

Education

- 2009-2012 **PhD** in biodiversity assessment with acoustic methods, Muséum national d'Histoire naturelle (MNHN), France.
- 2007-2009 **Master's degree** in Ecology, Biodiversity and Evolution with a specialization in Conservation biology. Agro Paris Tech, ENS, MNHN and Paris 6, UFR des sciences d'Orsay, France.
- 2005-2007 **Bachelor's Degree** in Biology of Organisms and Ecosystem - Ecology (BOE-E), Université de Paris-Sud, France.

Professional Experiences

- 2017-now Researcher permanent position for the Institut de Recherche pour le développement (IRD, France). Institut Méditerranéen de Biodiversité et d'Écologie Marine et Continentale (IMBE) IMBE UMR | Aix Marseille Université, CNRS, IRD, Avignon Université.
- 2014-2016 **Post-doctoral position in "Soundscape Ecology"**, advised by Dr. Bryan C. Pijanowski at the Center for Global Soundscapes, Purdue University, Indiana. Funded by the National Science Foundation (NSF).
- 2013 **Development and application of an acoustic monitoring protocol to evaluate the diversity and composition of grillidae communities.** Co-advised by Dr. Laure Desutter-Grandcolas (UMR7205 CNRS-MNHN) and Dr. Hervé Jourdan (IMBE-IRD, Nouméa), Nouméa. Funded by the «Actions Transversales» du MNHN" (ATM).
- 2013 **Post-doctoral position in "Anthropic impacts on Chiropteran populations: habitat modifications and wind farms"**. Advised by Dr. Jean-François Julien (UMR 7204 CNRS-MNHN), Paris. External collaborators: Maïa Eolis et CPIE pays de Soulaines. Funded by the French Environment and Energy Management Agency (ADEM).
- 2009-2012 **PhD in "Analyses and monitoring of biodiversity using a new passive acoustic method: the Rapid Acoustic Survey"**. Co-advised by Dr. Philippe Grandcolas, Dr. Jérôme Sueur (UMR 7205 CNRS-MNHN) and Dr. Sandrine Pavoine (UMR 7204, CNRS-MNHN). Funded by the « Institut Ecologie et Environnement » of the « Center National de la Recherche Scientifique » (INEE-CNRS).
- 2009 **DNA analysis for phylogenetic studies of Orthoptera species micro-endemic to New Caledonia.** Co-advised by Dr. Romain Nattier and Dr. Tony Robillard (UMR 7204 CNRS-MNHN), Paris.

- 2009 **Study of rats impact on a insular species of lezards *Anolis sagrei*.** Advised by Dr. Ryan Calsbeek from Dartmouth University, New Hampshire (USA).
- 2008 **Set-up of a monitoring plan for french Chiroptera in "Essonne" area (France).** Advised by Jean-Marc Lustrat from Conseil général de l'Essonne, Evry, France.

Area of Expertise

Leadership Experiences

- Management and development of the *Center for Global Soundscapes* sound library.
- Scientific consultations for the CGS projects and for FoxFire Interactive Company.
- Management of the collaborative data collection network (Wells, Maine USA; Chiricahua National Monument, Arizona USA; La Selva, Costa Rica).
- Report writing (Office, LaTeX), graphic design (Abode Illustrator and InDesign), oral presentation of results and work statement. Work with Linux, Windows and Mac.
- Extensive multidisciplinary collaboration.

Teaching Experiences

- Developing and teaching introductory course about soundscape ecology. 5 h. Level course for Master and PhD.
- Co-authoring and teaching multi-modal curriculum for middle school youth called Your Ecosystem Listening Lab (YELLs) to both middle school and visually impaired students from Perkins School for the Blind.
- Teaching acoustic data analysis at Global Sustainable Soundscapes Network (GSSN), July 2015.
- Creating and teaching a course about the use of acoustic for taxonomic identification. 2 h. Level Master. MNHN. Paris.
- Teaching assistant of a class about ecological and acoustic analyses with the software R. 60 h. Level: Master and PhD. MNHN. Paris.

Mentorship Experience

- Co-advising and mentoring of both undergraduate (7 students) and graduate (3 masters and 5 PhD students).

Methods Development

- Developing protocols for recording collections in natural area.
- Developing acoustic diversity indices and bioacoustics signal analyses for addressing biodiversity assessment and species identification.

Analytic Tools

- Acoustic signal analyses: Avisoft, Goldwave, Audacity, R (seewave, tuneR).
- Expertise in R coding: function creation for frequency peak detection in a recording (fpeak {seewave}) and analyses semi-automatic of bioacoustics signals. Basic knowledge in other language such as Python, Latex, SQL, Html5 and PHP.
- Acoustic recorder and microphones: D240X, SM1 to SM4, Zoom H1 to H5, Mixer SoundDevices. Recording in various environments: terrestrials and aquatics, in all range of frequencies. Microphones omnidirectional, figure 8 and cardioid.
- Statistical analyses uni- and multi-variables, temporal and spatial.

- Manipulation of BigData set. Basic knowledge in SQL language, manipulation of SQL data base using phpMyAdmin. Use of Clusters resources for a calculs automatisation.
- Molecular analyses: DNA extraction and amplification, PCR.
- Cartography. Arcgis 10, Qgis 1.8.

Field Work Expertise

- Knowledge in bird and chiropteran groups, base in floristic.
- Expertise in insular areas (Bahamas and New-Caledonia), temperate forest (France), tropical forest (New-Calédonia, India and French Guyana), desert (Arizona, USA), tidal zone (Maine, USA) and aquatic temperate ponds (France).
- Diving Level 1, First Aid valid until end 2016

Co-Organization of Workshops and Public seminars

- 2014 and 2015 Workshops of the 'Global Sustainable Soundscapes Network'.
- Scientific conferences about bioacoustics research in 'la cité des sciences et de l'industrie' for the scientific day 2012 in collaboration with the journalist Antonio Fischetti.

Langage Skills

- French (native speaker), English (fluent), Spanish (reading).

Scientific Publications

- Barbaro, L., Sourdril, A., Froidevaux, J.S.P. Cauchoix M., Calatayud F., Deconchat M., **Gasc A.** (2022). Linking acoustic diversity to compositional and configurational heterogeneity in mosaic landscapes. *Landscape Ecology*.
- Ghadiri Khanaposhtani M., **Gasc A.**, Francomano D., Villanueva-Rivera L. J., Jung J., Mossman M. J., Pijanowski B. C. (2019) Effects of highways on bird distribution and soundscape diversity around Aldo Leopold's shack in Baraboo, Wisconsin, USA. *Landscape and Urban Planning*, 103666.
- Bellisario K. M., VanSchaik J., Zhao Z., **Gasc A.**, Omrani H., Pijanowski B. C. (2018) Contribution of MIR to soundscape Ecology. Part 2: Spectral timbral analysis for discriminating soundscape components. *Ecological Informatics*, 51:1-14.
- Gottesman B., Francomano D., Zhao Z., Bellisario K. Ghadiri M., Broadhead T., Pijanowski B. C., **Gasc A.** (2018) Acoustic monitoring reveals diversity and surprising dynamics in tropical freshwater soundscapes. *Freshwater Biology*, 1-16.
- Gasc A.**, Anso J., Sueur J., Jourdan H., Desutter-Grandcolas L. (2017). Cricket calling communities as an indicator of the invasive ant *Wasmannia auropunctata* in an insular biodiversity hotspot. *Biological Invasions*, 5: 1099–1111.
- Gasc A.**, Francomano D., Dunning J.B., Pijanowski B. C. (2017). Future directions for soundscape ecology: the importance of ornithological contributions. *The Auk*, 134:215-228.
- Zhang, B., Pouchard, L.C., Smith, P.M., **Gasc, A.**, Pijanowski, B.C. (2016). Data storage and sharing for the long tail of science. In Scientific Data Summit (NYSDS), New York (pp. 1-9). IEEE.
- Lomolimo M.V., Pijanowski B.C., **Gasc A.** (2015). The Silence of Biogeography. *Journal of Biogeography*, 42: 1187-1196.

- Gasc A.**, Lellouch L., Pavoine S., Grandcolas P., Sueur J. (2015). Acoustic indices for biodiversity assessment: analyses of biases on bird assemblage simulations and recommendations for field survey. *Biological Conservation*, 191: 306-312.
- Ulloa J. S., **Gasc A.**, Gaucher P., Aubin T., Réjou-Méchain M., Sueur J. (2015). Screening large audio datasets to determine the time and space distribution of Screaming Piha birds in a tropical forest. *Ecological Informatics*, 31:91-99
- Desjonquères C., Ryback F., Depraetere M., **Gasc A.**, Le Viol I., Pavoine S., Sueur J. (2015) First Description of underwater acoustic diversity in three temperate ponds. *PeerJ*, 3: e1393
- Legendre F., Deleporte P., Depraetere M., **Gasc A.**, Pellens R., Grandcolas P. (2015) Dyadic behavioural interactions in cockroaches (Blaberidae): ecomorphological and evolutionary implications. *Behaviour*, 152:1229:1256.
- Sueur, J., Farina, A., **Gasc A.**, Pieretti, N., Pavoine, S. (2014) Acoustic indices for biodiversity assessment and landscape ecology. *Acta Acustica*, 100:772-781.
- Rodriguez A., **Gasc A.**, Pavoine S., Grandcolas P., Gaucher P., Sueur J. (2014). Temporal and spatial variability of animal sound within a neotropical forest. *Ecological Informatics*. *Ecological Informatics*, 21:133-143.
- Pavoine S., **Gasc A.**, Bonsall M., Mason N. (2013). Correlations between phylogenetic and functional diversity: mathematical artefacts or true ecological and evolutionary processes ? *Journal of Vegetation Science* (Special Issue), 24 : 781-793.
- Gasc A.**, Sueur J., Jiguet F., Devictor V., Grandcolas P., Burrow C., Depraetere M., Pavoine S. (2013). Assessing biodiversity with sound: do acoustic diversity indices reflect phylogenetic and functional diversities of bird communities? *Ecological indicators*, 25: 279-287.
- Pavoine S., Blondel J., Dufour A.B., **Gasc A.**, Bonsall M.B. (2013). A new technique for analysing interacting factors affecting biodiversity patterns: Crossed-DPCoA. *PLoS ONE*, 8(1), e54530. doi:10.1371/journal.pone.0054530.
- Gasc A.**, Sueur J., Pavoine S., Pellens R., Grandcolas P. (2013). Biodiversity sampling using a global acoustic approach: contrasting sites with microendemics in New Caledonia? *PLoS ONE*, 8(5): e65311.
- Gasc A.** (2012) Assessing and monitoring of biodiversity using innovative acoustic techniques. PhD thesis co-supervised by Grandcolas P., Sueur J. and Pavoine S.
- Sueur J., **Gasc A.**, Grandcolas P., Pavoine S. (2012) - Global estimation of animal diversity using automatic acoustic sensors. In Le Galliard JF, Guarini JM, Gaill F (Eds), *Sensors for ecology: towards integrated knowledge of ecosystems*. CNRS Editions, 101-119.
- Depraetere M., Pavoine S., Jiguet F., **Gasc A.**, Duvail S., Sueur J. (2012) Monitoring animal diversity using acoustic indices: implementation in a temperate woodland. *Ecological Indicators*, 13: 46-54.
- Gasc A.**, Duryea M.C., Cox R.M., Kern A. & Calsbeek R. (2010) Invasive Predators Deplete Genetic Diversity of Island Lizards. *PLoS ONE*, 5(8) : e12061. doi:10.1371/journal.pone.0012061.

Scientific Conferences

- Gasc A.**, Sueur J., Anso J., Desutter-Grandcolas L., Jourdan H. (2018) 8-years of research about the New Caledonian acoustic communities: summary and perspectives for biological conservation. European Conference of Tropical Ecology, France. 15 min presentation.
- Gasc A.**, Zhang B., Francomano D. and Pijanowski B. C. (2016). Computational tools for biodiversity survey using soundscape recordings. Eco-acoustic conference in Michigan University, USA. 15min presentation.
- Gasc A.** (2015). Soundscape ecology. New perspectives for conservation biology. Invited by Western Michigan University, USA. 1h presentation.

- Gasc A.** (2015). Perspectives of Soundscape Ecology. Global Sustainable Soundscapes Network conference. Nebraska, USA. 30 minutes presentation.
- Gasc A.** (2014). Turn on our ears to ecosystems. Acoustic indices for ecology and biological conservation. Invited by l'université de Montréal à Trois Rivières, Trois rivières, Quebec. 1h presentation.
- Gasc A., Anso J., Jourdan H., Sueur J., Desutter-Grandcolas L., Jung J. and Pijanowski B.C** (2014). Soundscape measurements to evaluate impacts of habitat degradation on acoustic animal communities. Ecology and acoustics, Paris, France et US-International Association for Landscape Ecology Annual Symposium, Anchorage, USA. 15 minutes presentation.
- Gasc A., Pijanowski B.C., Anso J., Jourdan H., Sueur J., Jung J. and Desutter-Grandcolas L.** (2014). Soundscape measurements to evaluate disturbance impacts on natural ecosystems. US-International Association for Landscape Ecology Annual Symposium, Anchorage, USA. 15 minutes presentation.
- Gasc A., Julien F-J., Lois G., Penone C., Leviol I. and Kerbiriou C.** (2013). What scale for what species to investigate the effect of habitat on bat activity? 16th International bat research conference, 15 minutes presentation.
- Gasc A., Dechant B., Ayyappan N., Péliissier R, Pavoine S., Grandcolas P. and Sueur J.** (2012) Impact of agroforest management on animal diversity: application of an acoustic method. Biodiversity Asia congress, poster.
- Gasc A.** (2011). Estimation de la biodiversité Les points forts des méthodes acoustiques. Journée de la Société Française d'acoustique (SFA), présentation 15 minutes.
- Gasc A., Sueur J., Devictor V., Grandcolas P., Jiguet F., Burrow C. and Pavoine S.** (2011). Assessing biodiversity with sound: what do acoustic diversity indices measure? European Ecology Federation (EEF) congress, flash presentation 3 minutes.
- Gasc A., Sueur J., Devictor V., Grandcolas P., Jiguet F., Burrow C. and Pavoine S.** (2011). Assessing biodiversity with sound: what do acoustic diversity indices measure? International Bioacoustic congress (IBAC) congress, presentation 15 minutes.
- Gasc A., Pavoine S., Sueur J., Grandcolas P.** (2010). Biodiversity sampling using a meta-acoustic method: micro-endemism detection in New-Caledonia. Ecologie 2010 congress, poster.

Review for Scientific Peer-reviewed Journals

Conservation Biology (1), Environmental Conservation (1), Ecological Indicators (2), Ecological Informatics (2), Landscape Ecology (1), Landscape and Ecological Engineering (1), Science of the Total Environment (1), Freshwater Ecology (1)