

Table S1. Examples of studies that applied the passive citizen science approach using social media data for marine species. A brief description of the initiatives is given, as are some details regarding data sources and data collection. SS = scientific surveys; CS = voluntary citizen science; BL = blogs; NW= news; LIT = literature review; PC = personal communications; IW = interviews; WB = other web data; MU = biological museums; CD = commercial data; Na = no data or not assessed; / = not applicable.

Marine wildlife	Social media data								Other data		References
	Where	When	Platform	Search method	Filtering method	Data collected	N spp.	N obs.	Sources	N obs.	
Coral reefs	Central-Eastern Mediterranean	2009 - 2015	YouTube and Facebook	Keywords (location, date, and common species names) + dive centers	Manual	Location, date, depth, dive spot name, chromatic variations, occurrence of fishing lines, substrates preferences, and damages	9	138	SS, CS	1119	Di Camillo et al. 2017
	Great Barrier Reef, Australia	Mar -Dec 2016	X/Twitter	Keywords (locations and general descriptors)	Manual and automated	Location, date, and sentiment score	Na	434	SS, CS, WB	8857	Becken et al. 2019
Jellyfish	Malta, Mediterranean	1 Jul - 15 Aug 2015	X/Twitter and Google+	Keywords (locations and common species names)	Automated	Location and date	Na	230	CS, BL, NW	100	Jovanovic and Vukelic 2015
	Alboran Sea, Mediterranean	1993-2015	Flickr, Panoramio, YouTube, and Facebook	Na	Manual	Location and date	1	16	SS, CS, LIT, NW, WB	149	Kienberger and Pietro 2017
	Mediterranean	Na	X/Twitter	Keywords (common species names and general descriptors)	Automated	Location, date, and number of individuals	Na	Na	CS	Na	Laudy et al. 2017; 2020

	Lybia	21 Sep 2015	Facebook	Na	Manual	Location, time, and depth	1	1	/	/	Rizgalla and Crocetta 2020
	Worldwide	Na	YouTube	Keyword (common species name)	Automated	Location	15	226	/	/	Ruiz-Frau et al. 2022
	Northeastern Brazil	Oct 2020–Mar 2021	Instagram	Keywords (common species names)	Manual	Location and date	1	3	/	/	Nascimento et al. 2022
	South and Southeast Brazil	01 Nov 2020 – 31 Dec 2022	Facebook, Instagram, YouTube, X/Twitter, and TikTok	Keywords (common and scientific species names)	Manual	Location, date, size, type of observation, and species association	1	53	LIT, PC, WB	10	Nascimento et al. 2023
	Northeastern Brazil	23 August 2016	Instagram	Keyword (common species name)	Manual	Location, date, size, type of observation, and species association	1	1	/	/	Nascimento et al. 2024
Marine worms	Croatia	2000 - 2019	YouTube	Keywords (locations, common and scientific species names) + dive centers	Manual	Location, date, circumstances of the observation, depth, and behavior	1	30	LIT, SS, CS	110	Krzelj et al. 2020
Molluscs	Lybia	23 Jun 2018-18 Sep 2018	Facebook	Keywords (common species names) + Spearfishing groups	Manual	Location, date, time, depth, and methods	1	4	SS	1	Rizgalla et al. 2019
Marine mites	Japan	Na	X/Twitter	Na	Na	Na	1	1	SS	Na	Pfingstl et al. 2021
	Japan	Na	X/Twitter	Na	Na	Na	1	1	SS	Na	Pfingstl et al. 2022

Crabs	Central Mediterranean	19 June 2016	Na	Na	Manual	Location and date	1	1	SS, CS	12	Deidun et al. 2017
	Brazil	Oct 2020–Mar 2021	Instagram	Keywords (common species names)	Manual	Location and date	1	3	/	/	Nascimento et al. 2022
Mud Lobsters	Philippines	2015 - 2021	YouTube	Keywords (locations and common species names)	Manual	Location, date, main content, fishing method, gear design, catch rate, price, surrounding environment, cooking method/ menu, sex, size, maturity, and behavior	Na	30	/	/	Albarico et al. 2021
Seahorses	Taiwan	2017 - 2019	Facebook and Instagram	Keywords (common species name) + groups of underwater photography and marine biodiversity	Manual	Location, date, and depth	5	Na	/	/	Heard et al. 2019
Groupers	Lybia	Dec 2011 – Dec 2015	Facebook and YouTube	Keywords (locations, common species names, and general descriptors) + spearfishing groups	Manual	Location, skin lesion, depth, weight, and the time of the dive	1	Na	WB	Na	Rizgalla et al. 2017

	Italy	2011 - 2017	YouTube	Keyword (common species name)	Manual and automated	Location, date, depth, mass of fish, and fishing method	4	262	/	/	Sbragaglia et al. 2021
Sharks and rays	Indo-West Pacific	Feb - Mar 2019	Instagram, Facebook, YouTube, and X/Twitter	Keyword (common species name)	Manual	Location, date, and user name	1	53	/	/	Araujo et al. 2020
	Southeastern Brazil	2013 - 2018	YouTube and Facebook	Na	Manual	Location and date	1	4	LIT, NW, PC, IW	15	Di Benedetto et al. 2020
	Indonesia	Jul 2019 - Feb 2020	Instagram, X/Twitter, and Facebook	Keywords (locations, common species names, and general descriptors)	Manual	Location, date, user name, common name or search term, context, and animal usage	4	1219	WB	Na	McDavitt and Kyne 2020
	Greece	2017 - 2019	Facebook, X/Twitter, and YouTube	Keywords (common species names)	Manual	Location, date, circumstances of the observation, fate of the sharks, sex, maturity stage, size, weight, and depth	19	116	/	/	Taklis et al. 2020
	Italy	2011 - 2020	Instagram, Facebook, and YouTube	Keywords (locations, common species names, and general descriptors) + groups of diving, fishery,	Manual	Location, date, type of record, number of individuals, sex, life stage, and biological and/or	1	146	NW	Na	Boldrocchi and Storai 2021

				and marine biodiversity		ecological observations					
	Thailand	Jun-Jul 2020	Facebook, X/Twitter, and Instagram	Keywords (locations, common and scientific species names)	Manual	Location of seller, location of buyer, sale date, year first posted, site type, product type, size of thorn, price in local currency, cultural relevance, legality of trade, and reference to other potentially illegal wildlife items	1	Na	WB	Na	Pytka et al. 2023
	Mediterranean Sea	Na - Apr 2021	YouTube, Facebook, Instagram, and X/Twitter	Keywords (common and scientific species names and general descriptors) + Diving, fishing, and elasmobranchs groups	Manual	Location, date, species, sightings and catches, social media user, and user perceptions	4	119	LIT	85	Cattano et al. 2023
	English Channel and adjacent seas	2013-2021	YouTube	Keywords (location, common and scientific names, and general descriptors)	Manual	Location, type of fishing gear, species, and number of specimens	4	44	CD	Na	Biton-Porsmoguer and Lloret 2023

Other fishes	Mediterranean	1 Mar 2020	Facebook	Fish group	Manual	Location, date, depth, size, and fishing artefacts	1	1	/	/	Azzuro and Tiralongo 2020
	Mediterranean Egypt	2020	Facebook	Fishing groups	Manual	Location, date, depth, and fishing method	5	5	LIT	48	Al Mabruk et al 2021
	Italy	2009-2019	YouTube	Keywords (common species name and general descriptors)	Manual and automated	Location, mass of the fish, positive and negative feelings	/	376	/	/	Sbragaglia et al. 2022
	Turkya	Jan 2017 – Dec 2019	YouTube	Keywords (common species name)	Manual	Location, date, duration, angling method, number of catches, bycatch species and their number, number of escaped bluefish, and number of bluefish caught as juvenile or adult	1	929	/	/	Eryaşar and Saygu 2022
	Mediterranean	Aug-Sep 2022	Facebook	Na	Manual	Location, date, species, identification method, observer, source category, source link, and photographer	2	9	LIT, CS	1015	Kovačić et al. 2023
	Brazil	Na	YouTube	Na	Manual	Location, abundance, and environment	1	2	LIT, SS, WB	17	Franco et al. 2023

Sea turtles	Libya	Jan 2019 - May 2020	Facebook and YouTube	Keywords (common and scientific species names)	Manual	Location, date, time, size, sexual maturity, cause of stranding, and carcass decomposition stage	3	232	SS, IW	42	Rizgalla 2021
	Zakynthos, Greece	1 Apr - 30 Nov 2018 and 2019	Instagram	Keywords (common and scientific species names)	Manual	Location, date, and risk of trauma	1	3789	/	/	Papafitsoros et al. 2021
	Zakynthos, Greece	1 - 31 Oct 2021	Instagram	Keywords (common and scientific species names)	Manual	Location and date, carapace length, life stage, and foraging behavior	1	1	SS	Na	Papafitsoros 2022
	New Caledonia	2013 - 2019	Instagram	Keywords (location, common and scientific species names, and general descriptors)	Manual and automated	Location and date	3	946	/	/	Read and Jean 2021
	Pernambuco, Brazil	2010-2020	Instagram	Keywords (location and general descriptors)	Manual	Location, date, species, and dive-turtle interaction	3	220	/	/	Leitão et al. 2022
	Arraial do Cabo, southeastern Brazil	Nov 2019 - Na	Instagram, YouTube, and Vimeo	Keyword (general descriptor)	Manual	Location, date, species, and disease	2	Na	CS, SS	Na	Neves-Ferreira et al. 2023
Seabirds	Central Mediterranean	16 Nov-8 Dec 2022	Facebook, X/Twitter, TikTok,	Keywords (location and common and	Manual	Location, date, number of specimens, age	1	238	CS, WB	154	Balestrieri et al. 2023

			Instagram, Flickr, YouTube, and Pinterest	scientific species names)		class, disease, and status (alive vs. dead)					
	Mediterranean	Nov-Dec 2022	Facebook, X/Twitter, TikTok, and Instagram	Keywords (location, common and scientific species names, and general descriptors)	Manual	Location, date, and prey	1	39	CS, WB, SS	6	Monti et al. 2024
Monkseals	Hawaiian Islands	1 Oct 2014 - 30 Sep 2015	Instagram	Keyword (common species name)	Manual	Location, date, behavior, human disturbance and public perceptions	1	2392	CS	7655	Sullivan et al. 2019
	Jaffa, Palestine	Na	Na	Na	Na	Na	1	Na	NW	Na	Abd Rabou 2023a, Abd Rabou et al. 2023b
Dugongs	New Caledonia	Na	Instagram, Facebook, and YouTube	Keywords (common species name and general descriptors)	Manual and automated	Location and species	1	1303	SS	161	Mannocci et al. 2021
Cetaceans	Hellenic Seas	Sep 2014	YouTube	Keywords (locations and common species names)	Manual	Location, species, video quality, video duration, dolphin behavior, and observer's behavior toward dolphins	4	500	/	/	Gibson et al. 2016

	Tyrrhenian Sea	2008 - 2017	YouTube and Facebook	Keywords (locations and common and scientific species names)	Manual	Location and date or season	10	557	LIT, SS, NW	717	Pace et al. 2019
	China	Jan 2009 – Dec 2018	Sina Weibo	Keywords (common species names and general descriptor)	Manual and automated	Location, date, time, species, outcome, gender of user, user type, key propagating users, and forwarding counts and time, emotions, and topics of comments	Na	230	/	/	Wu et al. 2020
	North Ireland	2007 - 2016	Facebook, X/Twitter, and Flickr	Na	Manual	Location, date and estimated group size	1	Na	CS	Na	Gibson et al. 2020
	South Portugal	2008 - 2020	Instagram and Facebook	Whale-watching companies	Manual	Location, date and number of individuals	16	1403	CS	82	Morais et al. 2021
	Southeast Asia	2009-2019	Facebook	Keywords (location, common species names, and general descriptors)	Manual	Location; date; cause of death and whether a necropsy was carried out	15	163	/	/	Coram et al. 2021
	New Zealand	Apr 2015 – Jul 2016	Facebook	Whale and dolphin groups	Manual	Location, date, time, species, physical description of dolphins, group size, group	3	260	SS	/	Outhwaite and Stockin 2022

						composition, behavior, and their direction of travel					
	New Zealand	2013-2021	Facebook	Cetacean groups	Manual	Location, date and species, group composition, and life stage	Na	45	SS, CS, WB	71	Cranswick et al. 2022
	Black Sea	27 April – 31 July 2022	Na	Na	Na	Na	3	51	SS, CS	Na	Węgrzyn et al. 2023
Marine megafauna	Worldwide	May 1998 - Jul 2019	YouTube	Keywords (common names species and general descriptors)	Manual	Location, date, time, depth, offshore operation type, project, equipment and structure	28	46	CS	36	Todd et al. 2020
	Worldwide	Na	YouTube and X/Twitter	Na	Automated	Location, date, and species	dozens	thousands	CS, WB	thousands	Berger-Wolf et al. 2017; Blount et al. 2022
	Philippines	2011-2018	Facebook	Marine conservation and pollution pages	Manual	Location, date, and species	17	32	/	/	Abreo et al. 2019
Top predators	North Aegean Sea	2017 - 2020	Na	Na	Manual	Location, date, and species	11	Na	SS, IW	Na	Kesici et al. 2021
Cryptogenic and alien species	Greece	Na	Instagram and Facebook	Diving centers pages	Manual	Location, date, and species	60	268	SS, CS, LIT, PC, WB	5210	Ragkousis et al. 2023

Marine wildlife in general	Worldwide	Na	Facebook	Marine biodiversity groups	Automated	Location, date, species, and species interaction	Na	Na	/	/	Chamberlain 2018
	Mediterranean	Jun-Sep 2021	YouTube	Keywords (location, common names species, and general descriptors)	Manual	Location, species, and number of entangled individuals	86	113	/	/	Perroca et al. 2022
	Worldwide	01 Aug 2021 – 31 Jan 2022	Facebook, X/Twitter, and Instagram	Keywords (general descriptors)	Manual	Location, date, species, life stage, pandemic-related debris, and interaction with pandemic-related debris	dozens	77	LIT, CS, PC, WB, NW	43	Ammendolia et al. 2023