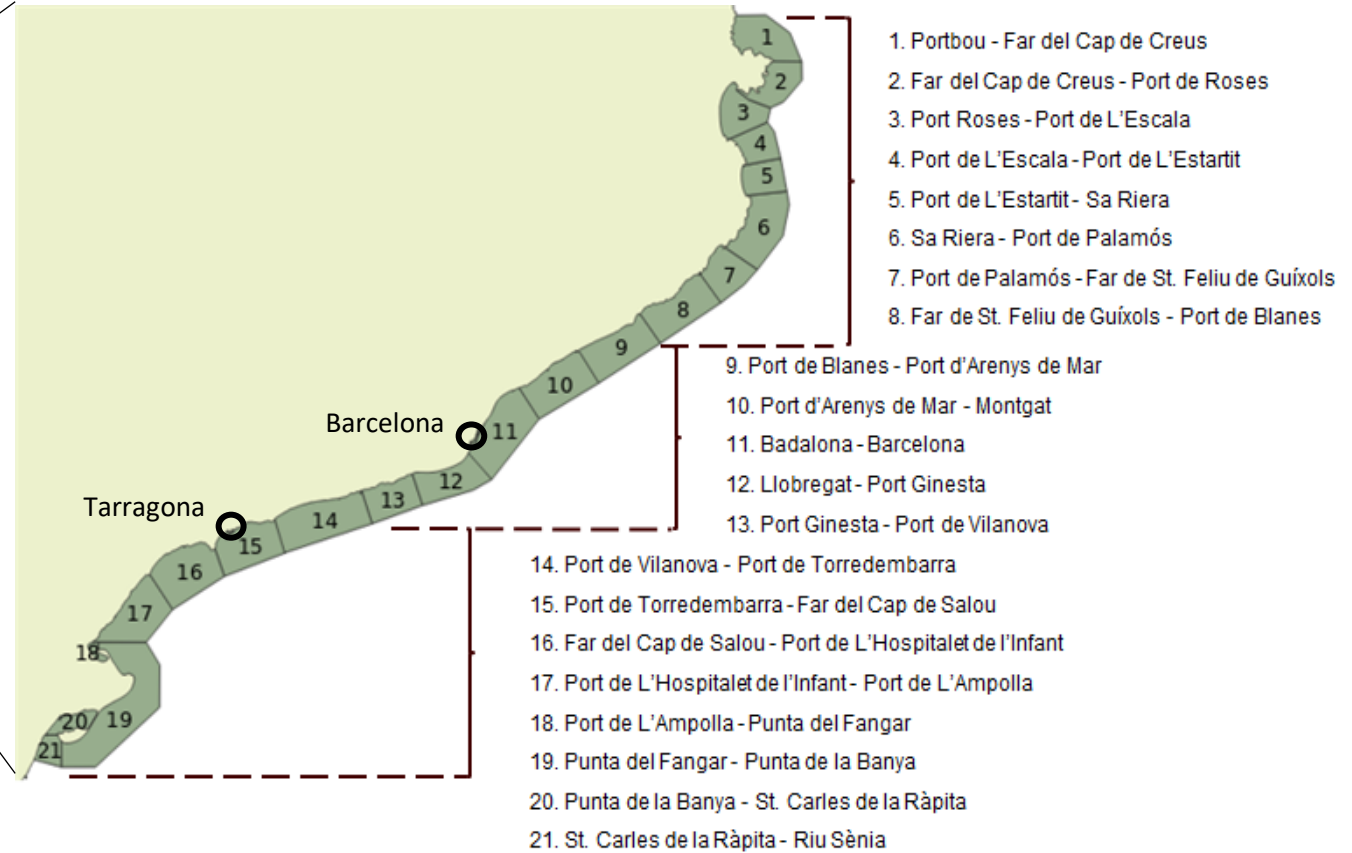


*Catalan Institute of Research for Ocean Governance (ICATMAR)*

Arnau L. Dedeu Dunton



# STUDY AREA: CATALONIA

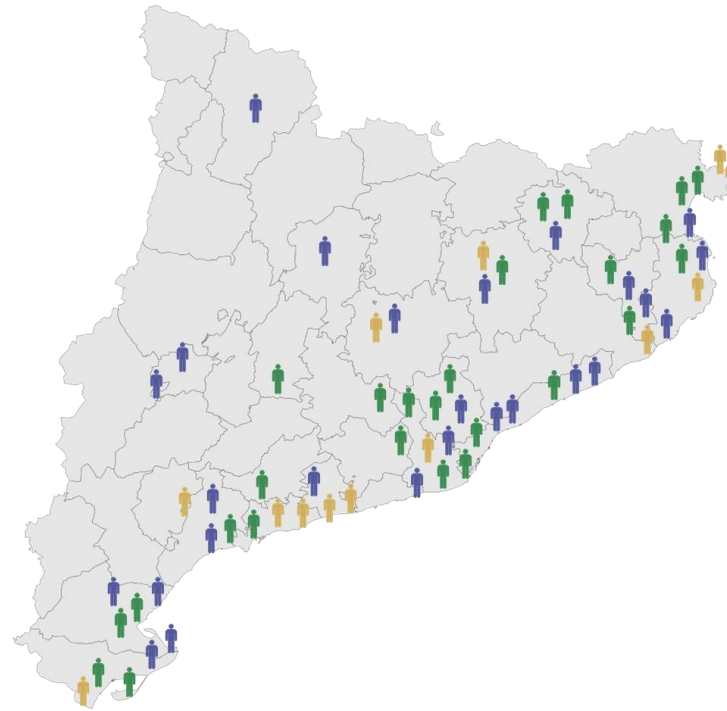


# MONITORING GOALS

1. Activity volume
2. Social profile
3. Economic evaluation
4. Fishing indicators
5. Catch compositions
6. Fishing impact

7. Validation of methodology

Pilot test



# MONITORING TOOLS

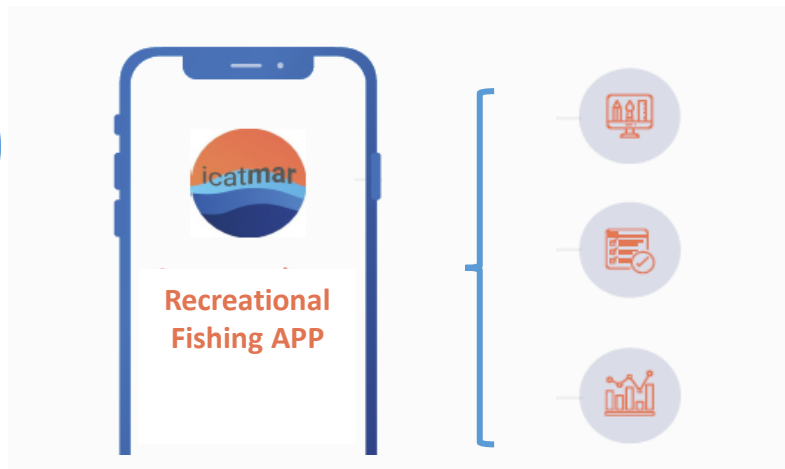
## Online Surveys

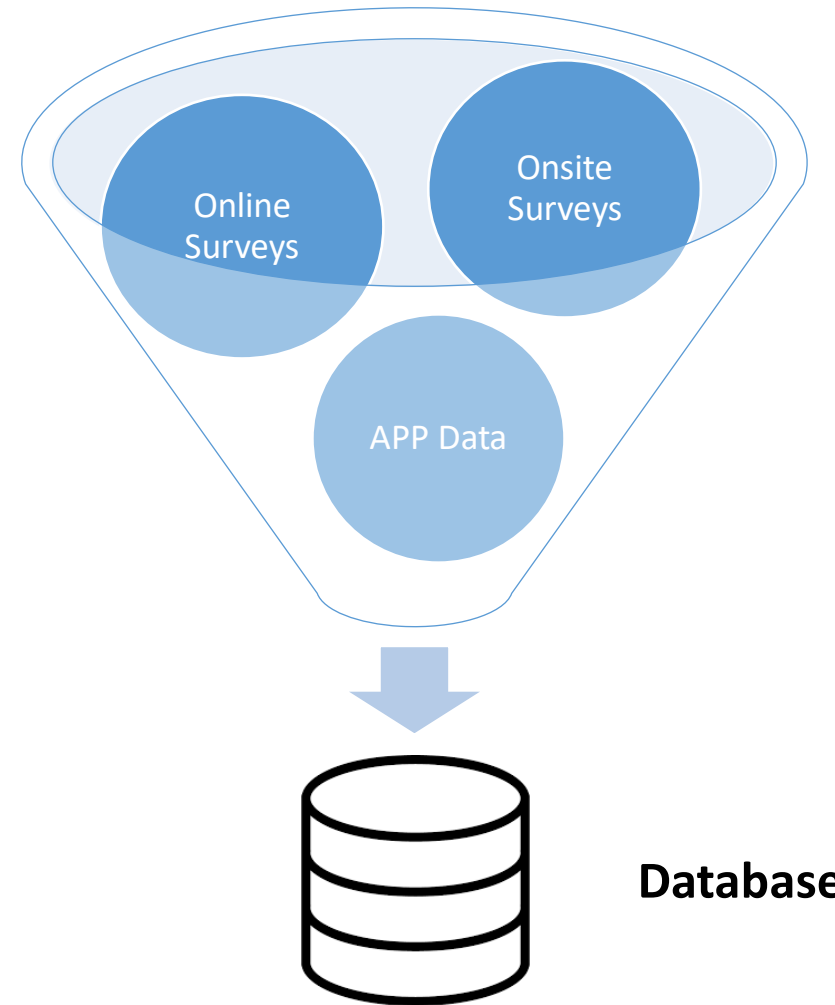
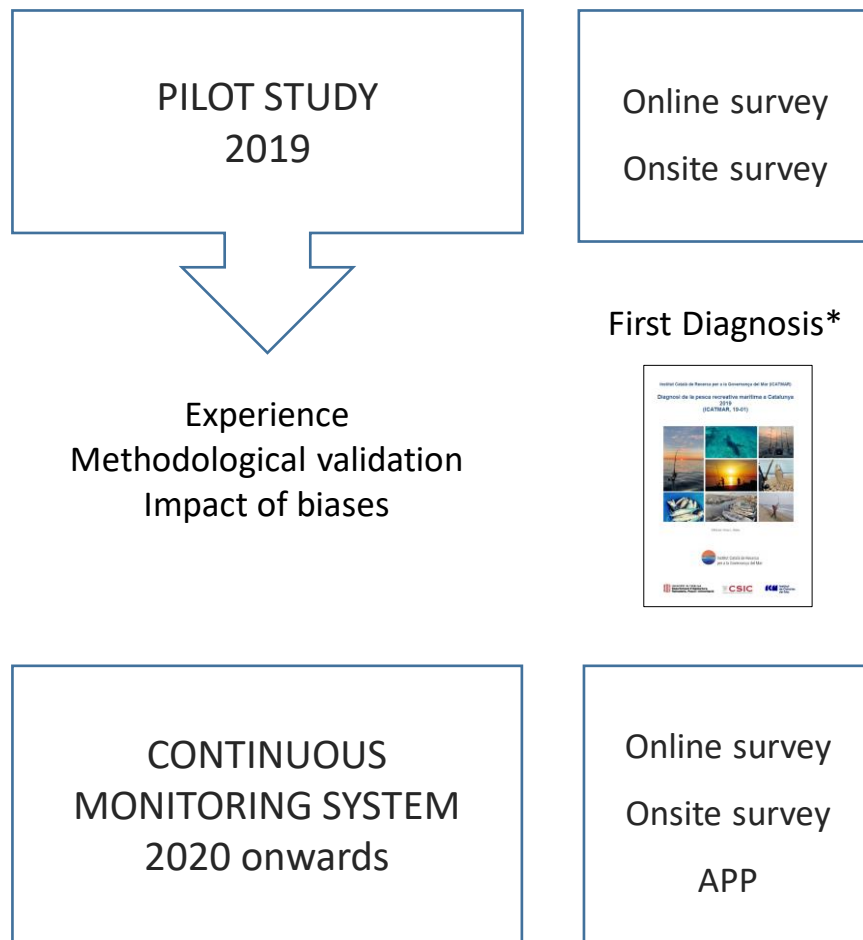
	Nada importante	Poco importante	Relativamente importante	Bastante importante	Muy importante	Prioritario
Pescado en el	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
de capturas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tamaño de las capturas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Liberar las capturas con vida	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Poder comer pescado fresco	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Pescar en buena compañía	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Poder regalar pescado a amigos o familiares	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Disfrutar de la naturaleza	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Disfrutar de la pesca al margen de las capturas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>

## Onsite Surveys



## APP

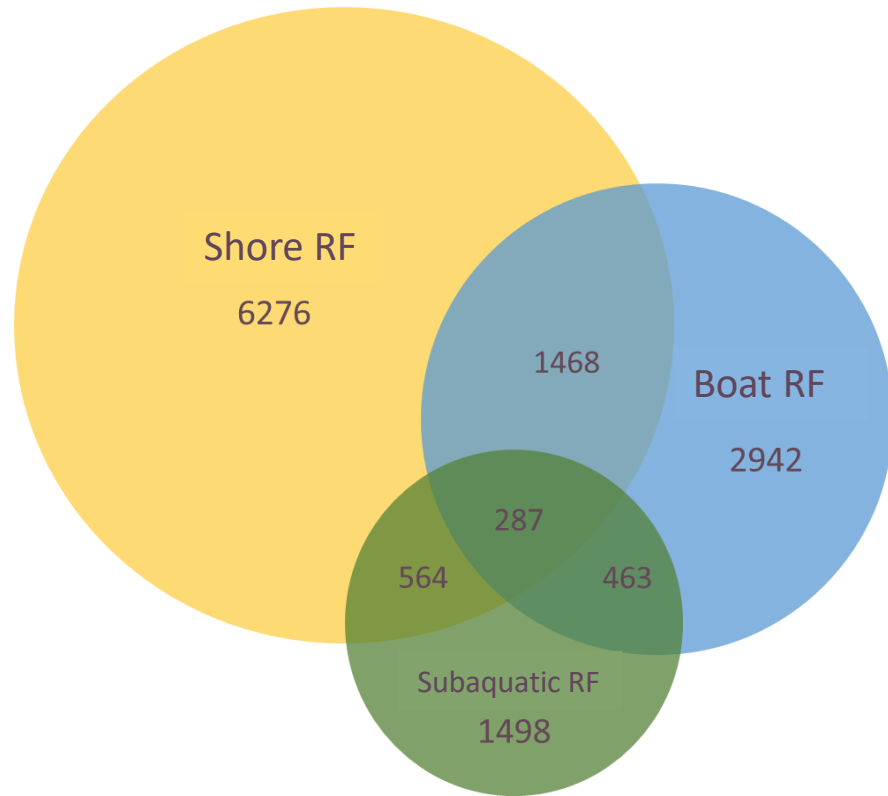




\*[http://agricultura.gencat.cat/web/.content/08-pesca/politica-maritima/enllacos-documents/fitxers-binaris/diagnosis-marine-recreational-fishing-catalonia-2019-ICATMAT-20-05\\_ENG.pdf](http://agricultura.gencat.cat/web/.content/08-pesca/politica-maritima/enllacos-documents/fitxers-binaris/diagnosis-marine-recreational-fishing-catalonia-2019-ICATMAT-20-05_ENG.pdf)

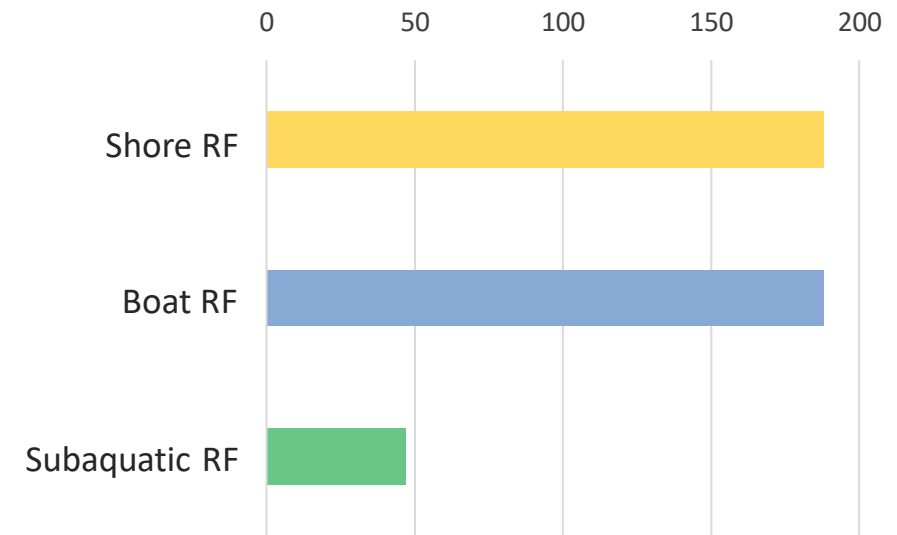
## ONLINE SURVEYS

9,200 responses



## ONSITE SURVEYS

30 sampling days  
423 responses

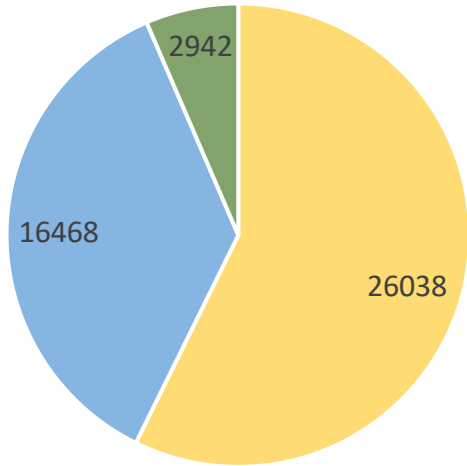


62 species identified

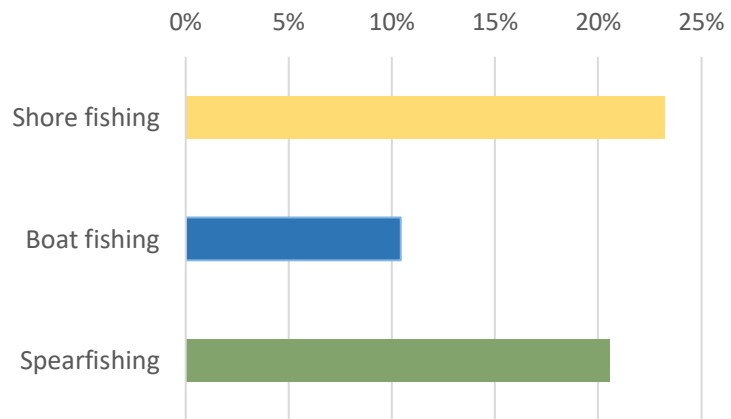
1,413 measured and weighted individuals

# PILOT STUDY RESULTS: ACTIVITY VOLUME

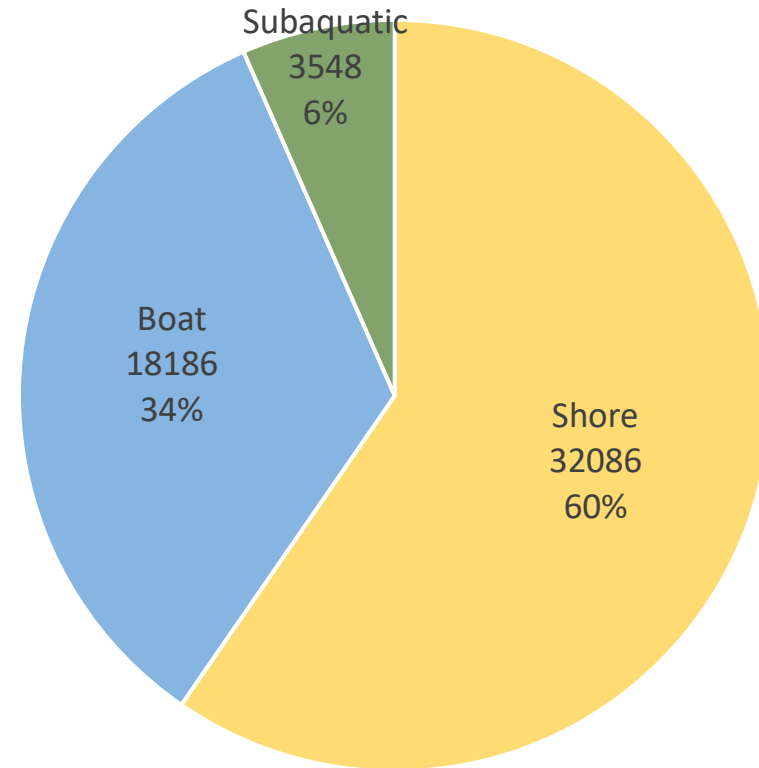
Number of licenses



Proportion of unlicensed activity



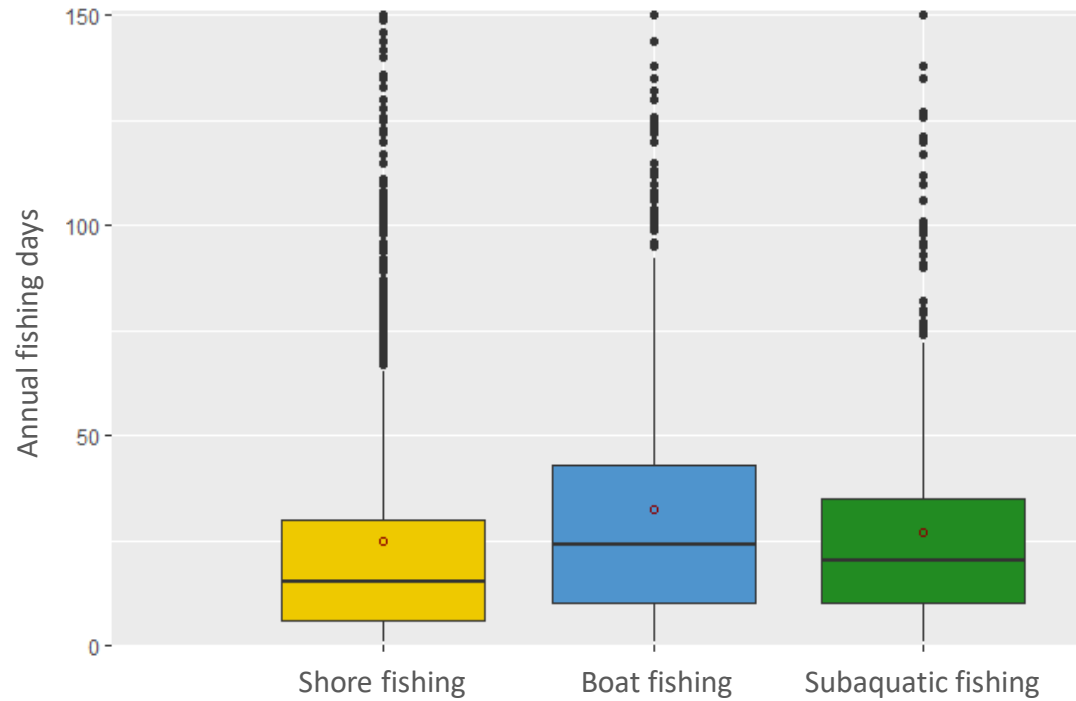
Estimated activity volume



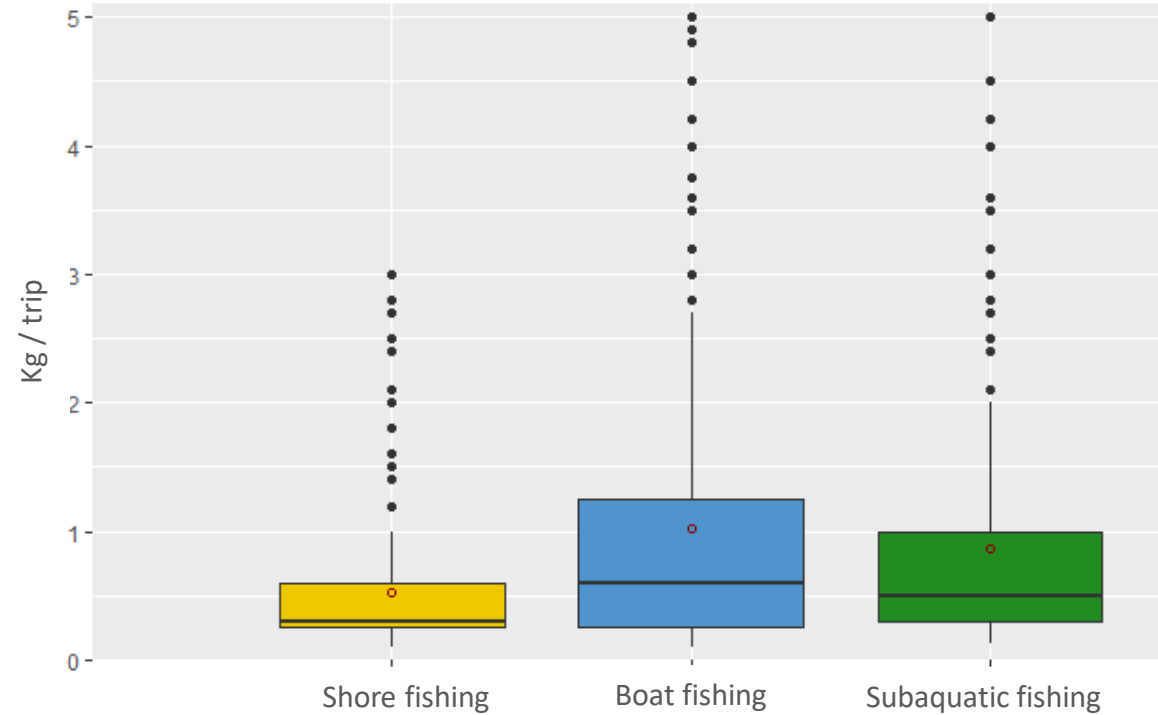


# PILOT STUDY RESULTS: FISHING INDICATORS

## Effort by fishing modality



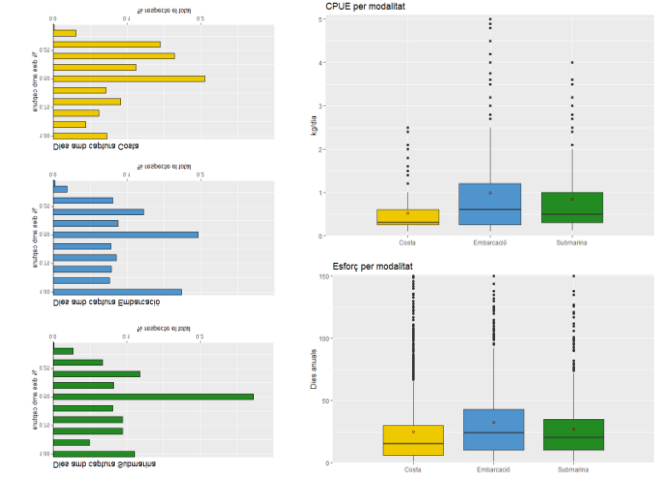
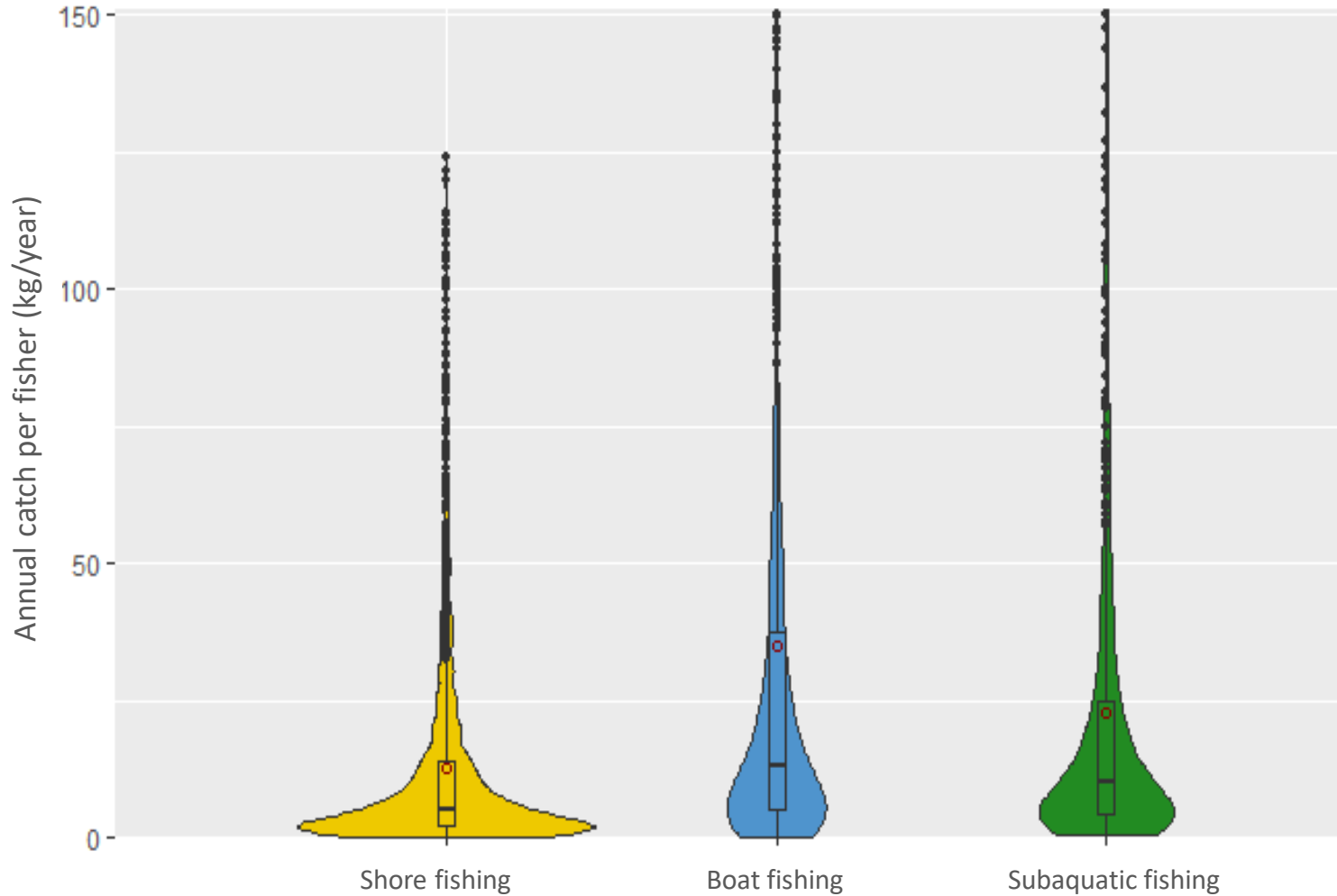
## HPUE by fishing modality



Modality	Effort (days/year)	HPUE (kg/trip)
Shore RF	25	0.53
Boat RF	32	1.03
Subaquatic RF	27	0.87

# PILOT STUDY RESULTS: TOTAL CATCH

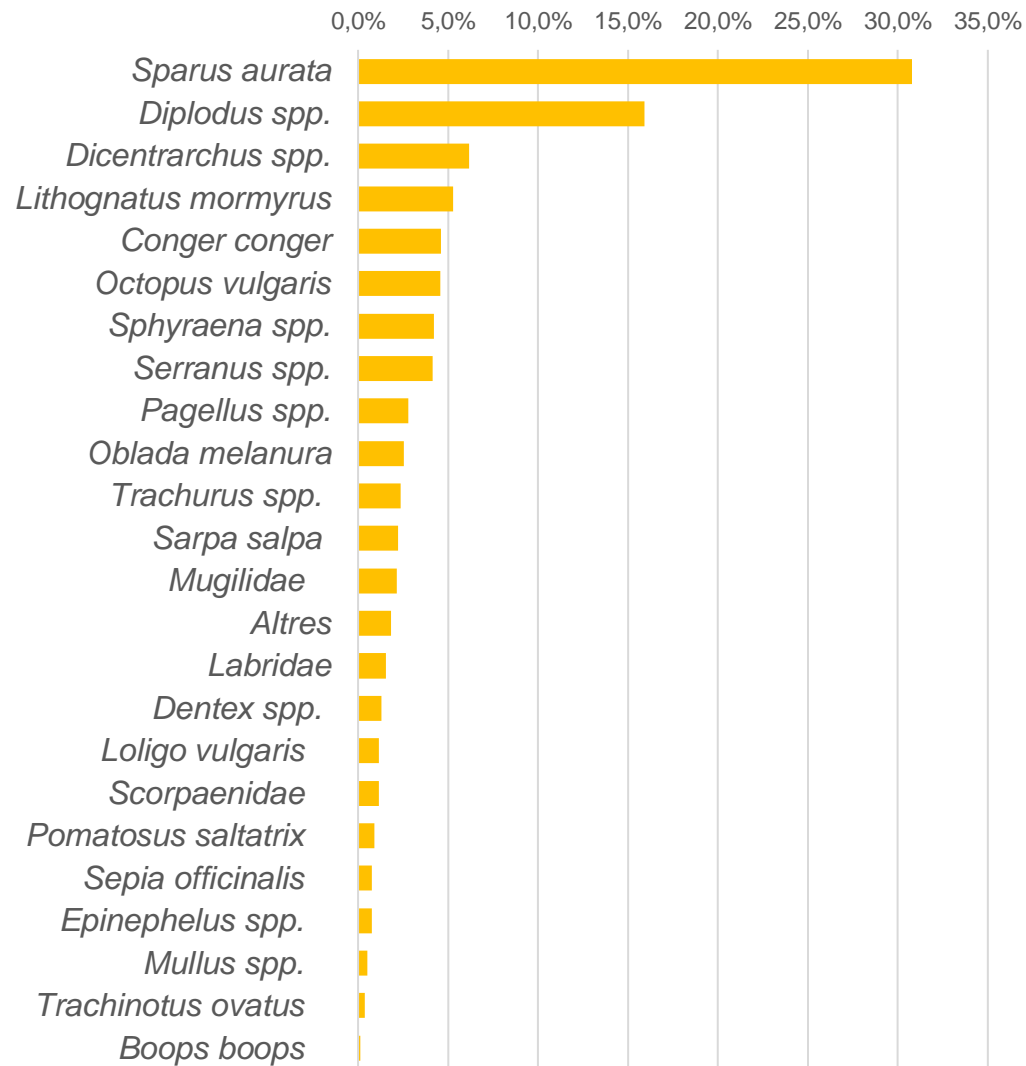
## Total yearly catch per fisher



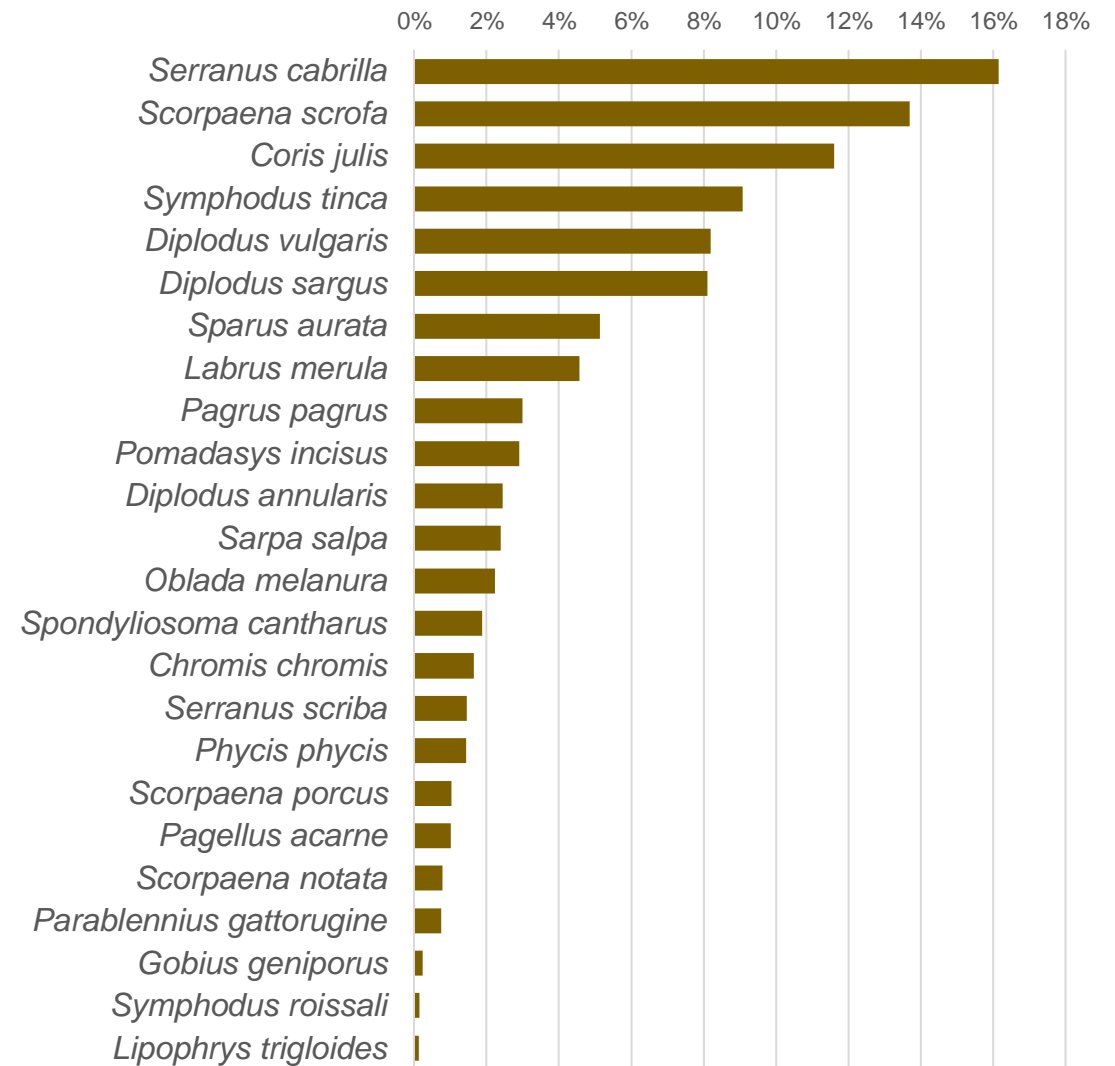
	Median (kg/year*RF)	Average (kg/year*RF)	Sum (t)
Shore RF	5	15.82	508
Boat RF	14	41.81	760
Subaquatic RF	10	27.66	98
<b>Total</b>			<b>1,366</b>

# PILOT STUDY RESULTS: CATCH COMPOSITIONS

## Online Shore Fishing

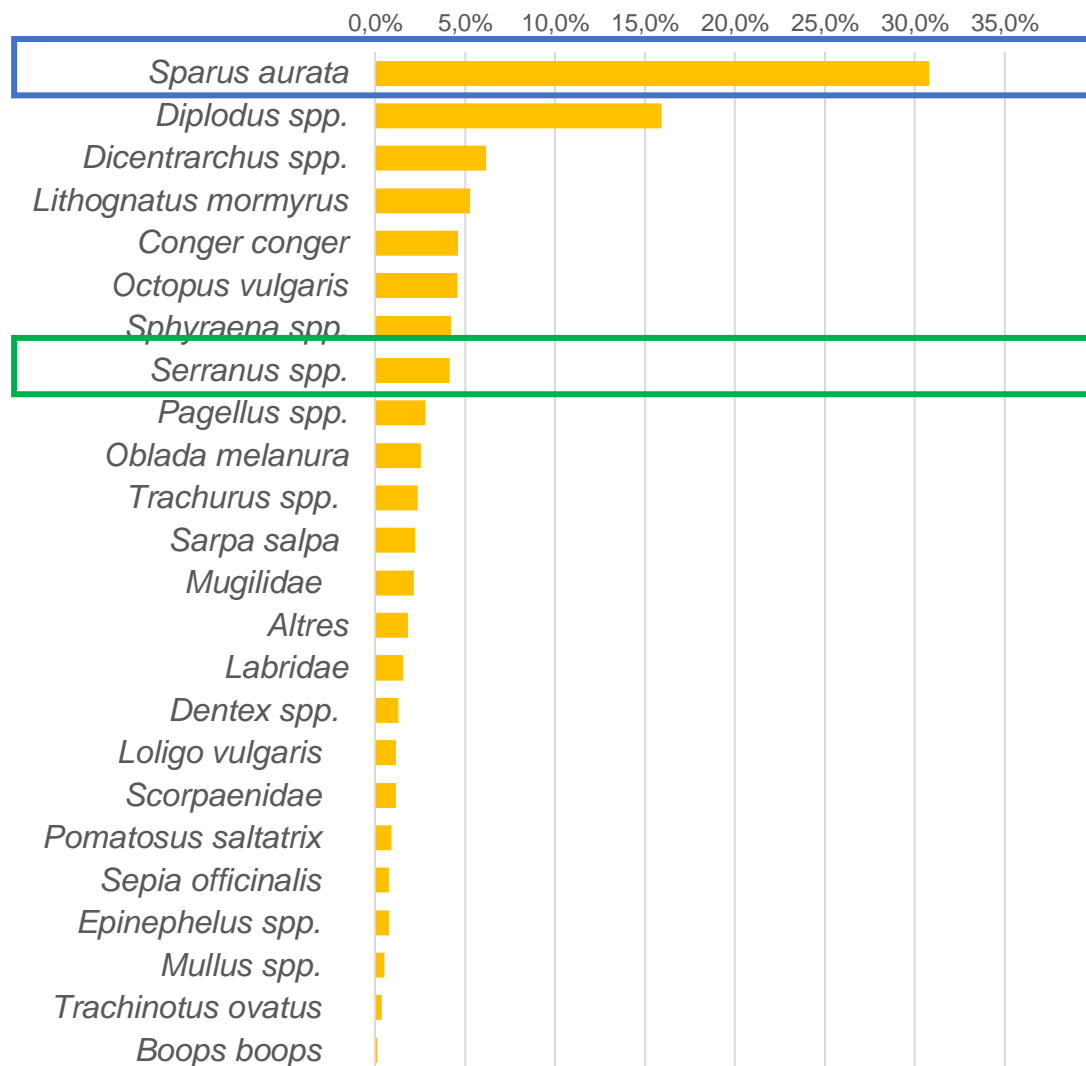


## Onsite Shore Fishing

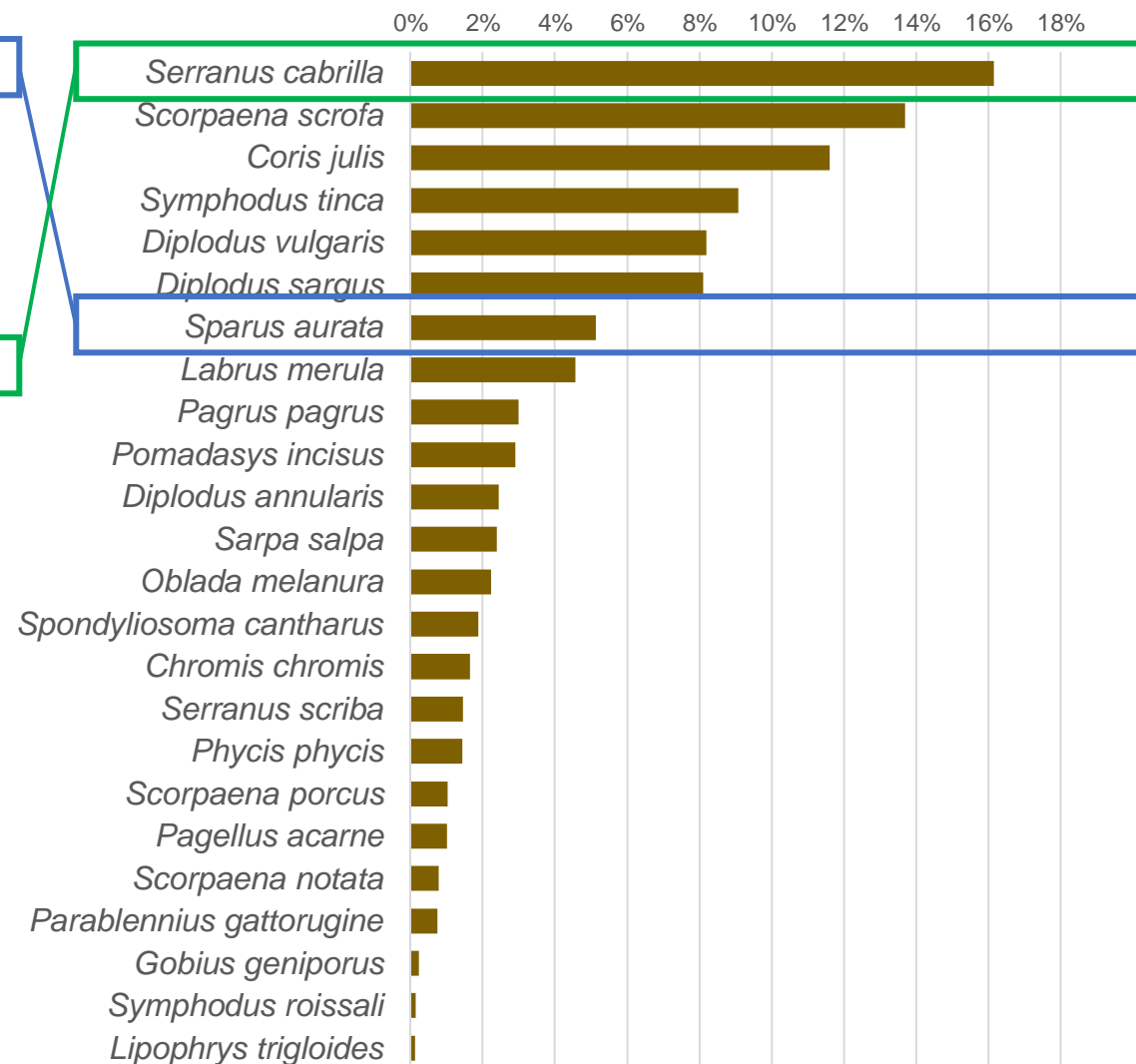


# PILOT STUDY RESULTS: CATCH COMPOSITIONS

## Online Shore Fishing

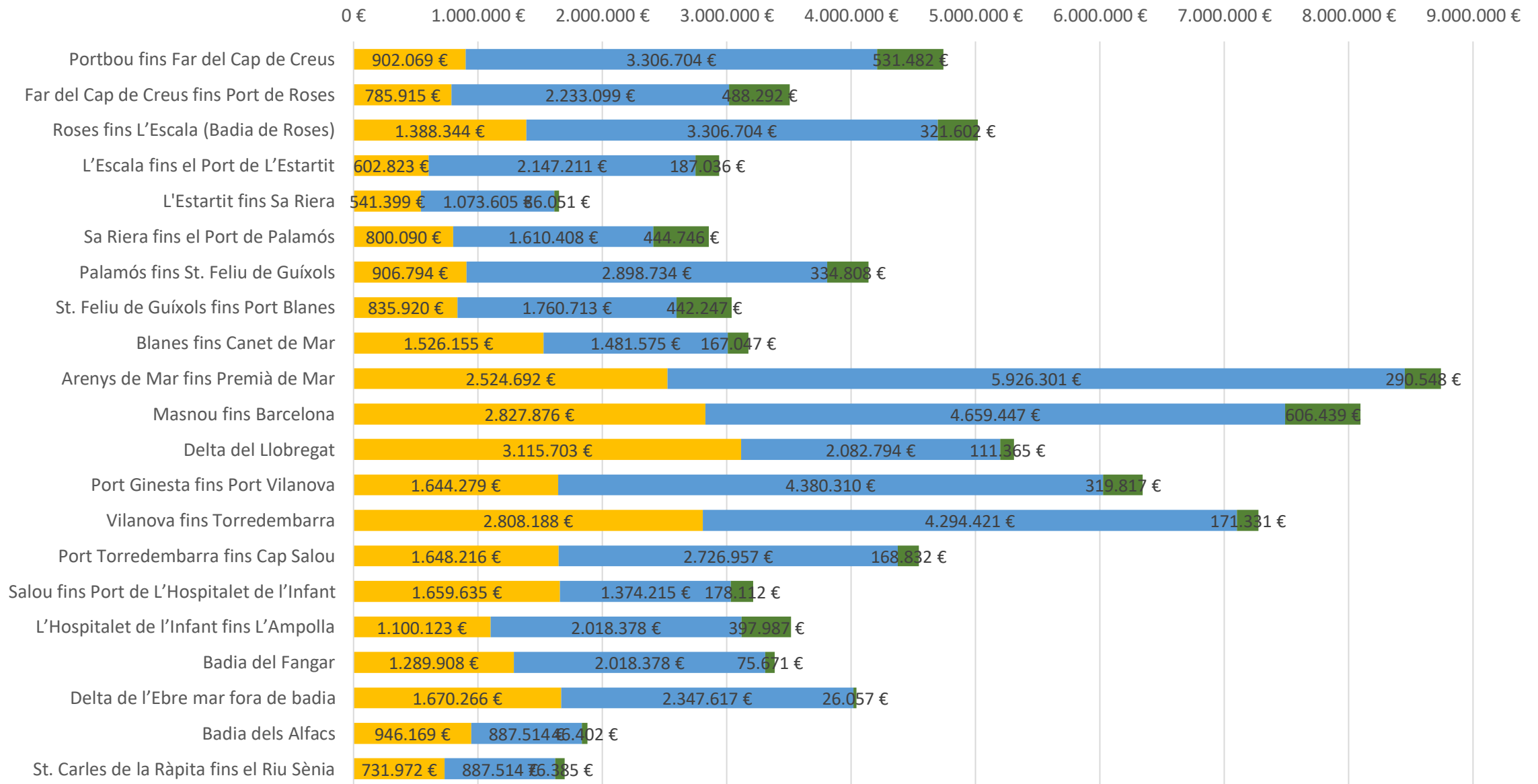


## Onsite Shore Fishing



	Direct impact	Total activity expenditure (direct + indirect)
Shore RF	16,178,446 €	30,256,536 €
Boat RF	11,984,832 €	53,422,600 €
Subaquatic RF	993,803 €	5,422,256 €
<b>Total</b>	<b>29,157,080 €</b>	<b>89,101,392 €</b>

# PILOT STUDY RESULTS: ECONOMIC IMPACT



# LESSONS LEARNED TOWARDS THE CONTINUOUS MONITORING SYSTEM

	PILOT STUDY	CONTINUOUS MONITORING	DATA USE
Onsite Surveys	<ul style="list-style-type: none"><li>• 30 sampling days</li><li>• Partial territorial coverage</li></ul>	<ul style="list-style-type: none"><li>• 90 sampling days</li><li>• Total territorial coverage</li></ul>	<ul style="list-style-type: none"><li>• CPUE</li><li>• Catch compositions</li></ul>
Online Surveys	<ul style="list-style-type: none"><li>• Open survey</li><li>• Partial seasons</li><li>• 9.000 annual surveys</li></ul>	<ul style="list-style-type: none"><li>• Closed survey</li><li>• Seasonal model</li><li>• 12.000 annual surveys</li></ul>	<ul style="list-style-type: none"><li>• Effort</li><li>• Social profile</li><li>• Economic impact</li><li>• Human dimensions</li></ul>
APP		<ul style="list-style-type: none"><li>• Under development</li><li>• Co-Design group</li></ul>	<ul style="list-style-type: none"><li>• Potential suport for catch compositions</li></ul>



# MONITORING MARINE RECREATIONAL FISHING IN CATALONIA

Results of a pilot test and implementation of a permanent  
monitoring system



*Catalan Institute of Research for Ocean Governance (ICATMAR)*

Arnau L. Dedeu Dunton