

CV date	13/12/2022
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Part A. PERSONAL INFORMATION

First name	Eneko		
Family name	Aspillaga Cuevas		
Gender	Male	Date of Birth	27/11/1987
ID number	44564149Q		
e-mail	aspillaga@imedea.uib-csic.es	URL Web	
Open Researcher and Contributor ID (ORCID) (*)	0000-0002-8888-8731		

A.1. Current position

Position	Postdoctoral research fellow (Vicenç Mut program, CAIB)		
Initial date	16/06/2022		
Institution	Consejo Superior de Investigaciones Científicas (CSIC)		
Department/Centre	Department of Marine Ecology / Mediterranean Institute for Advanced Studies (IMEDEA, CSIC-UIB)		
Country	Spain	Phone number	+34 971 611 823
Keywords	Movement ecology, animal behaviour, marine-ecology, sustainable fisheries, bio-telemetry, marine protected areas		

A.2. Previous positions (research activity interruptions)

2021-2022	Postdoctoral research assistant / IMEDEA, CSIC-UIB / Spain
2019-2021	Postdoctoral research fellow (Margalida Comas program, CAIB) / IMEDEA, CSIC-UIB / Spain
2019-2019	Postdoctoral research associate / Université de Perpignan Via Domitia / France
2017-2018	Postdoctoral research assistant / Universitat de Barcelona / Spain
2013-2017	Postgraduate research fellow (FPU 2012) / Universitat de Barcelona / Spain
2012-2013	Research assistant / Universitat de Barcelona / Spain

A.3. Education

Ph.D. in Essential and Applied Ecology	Universitat de Barcelona / Spain	2017
M.Sc. in Marine Sciences	Universitat de Barcelona / Spain	2011
B.Sc. in Biology	Universidad del País Vasco / Spain	2010

Part B. CV SUMMARY

I am a marine ecologist interested in fundamental and applied questions on the functioning of coastal ecosystems. My research mainly focuses on the behavioural ecology of fishes of interest for professional and recreational fisheries. It aims at understanding the complex relationships between individuals, their environment, and the effect of human impacts at different spatial and temporal scales to improve their conservation through marine protected areas (MPAs) and ensure sustainable use of the oceans.

During my Ph.D. (2013-2017), I started applying novel telemetry and analytical methods to test new aspects on the biology of coastal species within MPAs, emphasizing the diversity of behaviours that species display (Aspillaga *et al.* 2016) and the effect of environmental drivers (Aspillaga *et al.* 2017), key to understanding the effectiveness of MPA to protect fish populations and the climate-driven population trends. During this period, I also got involved in several research and monitoring projects focused on the effects of global change and ecological restoration of benthic ecosystems (Garrabou *et al.* 2022). In 2019, I joined the Fish Ecology Lab at IMEDEA (CSIC-UIB), where I strengthened my research line by delving into the causes and consequences of the behavioural variability within natural fish populations. In collaboration with the Leibniz Institute of Freshwater Ecology and Inland Fisheries (IGB, Berlin, Germany), I applied a high-resolution acoustic telemetry method for the

first time in a marine environment. This method allowed us to monitor the movements of an entire wild fish population (Aspillaga *et al.* 2021a) and characterize the spatial and social structure of the species (Aspillaga *et al.* 2021b). In combination with other behavioural studies (Martorell-Barceló *et al.* 2021), this research has been the basis for the new research line focused on the causes and consequences of animal behaviour developed by the members of the Fish Ecology Lab. During my postdoctoral period, I have had the opportunity to train young researchers by co-directing 6 M.Sc. theses at the Universitat de les Illes Balears (UIB), the Universitat de Barcelona (UB) and Universidad de la Laguna (ULL).

To date, I participated in 22 scientific publications in Q1 international journals (8 of them since 2021). This research has been cited 237 (Scopus) / 370 (Google Scholar) times, 135 (Scopus) / 204 (Google Scholar) since 2021. My research has been presented 36 times in international and national conferences and workshops. Besides, I have authored 17 reports for national and autonomic administrations and four chapters in books and monographs.

I have applied several innovative research techniques during my research career, such as biologging devices (acoustic telemetry) to monitor fish activity, stereo-video techniques to study fish communities, and more recently, deep-learning algorithms for automatic recognition of individuals. To analyse the large datasets that these techniques produce, I have gained extensive expertise in developing and applying complex statistical analysis and modelling techniques (e.g., Aspillaga *et al.* 2019).

My research background has allowed me to participate in 13 competitive research projects, including three large European projects (e.g., ETN, RESMED). In these projects, I led relevant tasks such as study design, organization of fieldwork campaigns (including more than 500 scientific dives), coordination of data collection and analysis tasks, and manuscript and report writing. In 2019, I obtained my first competitive grant from the Government of the Balearic Islands (Margalida Comas program for young researchers, CAIB, 66k €) to develop my 2 yr. postdoctoral project at the IMEDEA. In 2022, I obtained a second grant (Vicenç Mut program for senior researchers, CAIB, 114k €) to develop a 3 yr. postdoctoral project.

Regarding the applied nature of my research, I have closely collaborated with national and local administrations by working on 8 contracts. I have conducted applied research on 10 different MPAs of the Mediterranean Sea (Spain and France), providing direct advice on the conservation status and main threats based on main bio-indicators (e.g., Aspillaga *et al.* 2018a, 2018b). Since 2019, our research team at IMEDEA has regular encounters with the local administration (Direcció General de Pesca, Govern de les Illes Balears). In 2021, I was made a member of the Steering Committee of two MPAs in the Balearic Islands (see reference below).

I am an active part of an international research community working on fish telemetry (e.g., Matley *et al.* 2022) and the European Tracking Network (ETN project, Aspillaga *et al.* 2022; Alós *et al.* 2022). I have achieved a large part of my research in collaboration with international colleagues in projects and publications (e.g., USA, Aspillaga *et al.* 2016, 2017; Germany, Aspillaga *et al.* 2021a; France, Brazo *et al.* 2021). I have performed predoctoral and postdoctoral stays in international centres such as the Max Planck Institute for Ornithology (Radolfzell, Germany) and the University of Perpignan (France).

Part C. RELEVANT MERITS (sorted by typology)

C.1. Publications (most relevant 10 publications from the last 6 years)

- Dhellemmes, F.; **Aspillaga E.**; Rittweg, T.; Alós, P.; Möller, P., Arlinghaus, R. (2023). Body size scaling of space use in coastal pike (*Esox lucius*) in brackish lagoons of the southern Baltic Sea. *Fisheries Research* 269: 106560. doi: [10.1016/j.fishres.2022.106560](https://doi.org/10.1016/j.fishres.2022.106560)
- Matley, J.K.; Klinard, N.V.; Barbosa Martins, A.P.; [...]; **Aspillaga, E.**^(5/18); [...]; Fisk, A.T. (2022). Global trends in aquatic animal tracking with acoustic telemetry. *Trends in Ecology and Evolution* 37(1):79–94. doi: [10.1016/j.tree.2021.09.001](https://doi.org/10.1016/j.tree.2021.09.001)
- Alós, J.; Aarestrup, K.; Abecasis, D.; [...]; **Aspillaga, E.**^(6/14); [...]; Villegas-Ríos, D. (2022). Toward a decade of ocean science for sustainable development through acoustic animal tracking. *Global Change Biology* 28: 5630–5653. doi: [10.1111/gcb.16343](https://doi.org/10.1111/gcb.16343)

- Garrabou, J.; Gómez-Gras, D.; Medrano, A.; [...]; **Aspillaga E.**^(44/69), [...]; Harmelin, J.G. (2022). Marine heatwaves drive recurrent mass mortalities in the Mediterranean Sea. *Global Change Biology* 28: 5708–5725 doi: [10.1111/gcb.16301](https://doi.org/10.1111/gcb.16301)
- Aspillaga, E.**; Arlinghaus, R.; Martorell-Barceló, M.; Barcelo-Serra, M.; Alós, P. (2021b). High-Throughput Tracking of Social Networks in Marine Fish Populations. *Frontiers in Marine Science* 8:688010. doi: [10.3389/fmars.2021.688010](https://doi.org/10.3389/fmars.2021.688010)
- Aspillaga, E.**; Arlinghaus, R.; Martorell-Barceló, M.; Follana-Berná, G.; Lana, A.; Campos-Candela A.; Alós J. (2021a). Performance of a novel system for high-resolution tracking of marine fish societies. *Animal Biotelemetry* 9:1. doi: [10.1186/s40317-020-00224-w](https://doi.org/10.1186/s40317-020-00224-w)
- Brazo, A., Marques, R.; Zimmermann, M.; **Aspillaga, E.**^(4/12), [...]; Lenfant, P^(AC). 2021. Seasonal influence on the bathymetric distribution of an endangered fish within a marine protected area. *Scientific Reports* 11:13342. doi: [10.1038/s41598-021-92633-x](https://doi.org/10.1038/s41598-021-92633-x)
- Aspillaga, E.**; Safi, K.; Hereu, B.; Bartumeus, F. (2019a). Modelling the three-dimensional space use of aquatic animals combining topography and Eulerian telemetry data. *Methods in Ecology and Evolution* 10(9): 1551–1557. doi: [10.1111/2041-210X.13232](https://doi.org/10.1111/2041-210X.13232)
- Aspillaga, E.**^(1/9); Bartumeus, F.; Starr, R.M.; [...]; Hereu, B. (2017). Thermal stratification drives vertical distribution patterns of a coastal apex predator. *Scientific Reports* 7: 526. doi: [10.1038/s41598-017-00576-z](https://doi.org/10.1038/s41598-017-00576-z)
- Aspillaga, E.**; Bartumeus, F.; Linares, C.; Starr, R.M.; López-Sanz, À.; Díaz, D.; Zabala, M.; Hereu, B. (2016). Ordinary and Extraordinary Movement Behaviour of Small Resident Fish within a Mediterranean Marine Protected Area. *PLoS ONE* 11(7): e0159813. doi: [10.1371/journal.pone.0159813](https://doi.org/10.1371/journal.pone.0159813)

C.2. Congresses (most relevant 5 communications from the last 3 years)

- Aspillaga, E.**^(1/11); Bruneel, S.; Alós, J.; [...]; Reubens, J. (2022). Open Protocol compatibility and range tests in European waters. *COST ETN Annual Meeting*, Organizer: April 2022, Londonderry (UK). Oral communication.
- Aspillaga, E.**; Arlinghaus, R.; Martorell-Barceló, M.; Barcelo-Serra, M.; Alós, P. (2021d) Applying the reality mining approach to unveil the social structure and space use variability of a marine fish population. *7th International Bio-Logging Symposium*. Organizer: University of Hawai'i. October 2021, Honolulu (USA) + online. Oral communication.
- Aspillaga, E.**; Martorell-Barceló, M.; Arlinghaus, R.; Barceló-Serra, M.; Alós J. (2021c) Estimating the behavioural diversity of a natural fish population by linking behavioural traits and space-use patterns. *SEB 2021 Annual Conference*. Organizer: Society for Experimental Biology (UK). June 2021, online. Oral communication.
- Aspillaga, E.**; Lenfant, P.; Hereu, B. (2019c) Connectivity between transboundary MPAs: the case of two fish species, the grouper, and the white seabream. *Managing highly mobile species across Mediterranean Marine Protected Areas*. Organizer: MedPan (France). November 2019, Akyaka (Turkey). Oral communication.
- Aspillaga, E.**; Arlinghaus, R.; Follana-Berná, G.; Campos-Candela, A.; Cabanellas, S.; Alós, J. (2019b) Opportunities of high-resolution movement monitoring systems in coastal marine environments. *5th International Conference on Fish Telemetry*. Organizer: Norwegian Institut of Marine Research (Norway). June 2019, Arendal (Norway). Oral communication.

C.3. Research projects (most relevant 6 participations from the last 5 years)

- New technologies for the implementation of a sustainable management of the marine resources of the Balearic Islands.* (ref. PD/041/2021). Funding entity: Govern de les Illes Balears – Fondo Social Europeo. Program: Programa Vicenç Mut Estabilitat 2021. PI: Eneko Aspillaga (Institut Mediterrani d'Estudis Avançats, IMEDEA, CSIC-UIB). Start/end: 2022-2025. Total amount: 114.000 €. Type of participation: Postdoctoral research grant.
- CLOCKS – Causes and consequences of circadian behavioural variation in marine wild fish.* (ref. PID2019-104940GA-I00). Funding entity: Ministerio de Ciencia e Innovación. Program: Proyectos de I+D+i en el marco del Subprograma Estatal de Generación de Conocimiento. Start/End: 2020/2023. Total amount: 215.000 €. Type of participation: Team member.

JSATS – Determination of environmental and genetic effects on marine fish movement with conservation implications. (ref. 202030E002). Funding entity: Consejo Superior de Investigaciones Científicas. Program: Proyectos intramurales especiales. PI: Josep Alós (Institut Mediterrani d'Estudis Avançats, IMEDEA, CSIC-UIB). Start/End: 2020/2023. Total amount: 150.000 €. Type of participation: Team member.

Ecology of movement applied to recreational fishing: emerging patterns at the collective level and their implications for the management of marine resources in the Balearic Islands. (ref. PD/023/2018). Funding entity: Govern de les Illes Balears – Fondo Social Europeo. Program: Programa Margalida Comas per a joves investigadors 2018. PI: Eneko Aspillaga (Institut Mediterrani d'Estudis Avançats, IMEDEA, CSIC-UIB). Start/end: 2019-2021. Total amount: 66.000 €. Type of participation: Postdoctoral research grant.

RESMED – Marine reserve networks and integrated management of Mediterranean cross-border coastal areas (ref. EFA332/19). Funding entity: European Commission. Program: Interreg-POCTEFA. PI: Bernat Hereu (Universitat de Barcelona). Start/end: 2019-2022. Total amount: 1.103.511 €. Type of participation: Team member.

ETN – The European Aquatic Animal Tracking Network (ref. CA18102). Funding entity: The European Cooperation in Science and Technology, European Commission. Program: COST Actions. PI: Jan Reubens (Flanders Marine Institute, Belgium). Start/end: 2019-2022. Total amount: 175.000 €. Type of participation: Team member.

C.4. Technology/Knowledge transfer (5 relevant participations in the last 6 years)

Participation in contracts with public administrations:

Seguiment de la biodiversitat marina als espais marins protegits del Parc Natural del Cap de Creus i del Parc Natural del Montgrí, les Illes Medes i el Baix Ter. Funding entity: Departament de Territori i Sostenibilitat, Generalitat de Catalunya. PI: Bernat Hereu (Universitat de Barcelona). Start/end: 2014-2020 (3 contracts). Type of participation: Team member.

Technical reports for local administration:

Aspillaga, E.; Zabala, M., Capdevila, P.; Rovira, G.; García-Rubies, A.; Hereu, B. (2018b). Seguiment de les poblacions de peixos vulnerables a la activitat pesquera. *Seguiment del medi marí al Parc Natural de Cap de Creus y al Parc Natural del Montgrí, les Illes Medes i el Baix Ter.* Departament de Territori i Sostenibilitat, Generalitat de Catalunya. pp. 15–86 (Technical report, in Catalan). uri: <http://hdl.handle.net/2445/131277>

Aspillaga, E.; Rovira, G., Capdevila, P., Margarit, N., Hereu, B. (2018a). Seguiment de les comunitats de coves submarines de la Reserva Marina de les Illes Medes com a indicadors de l'efecte de la freqüentació de submarinistes sobre les comunitats bentòniques. *Seguiment anual de briozous, gorgònia vermella i coves submarines a la Reserva Natural Parcial Marina de les Medes del Parc Natural del Montgrí, les Illes Medes i el Baix Ter.* Departament de Territori i Sostenibilitat, Generalitat de Catalunya. pp. 51–62 (Technical report, in Catalan). uri: <http://hdl.handle.net/2445/131254>

Participation in steering committees:

Member of the Advisory Board for the “Co-management plan for the professional artisanal fishing in the inland waters of the Pitiusas Islands (Ibiza and Formentera, Spain)”, as representative of the Spanish National Research Council.

Member of the Advisory Board of the marine reserves of "Costa nord-est d'Eivissa-Tagomago", "Freus d'Eivissa i Formentera", and "Punta de sa Creu" (Ibiza and Formentera, Spain), as representative of scientific institutions. Start/end: 2021-present.

Participation in scientific transfer workshops and courses organized by industry:

Aspillaga, E. (2021e). High-frequency Tracking in Marine Environments using 416 kHz JSATS & UMAP. *Lotek Telemetry Talks 2021.* Oral communication at an online webinar series hosted by Lotek Wireless Inc. (Canada).