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MSc Aquaculture and Marine Resource Management



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MSc Aquaculture and Marine Resource Management

Do you want to work on the sustainable use, conservation and restoration of aquatic ecosystems and resources? Then this is the master's for you! The master Aquaculture and Marine Resource Management lets you dive into a world of possibilities.

Aquaculture and Marine Resource Management is a multidisciplinary master's programme. This results in alumni finding jobs in many different organisations: in the profit sector, in research, in national and international policy and governmental institutions, and for NGO's. In this booklet alumni of MAM tell you about their jobs and how their time at WUR prepared them. Are you ready to make the change?

For more information, you can take a look at our website: www.wur.eu/mam. If you have any further questions, you are welcome to contact us via mam@wur.nl.

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Esmee Bannenberg



2019



PhD Candidate at TU Delft | Delft, NL

In early 2019 I graduated from the Master Aquaculture and Marine Resource Management, with a specialisation in marine governance and development studies. During my studies, I wanted to learn as much in practice as I did behind a computer. To do this, I volunteered at multiple organisations and worked for the WUR at several research projects. Eventually I ended up doing quite some jobs teaching all sorts of public about the ocean. This extracurricular work helped me figure out what interests and suits me in the broad field of marine resource management.

After graduation I became a *coastal and marine management* teacher at Van Hall Larenstein University of Applied Science in Leeuwarden. I got tipped on this vacancy through my network and recommended to the organization. In this job I was able to combine my interest in teaching with the knowledge I gained at WUR. Although I enjoyed it very much, I missed working on a project myself. I felt like being a full-time teacher is more fun further in my career, because then I will not only have theoretical knowledge, but also more practical experience. I decided to go into another path and now I'm starting as a PhD candidate at the TU Delft at the *Living Dikes* project. In this project I will research the implementation of climate-proof dikes in the context of nature based solutions.

Although my master at WUR prepared me mostly for an international setting, both jobs required knowledge from Dutch water governance. Luckily, besides knowledge, you learn more general skills as well at university, such as finding and processing information quickly. Because of these skills, I was able to familiarize rapidly with the Dutch setting.

Jip Vrooman



2015



Marine Mammal Researcher & Marine/Freshwater Ecologist at Wageningen Marine Research | IJmuiden, NL

After graduating from WUR in 2015, I first started working as a marine ecologist and project leader at the North Sea Foundation. A nice organisation, where I learned a lot about the North Sea, influencing policies and dealing with different stakeholders. After a while, however, I started to miss the 'real' biology (as opposed to policy) and playing with data. That is exactly why I made the switch to Wageningen Marine Research (WMR) in IJmuiden. I started there in 2019 as a fish ecologist. Soon I started communicating my other passion: marine mammals. The team working on marine mammals needed some help, and I started dedicating an increasing amount of my time to projects concerning cetaceans (whales and dolphins). This was a dream come true.

Currently the projects I work on include fish stocks in fresh and salt water, Wadden Sea fish ecology, harbour porpoises, and the International Whaling Commission (an international organisation concerned with the worldwide management of cetaceans). Although 95% of my work is done from behind my computer, I can occasionally go out on the water. I regularly monitor fish in the Wadden Sea, for example, and last summer I collected harbour porpoise clicks on the Oosterschelde. Wageningen Marine Research conducts a lot of applied research, which gives you the feeling that you are directly contributing to policy-relevant knowledge. In the future I hope to be able to continue doing research that contributes to the protection and better management of our nature.



Jim Boy Bos



2018



(Assistant) Technical Project Manager at Kingfish Zeeland
| Kats, NL

During my masters, I focussed on the biological and technical aspects of fish farming in recirculating aquaculture systems (RAS). After graduation, I started my career as an aquaculture engineer at Fleuren & Nooijen BV in Nederweert (the Netherlands), a provider of technical solutions for aquaculture and aquatic research fields, better known under the trade name ZEB CARE and Aquaculture ID. I came into contact with the company through connections I have built during my time on the board of the study association Aquarius.

As an aquaculture engineer I functioned as a pivot between sales, construction and the installation team. Among others, my tasks consisted of making (2D/3D) RAS designs, purchasing materials and coordinating the prefabrication process in the workshop. Quite a technical job, in which my previous construction work experience (gained during side jobs) and knowledge gained at WUR appeared to be very useful. Since June 2021, I am employed at Kingfish Company as an assistant technical project manager. At Kingfish we farm Yellowtail Kingfish in indoor recirculating aquaculture systems. Our kingfish is sold as a sustainable alternative for sushi and sashimi tuna. Currently, the Kingfish Company is expanding rapidly. In my current role as assistant and project manager, I am responsible for coordinating the construction and installation activities for the expansions at our production site in Kats (Zeeland, The Netherlands). I am very happy in my current position. Due to the fast growth, the working environment is dynamic. No two days are the same, challenging me constantly and giving me possibilities to grow both professionally and personally. Together as a driven team, every day we are trying to take the company one step forward towards a better future for all. This is something that makes me enjoy and be proud of working at the Kingfish Company.

Kadi Mey Ismail



2018



Product & Strategic Project Manager at Royal De Heus
| Jakarta, Indonesia

I am currently working as Product & Strategic Project Manager at Royal De Heus. This is an international company that produces animal nutrition for compound feed (poultry, pigs, ruminants, and aquaculture), premixes, concentrates, and feed specialties. I started as an intern in the company, but after three months I got offered to join the company as a trainee in the Aquaculture department. This was a great opportunity for me, as I was totally new in the feed industry and that would give me many chances to learn about aqua nutrition, feed production and quality.

I did my first job as a Trainee Global Support & Concept Development Aqua in the Netherlands for about a year. After that, I came back to my home country in July 2019 to support the business unit of De Heus in Indonesia, where I was assigned as a product manager for aquafeed. This entails regular visits to farmers to find out the exact conditions and requirements of the local market, which I then share with the companies' stakeholders. I work with other departments as well, such as formulation, QA/QC, production, purchasing, technical specialists and commercial teams to power progress in the specific field of aquafeed. For me as a product manager, one of the most important challenges is to develop aquafeed that suits the needs and conditions of local farms. On top of my job as a product manager, I have been involved in many other projects, such as Merger & Acquisition (Factory Integration) and product certification BAP (Best Aquaculture Practices). I have gotten into project management only recently, but I really enjoy it. Therefore in 2022, I got promoted to Product & Strategic Project Manager.

In my current position I use a lot of skills that I learned at WUR. During group work, I was encouraged to be open and brave in sharing and discussing my opinions. I also learned to be critical and structured, and I got to know a lot of different cultures and nationalities. This I value very much.

In the future I want to be a project management and business development professional in the food value chain. I would like to bring sustainability in the business process and so contribute to a better world.

Rosalie Tukker



2017



Policy Advisor at Europêche | Brussels, Belgium

Officially I am employed as a policy advisor or as a lobbyist at Europêche, an European organisation of shipowners, fishermen and -women, and employers. Yet my daily work exists of much more.

At Europêche we promote responsible and sustainable fishing practices, linking the fishing sector and the European institutions. I design and implement knowledge-based advocacy strategies to raise awareness about sustainable ocean governance and sound fisheries management. In addition, I perform numerous European projects that Europêche manages or participates in. For example projects on ensuring safety at sea and protecting fishers' lives, as well as environmental sustainability training, and maritime emergency training. I love that at Europêche we also defend the European fishing industry interests on a global level, while

focussing on the labour aspects as a part of a sustainable agenda. This means we deal with questions related to professional training, social harmonisation and employment, and health and safety at work.

Though I did not know Europêche during my studies, nor did I think about working with European institutions, I am glad I became aware of it. While working on the creation of the 2030 North Sea strategy during my internship at the Ministry of Infrastructure and Water Management, I was approached by one of the national organisations I represent today. They were looking for somebody with a background in MAM, and asked me to go to Brussels. Now it has been 4,5 years in this very passionate, dynamic and challenging world. I am grateful to have found a job that perfectly fits my master. With my specialisation in marine governance and a background in marine biology, I am able to combine the needs of society and industry with a focus on sustainability every day.



Marten Bosma

 2021  Hatchery Employee at Fry Marine | Kamperland, NL

During my master's I found out that I wanted to do hands-on work at a fish farm. Because of this, I tried to follow as many practical-based courses as possible, and did my internship at the R&D facility of De Heus in Vietnam to get hands-on experience.

After graduation from the Aquaculture and Resource Management Master with a specialisation in aquaculture, I saw an opening for an on-call position at Streekvis, where I got the opportunity to work on an arctic char pilot for a few months. This experience helped me a lot in future open job applications to fish farms, as it proved that I was willing to work with my hands and that I did not only have a university degree, but hands-on experience as well.

Through one of these open applications I found a job at my current employer: the turbot hatchery Fry Marine in Kamperland Zeeland. As a general hatchery employee, my daily tasks vary from feeding fish and larvae, to collecting and fertilising new eggs, and checking water quality. Another very important task is cleaning the systems, so as a general hatchery employee you should not be afraid to get your hands dirty!

At Fry Marine, we aim to innovate fish farming and make it more sustainable. The scientific mindset that I got during my time at WUR enables me to think about these new innovations, but also to solve day to day problems on the farm. Furthermore, I learned that a practical view is very important and something that I am still trying to improve with the help of my more experienced colleagues. I love to do hands-on work every day in addition to having the chance to innovate. This will help me realise my dream for the future: owning my own fish farm!

Sarina Versteeg

 2017  Project Manager and Marine Ecologist at Arcadis | Arnhem, NL

After finishing my master at the end of 2017, I started as a marine ecologist at Arcadis in 2018. Arcadis is an engineering firm that is involved in all kinds of projects, mostly in construction and spatial planning. I am employed at the advisory group for Ecology and Biodiversity, which researches the impact of our projects on nature, both the positive and the negative. Personally, I work a lot on permits for the infrastructure (e.g. wiring) necessary to connect future wind farms at sea to the power grid. As you can predict from my work location, I am mostly working from behind my desk, as permits ask a lot of paperwork. I really enjoy my job as a project manager and marine ecology advisor at Arcadis, mainly because I work on projects that have true impacts on and value to nature, and projects that are located everywhere around the world. My favourite projects to work on are the larger environmental impact assessments, where ecology is one of the main factors a decision between project alternatives is based upon. I find it fascinating to experience such a process, and to ensure clarity on what option is best for the Dutch nature.



Michele Gallo



2019



Head of Aquatic Research Facilities Design at AquaBioTech Group | Malta

In 2015, I moved to Wageningen to start my MSc in Aquaculture and Marine Resource Management after being a marine biologist for almost a decade. Directly from my start at WUR, I decided to focus on Recirculating Aquaculture Systems (RAS). I did both my internship and thesis on this production system. My internship at Nofima gave me a great hands-on experience, being surrounded by top aquaculture scientists and salmon experts, and working on a wonderful location: a Norwegian fjord.

In 2017, while attending my first Aquaculture Conference in Croatia, I met my current employer and convinced him to give me a chance. A few weeks later, he offered me a job as an Aquaculture RAS Engineer. I was still writing my thesis, but decided to accept the job and move to Malta. Working full time and writing my thesis in my spare time was challenging, but I finished my masters successfully at the beginning of 2019.

Since then I have been traveling a lot for my job. I attend conferences and visit clients. I helped design and build multiple RAS systems around the world, tested new technologies, broadened my professional network, and met colleagues from many different countries. I recently started at my current position as head of Aquatic Research Facilities Design, with more responsibilities and challenges, and certainly with more understanding of the aquaculture sector and increased motivation.

The experiences I gained during my time at WUR were essential in building my new career path, both from a professional and personal point of view. My studies gave me a very strong background in Aquaculture, in addition to the professional tools to excel in my current job, and the capacity to adapt to future changes in the sector. In the future, I am planning to settle in Malta and continue growing in my current company.



Susan de Koning

 2019  PhD Candidate in Environmental Governance & Politics at Radboud University | Nijmegen, NL

I graduated in 2019, with a specialization in Marine Governance. Originally it was my intention to become an ecologist, but during the course *Ocean and Coastal Governance* of the minor *Marine Living Resources*, I realized that I could combine my love for (marine) nature with my interest in politics. Now, I work as a PhD Candidate in Environmental Governance and Politics at Radboud University Nijmegen, the Netherlands.

Before I got my current position, I started my career as a marine governance researcher at Wageningen Marine Research, where I also did my MSc Thesis. I mainly worked on offshore wind farms, mollusc aquaculture, and fisheries policy. To become a better researcher and to find out whether I would like to become a teacher in higher education, I wanted to do a PhD. I found my current position, where I could work in an interdisciplinary team, working closely with stakeholders as well.

My PhD research is part of a Living Lab for biodiversity restoration, where I study partnerships between governments, nature organisations, and farmers. Next to working on campus for writing and teaching, I also spend time in my study area, the Dutch Dune and Flower Bulb Region. As a PhD Candidate, there are a lot of ways to develop yourself both as a researcher and on a personal level. You are supervised by senior researchers, and you are able to follow courses, travel for summer schools and conferences, and determine the course of your project. My daily tasks consist mainly of reading and writing, but I also supervise students, pay visits to the field, and interview different stakeholders.

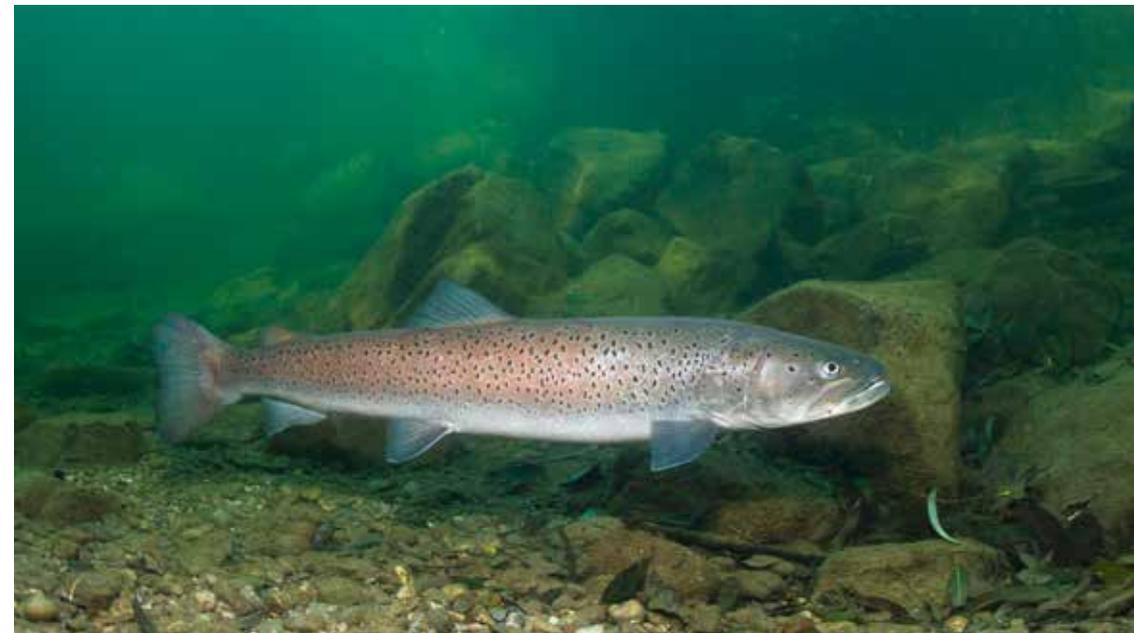
During my time at WUR, and especially during my master, I learned to study issues from both social and natural scientific perspectives. This helps me now when interviewing farmers and fishers, as well as policymakers and other scientists. Also, my thesis taught me to work independently for long periods, and the course Research Master Cluster gave good insights into the content of a PhD trajectory and the necessary skills for finishing a PhD. After my promotion, I would like to either continue working on research and education or put my knowledge into practice with a position at the government.

Ruben Groot

 2016  Manager Quality and Nutrition at Alltech Coppens and PhD candidate at WUR | Leende, NL

After graduating MAM in 2016, I started as the aquafeed nutritionist for Alltech Coppens at their feed plant in Nettetal (Germany) in the beginning of 2017. This was a very nice position where I had the opportunity to apply the knowledge I gained during my master in the industry. I was mainly involved in managing all the recipes for the fish feeds produced by the company. During that time I also realised that the practical application of research in industry is what really interests me. In the past 5 years I have been able to further increase my knowledge on nutrition and in 2020 I got promoted to manager quality and nutrition. I am now responsible for all aspects related to quality and nutrition for the feeds we produce at Alltech Coppens.

Although I am mainly involved in the practical aspects of fish nutrition, I am still very interested in research as well. Therefore, I consider myself very lucky to have gotten the opportunity to start a PhD at the WUR in September 2018, next to my job at Alltech Coppens. In this PhD we are looking at the use of net energy evaluation for salmonids and we perform the trials at the Alltech Coppens Aqua Centre in the Netherlands, fitting my current job in fish nutrition perfectly.



Sophie de Reus

 2018  Marine Ecologist at Royal HaskoningDHV | Rotterdam, NL

After completing my master in 2018, I started looking for a job where I could put theory into practice. With the help of a secondment agency, I quickly came across Royal HaskoningDHV. Royal HaskoningDHV is an engineering and project management consultancy leading the way in sustainable development and innovation. During my studies in Wageningen, I did an internship at the dredging company Van Oord BV, to experience first-hand how the projects in context of Building with Nature are put into practice. Because of this internship, I already had a good impression of the Dutch legislation and the business community in these Building with Nature projects.

As a marine ecologist at Royal HaskoningDHV, my working area is mainly in the Netherlands. I work on environmental assessments, which means that I look at the effects of a specific activity on nature reserves and animal species. These can be activities such as gas drilling or coastal defence. I also spend a lot of time working on the Natura 2000 management plans. These are management plans which Rijkswaterstaat draws up for the protected areas in the Netherlands. Currently, there are multiple international projects, such as nature assessments for ports. It is nice to see that the sustainability bubble that is already present in Wageningen is expanding, not only to the Dutch government and the business community, but also globally. This change of mindset is taking place slowly, but I like that I can contribute to it. I believe it is very valuable to be able to include sustainability and nature in all kinds of projects. This is also my wish for the future: to make the business community more aware of the fact that all projects can be carried out in a sustainable and nature-friendly way.



Ian Chen

 2018  Trial Coordinator at Pontus Research Group | Singapore

After my master, I started working as Feed Manager in Singapore's largest sea-farm, managing the growth and production of fish. In September 2021 I started with my current position as a Trial Coordinator at Pontus Research Group. We are a contract research organisation, with sites in Wales and now in Singapore, where I am located. My work consists of developing and running feed and performance trials for various tropical marine species, such as grouper, barramundis and vannamei shrimp. It is a very exciting job, planning and coordinating these trials, as it enables me to learn and work with various marine species. I still use knowledge and practical skills I gained during my masters at WUR. While doing my MSc thesis, for example, I did a research trial on African catfish, which prepared me both for theoretical and practical aspects of my current job. In the future, I hope to learn and grow further in the research & development sector aquaculture.

Vera Scherders



2016



Policy Advisor Circular Economy at NVRD | Arnhem, NL

I finished MAM in 2016, with a specialisation in Marine Governance. During my master, I got interested in the social aspect of aquaculture and fisheries. The influences of politics, policy and legislation got my attention, and I made sure I experienced all. I did an internship in Vancouver at ThisFish/Ecotrust Canada where I worked on the traceability of seafood products, I graduated at Wageningen Economic Research with a research on the social aspect of the pulse trawl, and after graduation I worked at the Committee on Fisheries at the European Parliament in Brussels for six months.

After this, I followed a traineeship of 1.5 years at Rijkswaterstaat, where a whole new world opened up before me: the world of sustainability and climate change. During this traineeship I worked on various projects, such as litter on highways, an EU project on the ecological effects of wind farms at sea, and putting sustainability to practice in large infrastructural projects. I worked at Rijkswaterstaat for another two years, as a board advisor on water and sustainability. I was responsible for answering parliamentary questions, giving strategic advice and giving advice during debates. I really enjoyed the actuality during this job, as well as the political environment and working with the ministry.

In January 2022, I started at the NVRD as a Circular Economy Policy Advisor, which is my current position. The NVRD unites companies and municipalities responsible for waste management. Circular economies are key to how we deal with waste, and together with municipalities and companies, I search for paths towards these circular economies.

My current position has a focus that is totally different from what I studied, though I am still completing the WUR circle by being involved in solving a global problem: the plastic soup. Studying at WUR gives you great opportunities for both professional and personal development, and teaches you about something very valuable: sustainability. This is something that you take with you throughout your whole career, wherever you might end up.

Thijs Versantvoort



2021



Specialist Aquaculture at ACE Aquaculture Constultancy & Engineering | Mill, NL

After finishing my MSc Thesis, I started my internship at ACE Aquaculture Consultancy & Engineering in spring 2021. I had six very educational and enjoyable months there, so I happily accepted the opportunity to stay when this was given to me in August 2021.

At ACE we design and build RAS (recirculating aquaculture system) fish farms, such as filtration parts, and complete RAS farms as well. During my internship, I focused on the design and performance evaluation of a new and innovative concept of protein skimmers. While conducting this research, I further explored various filtration techniques and dived into a new area of physics, which I hadn't done for a long time.

Since I got my position as an Aquaculture Specialist, I have been working on various activities at ACE's own workshop in Mill, Noord-Brabant, as well as at fish farms like Kingfish Zeeland. My tasks span from doing scientific literature research to constructing biological filtration units. I learned how to use welding equipment and got introduced into the world of plastics as building material on a construction project. This variation provides an enjoyable mix of working with the brain and working with the hands.

During the *Aquaculture Production Systems* course, a part of my master programme, I was introduced into the world of RAS fish farming and the increasing complexity of filtration mechanics that drive the development of clean, healthy, and sustainable fish farming. This has sparked my long-lost interest in physics and combined it with my passion for (animal) biology. I am glad to be able to put that drive into my day-to-day work at ACE, and I am looking forward to further explore the world of RAS aquaculture, water treatment, and marine biology in the future.



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