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***Scientific interests:** I am interested on animal behaviour and movement ecology and its interplay with life history theory. I am interested in understanding what the ecological drivers of animal behavioural decisions are within an eco-evolutionary perspective and their outcomes in life history, which is essential for acknowledge the functioning of populations, and additionally in exploring how different anthropogenic stressors may affect the dynamics of wild animal populations and their evolving traits. My current work focuses on the ecology of fish within the context of fisheries induced evolution, and mainly addressed from the theoretical side. To meet theory with empirical data is one of my goals for future works.*

***Keywords:** Behavioural syndrome, Bioenergetics, Fish ecology, Fisheries Induced Evolution, Home Range behaviour, Life history traits, Movement Ecology, Pace of Life Syndrome.*

### **Academic degrees and evaluations:**

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01/09/2014-08/01/2019. **PhD in Marine Sciences and Applied Biology.** University of Alicante (Department of Marine Sciences and Applied Biology). PhD supervisors: Dr Miquel Palmer, IMEDEA-CSIC and Dr Josep Alós, IMEDEA-CSIC. Graduated with honours *Cum Laude*.

01/09/2012-15/10/2013. **M.Sc. in Analysis and Management of Mediterranean Ecosystems.** University of Alicante (Spain). Graduated with honours and Academic Excellence Award. Highest academic ranking among graduating class.

01/09/2005-01/09/2010. **B.Sc. in Biology.** University of Valencia, Spain. Graduated with honours and Academic Excellence Award.

01/09/2004-13/07/2010. **B.Sc. in Special Education Teacher (primary school).** University of Valencia, Spain. Graduated with honours and Academic Excellence Award.

### **Positions held after receiving PhD:**

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01/11/2020- ongoing. *Post-Doc Alexander von Humboldt Fellowship;* Department of Biology and Ecology of Fishes, **Leibniz-Institute of Freshwater Ecology and Inland Fisheries**, IGB, Berlin, Germany. 2 years.

01/04/2019-31/03/2020. *Post-Doc International IGB Fellowship program;* Department of Biology and Ecology of Fishes, **Leibniz-Institute of Freshwater Ecology and Inland Fisheries**, IGB, Berlin, Germany.

01/10/2018-30/03/2019. *Researcher Contract in PHENOFISH project:* "The fishing syndrome: Multi-scale changes induced by fish responses to fishing" (<http://www.fishecology.es/products/phenofish/>), at the Fish Ecology Lab, Department of Marine Ecology, Mediterranean Institute for Advanced Studies (IMEDEA-CSIC), Balearic Islands, Spain. 6 months.

### **International mobility:**

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03.08.2017-28.09.2017. **Theoretical Ecology Group at the University of Bergen**, Norway. Project: Applying Dynamic Optimization Modelling to understand how fishing and other anthropogenic stressors may affect trait evolution and population dynamics of wild fish stocks. **Visiting grant by the exchange project FILAMO.** Supervisor: Prof. Christian Jørgensen. 2 months.

01.10.2016-31.12.2016. **Leibniz-Institute of Freshwater Ecology and Inland Fisheries**, IGB, Berlin, Germany. Project: Accounting for vulnerability to fishing when modelling fish functioning. Supervisor: Prof. Robert Arlinghaus. 3 months.

### **Scholarships, research funding acquired to date:**

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01.11.2020-31.10.2022. **Post-Doc Fellowship.** Alexander von Humboldt Foundation (ref: ESP 1212723 HFST-P). Project: Fisheries-induced evolution of spatial behaviour and life history, with implications for management. 2 years. 62 400 €

- 01.04.2019-31.03.2020. **Post-doc Fellowship**. International IGB-Fellowship programme of the Leibniz-Institute of Freshwater Ecology and Inland Fisheries. Berlin. Germany, 12 months. 21 936 €
- 01/09/2014-31/08/2018. **FPU pre-doctoral fellowship** (ref.FPU13/01440) from the Spanish Ministry of Education, Culture and Sports (MECD). 4 years. 52 752 €
- 29/04/2018-04/05/2018. **Fee-waiver grant** and a travel grant to participate in the postgraduate course 'Modelling population dynamics with Physiologically Structured Population models (PSPM)'. Ede, the Netherlands.
- 03/08/2017-28/09/2017. **FILAMO funding** at the University of Bergen. 2 months. 12 825 NOK
- 2009-2010. **Scholarship** from the Spanish Ministry of Education (EDU/2235/2009). Ecology of Charophytes in coastal lagoons. ICBiBE, University of Valencia, Spain. Supervisor: Dra. M.A. Rodrigo.
- 07/2009-08/2009. **Training Scholarship JAE** (*Junta para la Ampliación de Estudios*) for the Introduction to the Research for University students from the Spanish National Research Council (CSIC). Institute of Natural Resources of the CSIC, Madrid, Spain. 2 months. 2000 €

### Collaboration in projects:

- 01/10/2018-30/03/2019 & 1/10/2015-08/01/2019. Researcher & PhD student in **PHENOFISH project**: "The fishing syndrome: Multi-scale changes induced by fish responses to fishing". Code according to the funding entity: CTM2015-69126-C2-1-R. Performed tasks: Implementation of bioenergetics models based on Dynamic Energy Budget theory.
- 07-08/2016. On-board by-catch sampling on local fishing vessels. **MINOUW project** - Science, Technology, and Society Initiative to minimize Unwanted Catches in European Fisheries-. Funded under: H2020-EU.3.2. Grant agreement ID: 634495. Coordinated by the Spanish Scientific Research Council.

### Peer-reviewed scientific publications: [n= total citations, IF= Journal's Impact Factor]

[n=87, h-index=6, i10-index=3; from *Google Scholar*, last update 09/09/2020]

1. **Campos-Candela, A.**, Palmer, M., Balle, S. & Alós, J. (2019). Response to Abolaffio *et al.* (2019): Avoiding misleading messages. *J. Anim. Ecol.*, doi:10.1111/1365-2656.13084 (n=1, IF<sub>2019</sub>=4.55).
2. Follana-Berná, G., Palmer, M., **Campos-Candela, A.**, Arechavala-Lopez, P., Diaz-Gil, C., Alós, J., *et al.* (2019). Estimating the density of resident coastal fish using underwater cameras: accounting for individual detectability. *Mar. Ecol. Prog. Ser.* 615, 177–188 (n=3, IF<sub>2020</sub>=2.326, IF<sub>5years</sub>=2.665).
3. Alos, J., **Campos-Candela, A.** & Arlinghaus, R. (2018). A modelling approach to evaluate the impact of fish spatial behavioural types on fisheries stock assessment. *ICES J.Mar.Sci.* 1-33 (n=6, IF<sub>2020</sub>=3.188, IF<sub>5years</sub>=3.505).
4. **Campos-Candela, A.**, Palmer, M., Balle, S., Álvarez, A. & Alós, J. (2019). A mechanistic theory of personality-dependent movement behaviour based on dynamic energy budgets. *Ecol.Lett.* 22, 213–232 (n=14, IF<sub>2019</sub>=8.665).
5. Catanese, G., Hinz, H., Gil, M. del M., Palmer, M., Breen, M., Mira, A., Pastor, E., Grau, A., **Campos-Candela, A.**, Koleva, E., Grau, A.M. & Morales-Nin, B. (2018). Comparing the catch composition, profitability and discard survival from different trammel net designs targeting common spiny lobster (*Palinurus elephas*) in a Mediterranean fishery. *PeerJ*, 6, e4707 (n=8, IF<sub>2019</sub>= 2.38).
6. Marti-Puig, P., Serra-Serra, M., **Campos-Candela, A.**, Reig-Bolano, R., Manjabacas, A. & Palmer, M. (2018). Quantitatively scoring behavior from video-recorded, long-lasting fish trajectories. *Environ. Model. Softw.*, 106, 68–76. (n=8, IF<sub>2019</sub>=4.807)
7. Martorell-Barceló, M., **Campos-Candela, A.** & Alós, J. (2018). Fitness consequences of fish circadian behavioural variation in exploited marine environments. *PeerJ*, 6, e4814 (n=5, IF<sub>2019</sub>= 2.38).
8. **Campos-Candela, A.**, Palmer, M., Balle, S. & Alós, J. (2018). A camera-based method for estimating absolute density in animals displaying home range behaviour. *J. Anim. Ecol.*, 87, 825–837 (n=24, IF<sub>2019</sub>=4.55).
9. Alós, J., Martorell-Barceló, M. & **Campos-Candela, A.** (2017). Repeatability of circadian behavioural variation revealed in free-ranging marine fish. *R. Soc. Open Sci.*, 4, 160791 (n=18, IF<sub>2018</sub>= 2.515, IF<sub>5years</sub>= 2.693).

### Reviewer for journals:

Verified reviews: 8 (Median: 3; 67th percentile) (from *Publons*, last update 10.01.2020).

- Journals: *Aquaculture and Fisheries* (1); *Journal of Applied Ecology* (1); *Scientia Marina* (1); *Hydrobiologia* (1); *Journal of Sea Research* (1); *Ecology and Evolution* (2); *Fish and Fisheries* (1).

## Communication:

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### Contributions to international congresses, conferences or seminars

1. **Campos-Candela, A.** and Alós, J. Optimal early-life strategies under different food scenarios and predation-risk. Oral Communication by Alós. *Larval Fish Conference, May 21-24, 2019. Palma de Mallorca, Spain.*
2. Follana-Berná, G.; Palmer, M.; Arechavala-Lopez, P.; **Campos-Candela, A.**; Grau, A.; Alós, J.; Catalán, I.A. The effect of behaviourally mediated fish vulnerability on early-life production and dispersal. Oral Communication by Follana-Berná. *Larval Fish Conference, May 21-24, 2019. Palma de Mallorca, Spain.*
3. **Campos-Candela, A.**, Palmer, M., Balle, S., Álvarez, A. & Alós, J. An individual behavioural bioenergetics theory connecting within and between individual variability in movement behaviour and life history. Poster. *Gordon Research Seminar on Movement Ecology of Animals (GRS), March 2-3, 2019, Lucca (Barga), Italy.*
4. **Campos-Candela, A.**, Palmer, M., and Alós, J. An individual behavioural-bioenergetic framework connecting within and between individual variability in movement behaviour and life history. Oral Communication by Campos-Candela. *Ist Meeting of the Iberian Ecological Society & XIV AEET. February, 4-7, 2019, Barcelona, Spain.*
5. **Campos-Candela, A.** A mechanistic framework linking behaviour with dynamic energy budgets to test personality-dependent movement behaviour. Oral Communication by Campos-Candela. *XXXIV Trobades Científiques de la Mediterrània Josep Miquel Vidal "Física i ecològica: reptev de frontera", October 9-11, 2018, Menorca, Spain.*
6. **Campos-Candela, A.**, Palmer, M. and Alós, J. A unifying theory to test the generality and adaptive value of Pace-of-Life-Syndromes based on dynamic energy budgets. Oral Communication by Campos-Candela. *SEB Florence 2018 - The Society for Experimental Biology. July 3-6, 2018, Italy.*
7. Arechavala-Lopez, P., Blasco-Ferrer, M., Follana-Berná, G., **Campos-Candela, A.**, Diaz-Gil, C., Grau, A., Pastor, E. and Palmer, M. Are behavioural traits, oxygen consumption and body morphology linked at fish individual-level? Poster. *SEB Florence 2018 - The Society for Experimental Biology. July 3-6, 2018, Italy.*
8. Serrat, A., **Campos-Candela, A.**, Marcogliese, D., Alós, J., Lloret, J. and Muñoz, M. 2018. Applying a dynamic energy Budget model to understand nematode parasite influence on the trade-offs between reproduction and energetic condition on fish. Oral Communication by Serrat. *International symposium on "The Effects of Climate Change on the World's Oceans", June, 2-8, 2018, Washington DC, USA.*
9. **Campos-Candela, A.**; Palmer, M.; Balle, S.; Álvarez, A. and Alós, J. Energy dynamics may be mechanistically linking movement behaviour and life history traits. Poster. *5<sup>th</sup> International Symposium on DEB theory. May 31- Jun 02, 2017 Tromsø, Norway.*
10. **Campos-Candela, A.**; Palmer, M.; Follana-Berná, G. and Alós, J. Emerging life histories from links between behaviour and energy budgets in selective recreational fisheries. Poster. *8<sup>th</sup> World Recreational Fishing Conference. July 16-20, 2017, Victoria, Canada.*
11. Alos, J., **Campos-Candela, A.** Spatial behavioral types, composite random walks and sustainable fisheries. Oral Communication by Alós. *ICES Annual Science Conference. September 18–21, 2017, Florida.*
12. **Campos-Candela, A.**; Alós, J., Follana-Berná, G., Palmer, M. Emerging life-histories from mechanistic links between spatial behaviour and dynamic energy budgets in selective fisheries. Poster. *ICES Annual Science Conference. September 18–21, 2017, Florida.*
13. Follana-Berná, G., **Campos-Candela, A.**, Díaz-Gil, C., Arechavala-López, P., Alós, J., Catalán, J.A., Grau, A., Palmer, M., Balle, S. Combining unbaited and baited underwater video cameras for estimating absolute abundance and size distribution for coastal marine fish. Poster. *ICES Annual Science Conference. September 18–21, 2017, Florida.*
14. **Campos-Candela, A.** A camera-based method for estimating absolute density in home range-behaving animals. Oral communication by Campos-Candela. *Video-Techniques Workshop. May 19, 2017, Barcelona, Spain.*
15. Rodrigo, M.A., Alonso-Guillén, J.L. and **Campos, A.** Can polluted sediments from a coastal lagoon house Charophyte growth? Poster. *16<sup>th</sup> Meeting of the Group of European Charophytologists (GEC). Sep 12-16, 2009, Ohrid, Republic of Macedonia.*

### Invited speaker at Universities

16/01/2020. **Invited speaker.** “Linking individual behaviour & life history: exploring opportunities from a behavioural bioenergetics framework”. Seminar within the Framework for postgraduate education, *Research Training Groups BioMove*; Department Plant Ecology and Nature Conservation, University of Postdam, Campus Golm, Postdam, Germany.

06/07/2019. **Invited speaker.** “Extending a camera-based method for estimating absolute densities to camera trapping data”. *Conservation Biogeography Lab*, Department of Geography, Humboldt-University, Berlin, Germany.

16/04/2018. **Invited speaker.** “Bridging the gap between individual behavioural variation and life histories using mass/energy fluxes”. *Science Chat Bremen*; University of Bremen, Bremen, Germany.

#### Other communication to peers

01/07/2019. “Linking individual behaviour & life history: exploring opportunities from a behavioural-bioenergetics framework”. **Talk** at *CoCCoN Workshop*. Humboldt Universität zu Berlin, Berlin, Germany.

09/05/2019. “Linking individual movement behaviour and life history: exploring opportunities from a behavioural-bioenergetics framework”. **Colloquium of young IGB researchers**. Leibniz-Institute of Freshwater Ecology and Inland Fisheries, IGB, Berlin, Germany.

#### **Selected training activities:**

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##### Workshops and international courses

01-02/07/2019. **Princeton-Humboldt Cooperation and Collective Cognition Network (CoCCoN) Workshop**. Humboldt Universität zu Berlin, Berlin, Germany.

04/02/2019. **Workshop on “Career development”**. Organizers: 1st Meeting of the Iberian Ecological Society & XIV AEET Meeting, in the University of Barcelona (UB), Barcelona, Spain.

29/04/2018-04/05/2018. **Postgraduate Course in modelling population dynamics with PSPMs**. 2 ECTs. Organizers: Graduate School for Production Ecology & Resource Conservation (PE&RC) and the Institute for Biodiversity and Ecosystem Dynamics (IBED).

20-23/08/2017. **Third International Workshop on Trait-based Approaches to Ocean Life**. University of Bergen. Solstrand, Os, Norway.

18-19/08/2017. **Workshop on “Obstacles in communication between field-, lab- and modelling work”**. FILAMO, University of Bergen. Radisson Blu Royal Hotel, Bergen, Norway.

21-30/05/2017. **Workshop DEB2017**. (II): Training practical part. Tromsø, Norway.

02/03/2017-06/04/2017. **Workshop DEB2017**. (I): International tele-course on Dynamic Energy Budget theory. Hosted on course-sites.

19/05/2017. **Video-Techniques Workshop**. Organizers: University of Barcelona. Barcelona, Spain.

18-22/04/2016. **Workshop on “Growth-Increment chronologies in marine fish: Climate-ecosystem interactions in the North Atlantic”**. Organizers: ICES; Bryan Black (Texas University); Christoph Stransky (Thünen Institut); Beatriz Morales-Nin (IMEDEA). IMEDEA-CSIC, Esporles, Balearic Islands, Spain.

09/04/2015. **Workshop on Seagrass monitoring programmes** in the context of the Marine Strategy Framework Directive. CIMAR and University of Alicante, Alicante, Spain.

##### Training seminars

16/11/2015-14/12/2015. **Analysing Ecological data using R**. IMEDEA-CSIC, Esporles, Balearic Islands, Spain. Lecturer: Dr Hilmar Hinz.

31/05/2013. **Bases of sustainability in aquaculture**: present and future in the formulation of feed. CIMAR, University of Alicante and Association of fish farmers “Bahia de Guardamar”, Alicante, Spain.

1-3/10/2008. **Seminar on Salinity and Water Availability in the Climate Change scenario**. International University Menéndez Pelayo, Valencia, Spain. Director of the seminar: Prof Jorge Batlle Sales.

##### Sea training and Certifications

- **Certificate for the operation of pleasure craft** (RD 875/2014) and **Short-Range Radio Operator**
- Certificate of Familiarization and **Basic Safety Training** (STCW/1978 as amended).
- **Fisher Professional Card** (Spanish Regulation: RD36/2014, 24<sup>th</sup> January; European Regulation: STCW/1995).
- **Scuba Diving Certification - Dive Master** (SDI-TDI; FEDAS).

## **Outreach and social engagement:**

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I have participated in several activities and talks in secondary and primary schools to disseminate science and encourage students to pursue the scientific career. I am one of the founders of the [Platform #11F](#) aimed to be active against gender bias in science, and been interviewed several times on national and local radio, local newspapers and TV to talk about both my scientific activity and social activism.

### Guest posting

26/01/2018. **Guest-post in JAE blog.** Campos-Candela, A. “[Estimating Species Populations – a critical step in understanding ecological processes](#)”. *Animal Ecology in focus*.

09/06/2016. **Guest-post in “ciencia-para-llevar-CSIC” blog.** Campos-Candela, A. “[Peces cada vez más ‘pezqueñines’: los efectos de la pesca](#)”.

### Seminar/Talk

13/04/2018. **Invited speaker** in “15 Reunión Plenaria para Políticas de Igualdad entre Hombres y Mujeres” (15th Plenary meeting for politics in equality among men and women). About the situation of the women in the science. **Introducing the #11F Platform in the Balearic Islands.** Palma de Mallorca, Spain.

19/12/2017. [Workshop in scientific communication](#) by Ana Payo-Payo and **Andrea Campos-Candela.** IMEDEA, Esporles, Balearic Islands.

### Scientific storytelling to general audience

19-23/09/2018. **Monologue women in science.** V Edición del Festival Mar de Mares, A Coruña, Spain.

09/02/2018. **Monologue women in science:** “[De ciencia, estereotipos y cifras](#)”. International Day of Women and Girls in Science. Caixa Forum. Palma de Mallorca, Balearic Island, Spain.

15/10/2016. “[Selección artificial, parece un cuento pero no lo es](#)”. Fundación AQUAE. Spain.

### Awards in outreaching, on stage

29/09/2017. **Winner in the Hall of FameLab\***. “[Shyness under the sea](#)”. **European Researchers’ Night. Science Uncovered. Oceans Night.** Horizon2020. Natural History Museum, London.

13/05/2016. **Finalist of FameLab\* Spain.** “[¿Qué pasa en el mar cuando pescamos?](#)” Scientific monologue.

06/04/2016. **Semi-finalist of FameLab\* Spain.** “[Peces tímidos y atrevidos](#)”. Scientific monologue.

[\*FameLab is a global competition to find and support talented new science communicators. The British Council runs yearly national FameLab competitions in around 30 countries].

### Media coverage

My research has received attention from different media including Radio and Press:

#### • **Radio interviews:**

10/12/2018. rtve5: “[Españoles en la mar: La personalidad de los peces](#)” (*Spaniards at sea: Fish personality*).

18/12/2017. rtve5: “[Españoles en la mar: Peces y matemáticas](#)” (*Spaniards at sea: Fish and mathematics*).

#### • **Press:**

28/11/2018. Animals’ Health. “[La personalidad de los animales condiciona su modo de vida](#)” (*The personality of animals determines their way of life*).

27/11/2018. EUROPA-PRESS. “[La personalidad determina el estilo de vida de los animales](#)” (*Personality determines animals’ ways of life*).

27/11/2018. Ara Balears. “[Els peixos també tenen personalitat, i els marca l’estil de vida](#)” (*Animals also have personality, and it affects ways of life*).

27/11/2018. La Vanguardia. “[La personalidad determina el estilo de vida de los animales gracias a su energía interna](#)” (*Personality determines animals’ ways of life, linked with internal energy*).

27/11/2018. El diari de la UIB. “[La personalidad determina el estilo de vida de los animales](#)” (*Personality determines animals’ ways of life*).

19/12/2017. Noticias Mallorca: “[Un grupo de investigadores de IMEDEA desarrolla un modelo matemático para estimar el número de animales en un ecosistema](#)” (*A group of researchers at IMEDEA develops a mathematical model to estimate the number of animals in an ecosystem*).

19/12/2017. B@leópolis - El Mundo Balears. “[La fórmula que resolverá uno de los enigmas de la ecología](#)” (*The formula that will solve one of the enigmas of ecology*).

18/12/2017. ABC. “[IMEDEA desarrolla un modelo matemático para estimar la abundancia de animales](#)”.