

SKILLS**Education**

- Docent (equivalent to Adjunct Professor or "habilitation à diriger des recherches") in Wildlife Research and Management

Scientific research

- Multidisciplinary projects: ecology, geography, ecotoxicology
- Design and management of study
- Project and team management
- Data analysis and interpretation of results
- Writing scientific articles

Teaching and supervising

- Design of teaching program, funding, organizing, and coordinating
- Teaching and assessment of teaching
- BSc., MSc., PhD and Post-doctoral levels

Funding

- Identification of relevant calls
- Writing application
- Success in funding research projects: 1.6M€

Outreach

- Collaborations with end users: birdwatchers, hunters, wetland and forest managers,
- Local, national and international collaborations
- large international network of collaborators: North America, Europe, North Africa,...
- Scientific, Public and decision maker outreach: via publications, conferences, seminars, meetings, art exhibition

Gender: Female

ORCID number: 0000-0002-1866-2067; **Research ID:** B-7937-2018

Website: <https://sites.utu.fi/arzelgroup/>

DATE AND PLACE OF BIRTH, NATIONALITY, CURRENT RESIDENCE

Date and place of birth: 25/12/1979, Brest, France;

Nationality: French;

☎: Vesilinnantie 5, 20014 University of Turku, Finland; ☎: +358 408778636;

✉: celine.arzel@utu.fi

EDUCATION AND DEGREES AWARDED

03/2018: **DOCENT in the field of Wildlife Research and Management**, University of Helsinki, Finland (equivalent to a French "Habilitation à Diriger des Recherches") _ Diploma required to supervise PhD students.

2002-2006: **PhD in Ecology and evolution of populations and communities**, Toulouse University, France; French National Hunting and Wildlife Agency (ONCFS), France; Kristianstad University, Sweden; European label.

2001-2002: **Master 2nd year** in Freshwater Ecology, Toulouse University;

2000-2001: **Master 1st year** in Populations and ecosystems biology, Rennes1 University, France

2nd semester in Environmental Education at Kristianstad University, Sweden

OTHER EDUCATION AND TRAINING, QUALIFICATIONS AND SKILLS

2020: Laboratory animal science course for persons carrying out procedures on animals (Functions B, A & D), university of Turku

04-05/04/2019: **Management and coordination of E.C. funded projects**; the PM² methodology, Lisbon. European Academy

07 - 11 /10/ 2019: NOVA PhD course "**Reproductive health in a changing world – Effects of environmental contamination & climate change A One Health approach**", Helsinki, Finland

2002- :Bird ringing permits: French, Swedish and Finnish.

2006, 2021: First aid certificate

LINGUISTIC SKILLS

French: mother tongue

English: proficient user C1, work and home

Finnish: basic user B1

German: basic user A1

Swedish: basic user A1 – 6 months training, 2 years spent in total in Sweden

CURRENT POSITION AND PROJECTS

2020 –2025: **Academy Research Fellow** – PI of DISRUPT: Ducks as models for assessing endocrine DISRUPTing chemicals in the aquatic environment_ Academy of Finland

2023-2027: **Coordinator** of the subcontracting partner (University of Turku) for the H2020 KAPPA flu project Understanding the connectivity and dynamics of Avian Influenza in wild birds, poultry and the environment.

2023: **co-PI** of temporal wetlands as a habitat for ducks_ ministry of agriculture and Forestry, Finland.

2022-2025: **PI** of POOL project – The role of seasonal wetlands as biodiversity hotspots and nature-based solution to water quality decline in the Finnish boreal forest ecosystems: a multi actor and transdisciplinary approach_ Kone Foundation

2019- ongoing: **co-PI** of MISMATCH: *Eurasian Wigeon (Mareca Penelope) migration and habitat use: an assessment of exposition risk to pollutants*; Collaboration with Linnaeus University, Sweden, the university of Angers, France and Terranis, France.

2018- ongoing: **PI** of WATBRO_ Water browning and land use in a forest landscape_ Finnish Cultural Foundation

2020- ongoing: **participant** to RADIANCE – a study on the adaptation of amphibians to brownification_ Lammi biological Station, LETG/University of Angers

2022-2025: **participant** to ZHOST – For a better knowledge and management of the Wetlands of the Oases of the Senegal River Valley and Tunisia funded by the International Research Network (IRN)/CNRS, France

PRIOR PROFESSIONAL EXPERIENCE

03/2020 – 03/2021: **Post-doctoral Researcher - Water browning and land use in a forest landscape**, Department of Forest Sciences, University of Helsinki & section of Ecology at Turku University, Finland. Collaboration with: Lammi Biological Station, HAMK, the Vanajavesi Centre and the University of Angers, France.

07/2020: **Scientific Director** of the French National Hunting Association, France.

09/2018 – 12/2019: **Post-doctoral Researcher - Effect of water browning on lake ecosystems in agricultural and forest landscapes**, Department of Forest Sciences, University of Helsinki & section of Ecology at Turku University, Finland. Collaboration with: Lammi Biological Station, HAMK, the Vanajavesi Centre and the University of Angers, France.

01/08/2015 – 30/11/2015: **Post-doctoral Researcher - Forty years of bird survey in the Archipelago Sea: safeguarding and sharing an exceptional database**; Section of Ecology, University of Turku, Finland

01/08-31/12/2014: **Post-doctoral Researcher - Applicability of Birdwatchers' Long-term Monitoring Data**; Section of Ecology, University of Turku, Finland (50%)

01/09-30/09/2012 & 19/04-11/05/2011: **Post-doctoral Researcher - Regional sustainability – ecosystem services and environmental technology**; Section of Ecology, University of Turku, Finland

01/01/2010 – 31/12/2011: **Post-doctoral Researcher - Wetland suitability to migratory waterfowl in a changing world**; Section of Ecology, University of Turku, Finland

01/08-01/12/2009: **Post-doctoral Researcher - Parameterization of an optimal migration model to assess the role of predation in bird migration**; Netherlands Institute of Ecology, NIOO, Netherlands (50%)

15/08-11/09/2009: **Post-doctoral Researcher - Innate responses of mallard ducklings towards aerial, aquatic and terrestrial predators**; University of Kristianstad, Sweden

01/06/2008-31/07/2009: **Researcher - Habitat requirements of migratory birds on spring stopovers and breeding ground: integrating behavioural studies and remote sensing surveys to test habitat limitation hypotheses and inform waterfowl management**; Self-employed, Section of Ecology, Turku University.

05/2008, 16/03-15/04/2009 & 01/12-31/12/2009 & 01/07-31/07/2014: **Post-doctoral Researcher - Ecology of Anatidae few days prior to their arrival on their breeding ground: habitat use and individual behaviours on their last staging place Andøya**; University of Kristianstad, Sweden

01/09/2006-31/08/2007 & 02/01/2008-30/04/2008: **Post-doctoral Researcher - Impact of biotic and abiotic factors on population demographic parameters of small game populations**; French National Hunting and Wildlife Agency.

01/02-31/08/2006: **Assistant lecturer in biology: Structure and function of animals**; Toulouse University, France

01/11/2002 – 10/03/2006: **PhD student – Ecology of Teal (*Anas crecca*) and other dabbling ducks: connection between their wintering, spring staging and breeding grounds**; Toulouse University, France.

CAREER BREAKS

Maternity, followed by parental, leave from 01/10/2012 to 31/07/2014 (22 months), from 01/02/2015 to 31/07/2015 (6 months), from 01/12/2015 to 01/09/2018 (34 months) for a total of 62 months

GRANTS – 1.7M EUROS IN TOTAL OBTAINED FOR POST-DOCTORAL RESEARCH

FOR TEACHING:

2019: **Joint Master and PhD course on Wetland Ecology and Management**, 13000 €, NOVA board, Coordinator, co-organizer.

FOR RESEARCH, INCLUDING PERSONAL GRANT AND RESEARCH COSTS

2023-2025: Kausikosteikot sorsien elinympäristönä/temporal wetlands as a habitat for ducks, Finnish Ministry of Agriculture and Forestry, 11969€, **co-PI**

2021-2025: PROJECT POOL, KONE FOUNDATION, 211600€, **Principal Investigator**,

2021: EDUFI GRANT TO SUPPORT THE PHD WORK OF A PHD STUDENT 13500€

2020-2025: DISRUPT - Ducks as models for assessing endocrine DISRUPTing chemicals in the aquatic environment; ACADEMY OF FINLAND: 1 153 141 €, **Principal Investigator**,

2020: project RADIANCE, University of Angers/ LETG, France: 5000€,

2020: project EIDEAR, Turku university Foundation, 17000€, **Principal Investigator**

2020: project WATBRO, Finnish Cultural Foundation, General Fund, 25000 €, **Principal Investigator**

2019: OSUNA, France, Collaboration with Dr. A. Davranche, LETG, University of Angers, France, 4800 €,

2019: project MISMATCH, PESP-ECOMOB, CNRS France, Collaboration with Dr. A. Davranche, 15000 €,

2018: project WATBRO, Finnish Cultural Foundation, Häme Regional Fund, 28000 €, **Principal Investigator**

2014: to safeguard Dr. Lennart Saari bird surveys; Finnish Cultural Foundation, Varsinais-Suomi Regional Fund, 11000 €, **Principal Investigator**

2009-2010: Habitat use by waterbirds, Kone Foundation, 50400 €, **Principal Investigator**

2009-2010: Travels and field work support, French Embassy in Finland, 2000 €, **Principal Investigator**

2009-2010: Satellite image acquisitions, ISIS program (Incentive for the Scientific use of Images from the Spot system) of the CNES, Collaboration with Dr. A. Davranche, 27000 €

LEADERSHIP AND SUPERVISION EXPERIENCE

TOTAL student supervision: 2 postdocs (2021 & 2022), 6 PhD students (currently, defense scheduled between 2024 and 2026), 35 MSc students, 3 BSc students, 1 undergraduate student, 3 vet students since 2010

Supervisor:

2022-2025: **3 doctoral candidates** & 1 post doc Turku & Helsinki university

2023: 1 MSc student, French National Natural Museum, 1 BSc student, Netherlands, 1 MSc student Turku University, 1 vet student Helsinki university (licentiate work), 2 MSc students NTNU, Norway.

2022: **2 MSc student**, University of Angers & Rennes, France, 1 BSc Kiehl, Germany, 1 MSc student NTNU, Norway

2021-2025: **3 PhD student**, Turku and Helsinki university

2021: **1 post doc, 5 MSc student**, University of Angers, Rennes, France, NTNU, Norway, Turku, Finland

2020: **3 M. Sc student**, University of Angers

2019: **6 M. Sc student, 1 undergraduate student**, Universities of Turku, Helsinki, Angers, Aix-Marseille

2010: **1 BSc student**, University of Turku, Finland

Adviser (<30% of supervision):

2023: 1Msc student MNHN France, Angers university, 1 vet student, 1 engineer student.

2022: 2 vet students, Helsinki, 2 MSc students, NTNU, Norway

2021: 1 Master student, university of Gabès, Tunisia, 2 Master students university of Turku, 1 MSc student, NTNU, Norway

2017-2018: **6 Master students**, university of Angers, France

2011: **1 veterinary student**, University of Turku, Finland

2004: **2 Master students**, university of Tours, France

Experience as leader of team of workers

2003-2006: **7 field technicians and 2 voluntary workers** (France & Sweden)

TEACHING EXPERIENCE

2023: Environmental ecology EKOL4102 : Case studies. Eutrophication and brownification. 2h; Endocrine disruptors 2h.

2022: Presenting and publishing scientific data in biology BIOL5203: supervision of 2 students

2022: Presentation of research projects BIOL2003: 1h

2021: Presentation of research projects BIOL2003: 1h

2021: Environmental ecology EKOL4102 , 3 courses of 2h each: Case studies. Endocrine disruptors, Microplastics, Eutrophication and brownification.

2020: Presenting and publishing scientific data in biology BIOL5203: supervision of 3 students

2020: Presentation of research projects BIOL2003: 1h

2019: **Joint course for Master and PhD students on Wetland ecology and management**; 1 week, 16 students; University of Helsinki, NOVA course; Funding, organizing, coordinating and teaching

2006 - 2007: **Course for PhD students and post-doc fellows: Introduction to R**; 1 week, 10 students; Biological Station of Tour du Valat, France; Funding and organizing

2006: **Course for B.Sc. Students in structure and function of organisms**; 196 hours, ~100 students; Toulouse University, France; Teaching

2005: **Joint course for Master and PhD students on waterfowl migratory ecology**; 1 lecture, 20 students; University of Helsinki, NOVA course; Teaching

AWARDS

2019: **Seal of excellence from the EU commission** for the project DiSRUPT.

2006: Travel and Poster Awards at the 4th North American Duck Symposium, Bismarck, USA, 23-26/08/2006.

OTHER KEY SCIENTIFIC OR ACADEMIC MERITS

2023: **PhD thesis examiner** of Salma Benmokhtar, University of Nantes & Mohammed V de Rabat, Morocco.

2023: **Evaluator** of Dr. Marion Vittecoq application for an "Habilitation à diriger des Recherches, university of Montpellier, France.

2023: **organizer** of a scientific writing support group at the university of Turku

2023: **Symposium convener** at the European Ornithologists' Union Congress, Lund "Tools to monitor birds' contamination and exposure effects

2023: **PhD thesis examiner** of Axelle Moreau, University of La Rochelle, France

2022: **Research grant evaluator** for the Rufford foundation.

2022- onwards: **Associate editor** of Ornithologia Fennica

2021: **Guest Associate Editor** in Behavioral and Evolutionary Ecology for Frontiers in Ecology and Evolution

2021: **Research grant evaluator** for the Icelandic Centre of Research

2021: **PhD thesis examiner** of David Vallecillo, University of Montpellier, France

2021: **PhD thesis examiner** of Soïlam Boutoumit, University of Nantes & Mohammed V de Rabat, Morocco.

2018: **PhD thesis examiner** of Benjamin Folliot, CEF-E-CNRS, University of Montpellier, France.

2020: **Research grant evaluator** for the Icelandic Centre of Research

Reviewer for: Aquatic Conservation, Ambio, Avian Biology Research, Bird Study, Canadian Journal of Zoology, Conservation Letters, Ecology and Evolution, Ecological Research, Ecological Engineering, Ekológia (Bratislava), Freshwater Biology, Hydrobiologia, Ibis, Journal of African Studies and Development, Journal of

PARTICIPATION TO EXPERT GROUPS

Since 2023: member of the biosafety committee of Turku university, representative of the department of Biology.

Since 2019: research group on long term dynamic of the boreal Forest

Since 2014: Wetland Ecology Group, university of Helsinki, <http://wetlandecologygroup.it.helsinki.fi/>

2014 - 2017: Finnish national committee of IUCN, Species Survival Commission

2010: Nordic Waterbirds and Climate Network – NOWAC. <http://www.ducksg.org/activities/nowac/>

Since 2002: Research group on the ecology of dabbling ducks in the boreal environment.

SCIENTIFIC AND SOCIETAL IMPACT OF RESEARCH

Google scholar: h- index = 19 for 83 publications identified, number of citations = 1077;

WoS: h- index = 13 for 28 publications identified, number of citations = 519 without self-citation;

Scopus: h- index = 15 for 31 publications identified, number of citations = 682.

37 peer-reviewed scientific articles, 12 publications intended for the general public, 40 poster presentation and 37 oral communications at National and International conferences.

Peer-reviewed publications

1. Vainikka A., Turunena A., Salgado-Ismodesa A., Lotsarib E., Olin M., Ruuhijärvi J., Huuskonen H., **Arzel C.**, Nummi P. & Kahilainen K.K. Submitted. Biomass and sustainable yields of Eurasian perch (*Perca fluviatilis*) in small boreal lakes with respect to lake properties and water quality. *Fisheries Research*
2. Davranche A., **Arzel C.**, Pouzet P., Carrasco A.R., Lefebvre G., Lague D., Thibault M., Newton A., Fleurant C., Maanan M., Poulin B. In revision. A multi-sensor approach to monitor the ongoing restoration of edaphic conditions for salt marsh species facing sea level rise: an adaptive management case study in Camargue, France. *Science of the Total Environment*
3. Florian G Weller F.G. Webb E. B., Fogenburg S., Beatty W. S., Kesler D., Blenk R. H., Ringelman K. M., Miller M. L., **Arzel C.**, Eadie J. M. Accepted. An agent-based model to quantify energetics, movement and habitat selection of midcontinent mallards in the Mississippi Alluvial Valley. *Ecological Modeling*
4. Grunst A. S., Grunst M. L., **Arzel C.**, Eens M. 2023. Editorial: Behavioral ecological insights into organismal responses to anthropogenic environmental change: a multi-stress perspective. *Frontiers in Ecology and Evolution*.
5. Blanchet C., **Arzel C.**, Davranche A., Kahilainen K.K., Secondi J., Taipale S., Lindberg H., Loehr J., Manninen-Johansen S., Sundell J., Maanan M., Nummi P. 2022. Ecology and extent of freshwater browning - What we know and what should be studied next in the context of global change. *Science of The Total Environment*, 812, <https://doi.org/10.1016/j.scitotenv.2021.152420>.
6. Nummi P., **Arzel C.**, Sauramo V. 2021. Populations in stable and variable habitats: Green and common sandpiper in a beaver-influenced landscape. *Global Ecology and Conservation*. 28(7): 10.1016/j.gecco.2021.e01678
7. **Arzel C.**, Nummi P., Arvola L., Pöysä H., Davranche A., Rask M., Olin M., Holopainen S., Viitala R., Einola E. and Manninen-Johansen S. 2020. *Science of the Total Environment*. Invertebrates are declining in boreal aquatic habitat: the effect of brownification? 724, 138199.
8. Lam S.S., McPartland M., Noori B., Garbus S.-E., Lierhagen S., Lyngs P., Dietz R., Therkildsen O.R., Christensen T.K., Tjørnløv R.S., Kanstrup N., Fox A.D., Sørensen I.H., **Arzel C.**, Krøkje Å, Sonne C. 2020. Lead concentrations in incubating common eiders (*Somateria mollissima*) from Christiansø in the Baltic Sea. *Environment International*. 137, 105582
9. Elmberg J., **Arzel C.**, Gunnarsson G., Holopainen S., Nummi P., Pöysä H. & Sjöberg K. 2019. Population change in breeding boreal waterbirds in a 25-year perspective: what characterizes winners and losers. *Freshwater Biology* doi.org/10.1111/fwb.13411
10. Saari L. & **Arzel C.** 2018. Vesilintukantojen kehitys Rymättylän Aaslaluodolla vuosina 1975–2015. *Suomen Riista* 64: 35–46
11. Holopainen S., **Arzel C.**, Elmberg J., Fox A.D., Guillemain M., Gunnarsson G., Nummi P., Sjöberg K., Väänänen V.-M., Alhainen M. and Pöysä H. 2018. Sustainable management of migratory European ducks: finding model species. *Wildlife Biology*.

12. Guillemain M., Pernellet C., Elmberg J., **Arzel** C. & Eadie J. 2017. Agent-based Modeling May Help to Merge Research Traditions in Foraging Ecology in Europe and North America. *Wildlife Society Bulletin*. 41(1): 170-176.
13. Dessborn L., Rönkä M., **Arzel** C. & Elmberg J. 2016. Sinisorsanpoikaset välttelevät synnynnäisesti erityyppisiä petoja. *Suomen Riista*. 62: 43–Y54.
14. Tolvanen H., Rönkä M., Vihervaara P., Kamppinen M., **Arzel** C., Aarras N. & Thessler S. 2016. Spatial information in ecosystem service assessment: data applicability in the cascade model context. *Land Use Policy*. 11(3): 350-367
15. **Arzel** C. & Elmberg J. 2015. Time use and foraging behaviour in pre-breeding dabbling ducks *Anas* spp. in sub-arctic Norway. *Journal of Ornithology*. 156 (2): 499-513.
16. **Arzel** C., Rönkä M., Tolvanen H., Aarras N., Kamppinen M. & Vihervaara P. 2015. Species diversity, abundance and brood numbers of breeding waterbirds in relation to habitat properties in an agricultural watershed. *Annales Zoologici Fennici*. 52(1-2):17-32.
17. Holopainen S., **Arzel** C., Dessborn L., Elmberg J., Gunnarsson G., Nummi P., Pöysä H. & Sjöberg K. 2015. Habitat use in ducks breeding in boreal freshwater wetlands: a review. *Eur J Wildl Res*. 61: 339–363.
18. Rönkä M., **Arzel** C., Tolvanen H., Tirri I.-S., Kamppinen M., Vihervaara P., Aarras N. 2015. Species and pair numbers of waterbirds and waterfowl and brood numbers of waterfowl in agricultural wetlands. *Suomen Riista*. 61: 26-42
19. Davis J.B., Guillemain M., Kaminski R.M., **Arzel** C., Eadie J. M & Eileen C. Rees. 2014. Habitat and resource use by northern hemispheric waterfowl during fall and winter. *Wildfowl. Special Issue 4*: 17-69.
20. Stafford J.D., Janke A.K., Anteau M.J., Pearse A.T., Fox A.D., Elmberg J., Straub J.N., Eichholz M.W. & **Arzel** C. 2014. Spring migration of waterfowl in the Northern Hemisphere: a conservation perspective. *Wildfowl. Special Issue 4*: 70-85.
21. **Arzel** C., Dessborn L., Pöysä H., Elmberg J., Nummi P. & Sjöberg K. 2014. Early springs and breeding performance in two sympatric duck species with different migration strategies. *Ibis*. 156 (2): 288-298.
22. Guillemain M., Pöysä H., Fox A.D., **Arzel** C., Dessborn L., Ekroos J., Gunnarsson G., Holm T.E., Christensen T.K., Lehtikainen A., Mitchell C., Rintala J. & Møller A. P. 2013. Effect of climate change on European ducks: what do we know and what do we need to know? *Wildlife biology*. 19: 1-16.
23. Gunnarsson G., Elmberg J., Pöysä H., Nummi P., Sjöberg K., Dessborn L. & **Arzel** C. 2013. Density dependence in ducks: a review of the evidence. *Eur. J. Wildl. Res*. 59: 305–321.
24. Dessborn L., Englund G., Elmberg J. & **Arzel** C. 2012. Innate responses of mallard ducklings towards aerial, aquatic and terrestrial predators. *Behaviour*. 149 (13-14): 1299–1317.
25. Caizergues A., Guillemain M., **Arzel** C., Devineau O., Leray G., Pilvin D., Lepley M., Massez G., & Schricke V. 2011. Emigration rates and population turnover of teal *Anas crecca* in two major wetlands of Western Europe. *Wildlife Biology*. 17(4): 373-382.
26. **Arzel** C., Elmberg J., Guillemain M., Lepley M., Bosca F., Legagneux P. & Nogues J.-B. 2008. A flyway perspective of food resource abundance in a long-distance migrant, the Common Teal (*Anas crecca*). *Journal of Ornithology*. 150: 61-73.
27. Guillemain M., Elmberg J., **Arzel** C., Johnson A.R. & Simon G. 2008. The income-capital breeding dichotomy revisited: late winter body condition is related to breeding success in an income breeder. *Ibis*. 150:172-176.
28. **Arzel** C., Elmberg J. & Guillemain M. 2007. A flyway perspective of foraging activity in Eurasian Teal *Anas crecca*. *Canadian Journal of Zoology*. 85: 81-91.
29. **Arzel** C., Elmberg J., Guillemain M., Legagneux P., Bosca F., Chambouleyron M., Lepley M., Pin C., Arnaud A. & Schricke V. 2007. Average mass of seeds encountered by foraging dabbling ducks in Western Europe. *Wildlife Biology* 13(2):328-336.
30. **Arzel** C., Guillemain M., Gurd B., Elmberg J., Fritz H., Arnaud A., Pin C. & Bosca F. 2007. Experimental functional response and inter-individual variation in foraging rate of teal (*Anas crecca*). *Behavioural processes*. 75: 66-71.
31. Guillemain M., **Arzel** C., Legagneux P., Elmberg J., Fritz H., Lepley M., Pin C., Arnaud A. & Massez G. 2007. Predation risk constrains the plasticity of foraging behavior in teals, *Anas crecca*: a flyway-level circumannual approach. *Animal Behaviour*. 73 :845-854.
32. Guillemain M., Poisbleau M., Denonfoux L., Lepley M., Moreau C., Massez G., Leray G., Caizergues A., **Arzel** C., Rodrigues D. & Fritz H. 2007. Multiple tests of the effects of nasal saddles on dabbling ducks combining field and aviary approaches. *Bird Study*. 54(1):35-45.

33. Guillemain M., **Arzel** C., Legagneux P., Elmberg J., Fritz H., Lepley M., Pin C., Arnaud A. & Massez G. 2007. Risky foraging leads to cost-free mate guarding in male teal *Anas crecca*. Journal of Ornithology. 148: 251-254.
34. **Arzel** C., Elmberg J. & Guillemain M. 2006. Ecology of spring-migrating Anatidae: a review. Journal of ornithology. 147(2): 167-184.
35. Guillemain M., **Arzel** C., Mondain-Monval J-Y & Simon G. 2006. Spring migration dates of Teal (*Anas crecca*) ringed in the Camargue. Wildlife Biology. 12 (2): 163-170.
36. **Arzel** C. & Elmberg J. 2004. Time use, foraging behavior and microhabitat use in a temporary guild of spring-staging dabbling ducks (*Anas* spp.). Ornis Fennica. 81 :157-168.
37. Poulet N., **Arzel** C., Messad S., Lek S. & Argillier C. 2005. Diel activity of adult pikeperch *Sander lucioperca* (L.) in a drainage canal in the Mediterranean basin during spring. Hydrobiologia. 543(1): 79-90.

E) Publications intended for the general public, linked to the applicant's research

1. Elmberg J., Dessborn L. & **Arzel** C. 2015. Så undviker andungarna rovdjuren. Svensk Jakt. 6: 46-48.
2. Elmberg J., Dessborn L. & **Arzel** C. 2014. Andungar har bra koll när faran hotar. Vår Fågelvärld. 73(2): 38-39.
3. **Arzel** C., Elmberg J. & Guillemain M. 2010. Comportement et alimentation de la sarcelle d'hiver *Anas crecca* lors de la migration pré nuptiale. Ornithos. 17(5): 307-315
4. Fiche espèce : la Sarcelle d'hiver, migration et survie. Novembre 2009. Interview for La chasse en Alsace. 81: 28-29
5. Guillemain M., **Arzel** C., Mondain-Monval J.Y., Schricke V., Johnson A.R. & Simon G. 2007. Déplacements hivernaux des sarcelles d'hiver baguées en Camargue. Faune Sauvage. 275: 12-14.
6. Elmberg J., **Arzel** C. & Guillemain M. 2007. Rovdjur och mat gör krickans dag till natt. Vår Fågelvärld. 15-17
7. Elmberg J. & **Arzel** C. 2006. Brånsjön- mer speciell än du tror! Fåglar i Västerbotten. 31(1):14-17
8. Guillemain M., **Arzel** C., Mondain-Monval J.-Y., Schricke V., Sadoul N., Johnson A.R. & Simon G. 2005. Définition des limites de populations en France et de la date de départ en migration pré-nuptiale des Sarcelles d'hiver. ONCFS Rapport scientifique 2005. 28-31
9. **Arzel** C., Stervander M. & Gunnarsson G. 2003. Simändernas ekologi studeras närmare. Vår Fågelvärld. 68(4): 25.
10. Elmberg J. & **Arzel** C. 2003. Kricka från Brånsjön flyger till Wales – och lär oss mer om en ovanligt okänd vanlig fågelart. Fåglar i Västerbotten. 28(3): 73-74.
11. **Arzel** C., Elmberg J. & Guillemain M. 2003. Forskare efterlyser rapporter om näbbmärkta änder. Jakt & Jägare. 9: 25.
12. Elmberg J. & **Arzel** C. 2003. Näbbmärkta änder i nytt forskningsprojekt. Svensk Jakt Nyheter. 2003(8): 5.

G) Theses

Arzel C. (defended the 10th of March 2006). Ecology of teal (*Anas crecca*) and other dabbling ducks: connection between their wintering, spring staging and breeding grounds. PhD thesis, Paul Sabatier University, Toulouse III, France, 318 pp.

O) Others

- Posters

1. **Arzel** C., Ask A., Hansen M., Vakili S.S., Ciesielski T.M., Asimakopoulos A.G., Zhang J., Lemesle P., Frøyland S., Jolkkonen J., Eeva T., Sonne C., Björkman S., Shaffer S., Ruuskanen S., Hsu B.-Y., Koivisto S., Selonen S., Öst M., Waldenström J., Davranche A., Jónsson J. E., Magnúsdóttir E., Carroll J. N., Madsen J., Fox A. D., Laaksonen T., Pöysä H., Nummi P., and Jaspers V. L. B.. The DISRUPT project: ducks as models for evaluating endocrine DISRUPTing chemicals in the aquatic environment. SETAC Europe 33rd Annual Meeting, 30 April–4 May 2023
2. Davranche A., **Arzel** C., Nummi P., Sundell J., Loehr J., Kahilainen K., Secondi J., Blanchet C., Minkinen K., Vasander H., Lindberg H., Seppä H., Sonk-Rautio K., Sigdel U., Lilley T., Manninen-Johansen S., Vihervaara P., Alhainen M., Kara T., Ilmonen J.. The role of seasonal wetlands as

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