

MANJUSHA AMEY

Marine Biology | Zoology

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PROFESSIONAL SUMMARY

Research-trained life scientist with an M.Res in Marine Biology (University of Plymouth, UK) and an MSc in Zoology (University of Kerala), combining hands-on laboratory research with academic teaching and science communication. Experienced across molecular biology (PCR, RNA isolation, gel electrophoresis), bioinformatics (BLAST, phylogenetic analysis, sequence alignment), and environmental/ecological research (microplastic pollution analysis, ecological monitoring, field sampling). Proficient in R and Python for data analysis, with a track record of independent project design, data interpretation, and clear scientific reporting. Postgraduate Member of the Marine Biological Association. Seeking a Research Assistant, Research Associate, or Academic Associate role to contribute technical research skills, data analysis capability, and teaching experience to an active research group.

CORE RESEARCH & TECHNICAL SKILLS

Molecular Biology: PCR, Reverse Transcription, RNA Isolation, Gel Electrophoresis, Primer Design, Histopathology

Bioinformatics & Phylogenetics: BLAST, Galaxy, PhyML, Phylemon 2, SeaView, Sequence Alignment, Phylogenetic Tree Construction, Evolutionary Analysis

Environmental & Microplastic Analysis: Tissue Digestion (KOH/CLEAR Protocol), Vacuum Filtration, Microscopy-Based Identification & Classification, Ecotoxicology

Programming & Data Analysis: R, Python, Statistical Analysis, Data Visualisation, Microsoft Office Suite

Field & Ecological Research: Species Survey, Ecological Monitoring, Environmental Data Collection, Coastal & Estuarine Ecosystem Assessment

Scientific Communication: Scientific Figure Design (Adobe Illustrator), Technical Report Writing, Academic Presentations, Literature Review

Research Practice: Experimental Design, Independent Project Management, Laboratory Safety Compliance, Data Recording & Documentation

RESEARCH EXPERIENCE

Research Assistant (M.Res Dissertation Project) — Molecular Biology & Bioinformatics 2023

University of Plymouth, Plymouth, United Kingdom | Supervisor: Dr Vengamanaidu Modepalli

- Designed and executed an independent research project investigating the evolutionary origins and relationships of RNA-silencing proteins (AGO, PIWI, Dicer, Drosha, Pasha) across early metazoan lineages
- Performed molecular laboratory techniques including RNA isolation, PCR, and gel electrophoresis to support sequence-level analysis
- Conducted sequence alignment and phylogenetic reconstruction using BLAST, Galaxy, PhyML, Phylemon 2, and SeaView
- Analysed and interpreted evolutionary patterns across protein families, producing publication-quality scientific visualisations
- Authored a research dissertation summarising methodology, results, and evolutionary implications for peer and supervisor review

Research Assistant (MSc Dissertation Project) — Microplastic Pollution Ecology 2020

University of Kerala, India | Supervisor: Dr Dhanya Sethunarayanan

- Quantified microplastic contamination in black clam (*Villorita cyprinoides*) tissue samples collected from the Vembanad Backwaters, Kerala
- Applied the CLEAR protocol, including KOH-based tissue digestion and vacuum filtration, to isolate microplastic particles from biological samples
- Conducted microscopy-based identification and morphological classification of extracted microplastics
- Identified fibres as the dominant microplastic type and assessed likely anthropogenic contamination sources
- Presented findings in a written dissertation evaluating ecological risk and environmental monitoring implications

ACADEMIC & TEACHING EXPERIENCE

Teaching Assistant **July 2023 – September 2025**

Supply Plus, Plymouth Learning Partnership, Plymouth, United Kingdom

- Delivered targeted academic support in science subjects to secondary school students across multiple year groups
- Facilitated individual and small-group learning sessions to improve subject engagement and academic outcomes
- Applied differentiated instruction techniques to accommodate diverse learning needs and abilities
- Supported student well-being through pastoral care, contributing to an inclusive learning environment
- Maintained a productive classroom environment through consistent behaviour and time management strategies

Biology Tutor (Freelance) **February 2020 – August 2022**

Kasaragod, Kerala, India

- Designed and delivered individualised lesson plans tailored to students' varied learning needs and academic levels
- Assessed student progress through regular evaluation and provided actionable feedback to drive improvement
- Mentored students through sustained engagement, supporting long-term skill development and academic success

Sagar Mitra — Science Outreach & Community Educator **February 2022 – August 2022**

Department of Fisheries, Government of Kerala, India

- Led community outreach initiatives to raise public awareness of fisheries science and environmental sustainability
- Facilitated enrolment in government fisheries schemes, expanding access for local stakeholders
- Conducted systematic field data collection and reporting to support programme evaluation
- Promoted marine conservation practices and sustainable resource management among coastal communities

EDUCATION

M.Res, Marine Biology **2022 – 2023**

University of Plymouth, Plymouth, United Kingdom

Dissertation: Emergence and Evolutionary History of Proteins Involved in the Small RNA Pathway at Early Stages of Metazoans

MSc, Zoology **2018 – 2020**

University of Kerala, SN College, Cherthala, Alappuzha, India

Dissertation: Microplastic Pollution in Vembanad Backwaters of Kerala with Special Reference to the Black Clam

BSc, Zoology **2015 – 2018**

Kannur University, Govt. Brennen College, Thalassery, India

Dissertation: Ant Diversity in the Mangroves of Thuruthi, Kunhimangalam, Kerala

PROFESSIONAL DEVELOPMENT & CERTIFICATIONS

- Scientific Visual Communication: Creating Figures Using Adobe Illustrator & Good Graphic Design Practice — Marine Biological Association, Plymouth (2023)
- Python for Non-Programmers; The Non-Technical Skills of an Effective Data Scientist — LinkedIn Learning (2026)
- Workshop on Genomics — MACFAST | Workshop on Microplastic Pollution — Asian Institute of Technology
- Environment Data Analysis Using R - Envischolar

RESEARCH INTERESTS

Microplastic pollution and ecotoxicology • Marine ecology and conservation • Environmental toxicology • Molecular evolution and bioinformatics • Coastal and estuarine ecosystem monitoring • Science education and public engagement

PROFESSIONAL MEMBERSHIP

Postgraduate Member, Marine Biological Association, Plymouth, United Kingdom — November 2023 – Present

LANGUAGES

English (Fluent) • Malayalam (Native)

REFERENCES

Available upon request.