



## PROFILE

# JAKOB FRIES

## ENVIRONMENTAL CONSULTANT



Jakob has been interested for a long time in everything to do with fish and ecology, leading to a study marine biology and specialising in estuarine ecology. Jakobs' studies have given him further interest in testing statistical assumptions and reliability of measurement methods. He has a strong commitment to upholding and advocating for high ethical standards in environmental practice and hopes to influence the improvement of environmental management and stewardship in Australia.

Over the past six years he has developed a broad range of skills and capabilities in ecological and environmental ecosystem management in aquatic and estuarine environments. Jakob also recently completed a Masters degree specialising in the ecology and productivity of estuarine fish populations in the tropics. He has a detailed understanding of ecological and physiochemical processes that underpin ecosystem services and functions of tropical estuarine, aquatic, and marine ecosystems. These include services such as fisheries productivity, and ecosystem functions such as nutrient and carbon cycling. He has been involved with the identification and prioritisation of remedial actions for barriers to fish community and population connectivity. These have included variations in water flows and physiochemical parameters due to seasonal rainfall patterns, water extraction, pollutant contamination, and modifications to natural water courses e.g. weirs, dams and fish-ways.

In addition to his academic qualifications, he has four years full-time experience as an environmental scientist working in applied water quality and ecological sciences within the Department of Natural Resources, Mines and Energy in Queensland. Jakob has further enhanced his professional experience working as a student researcher for the National Environmental Science program in Project B4: Underpinning the Repair and Conservation of Australia's Threatened Coastal-Marine Habitats.



"My love for the natural environment has driven me to seek out and synthesise new approaches to measurement of complex natural systems. I hope to develop my knowledge in this area and influence structural changes in environmental management."

## KEY SKILL AREAS

- Estuarine ecological and biological monitoring
- Estuarine fish population measurement
- Fish productivity measurement and analysis
- Aquatic and estuarine habitat assessment
- Ecological statistical analysis
- Experimental and research design
- Technical and scientific publication and reporting
- Water quality monitoring and analysis

## EDUCATION AND TRAINING

### Master of Philosophy (Estuarine ecology)

Thesis: Measuring productivity of tropical estuarine fisheries using standing stock data

*James Cook University, Townsville, Australia (2015-2020)*

### Graduate Diploma of Research Methods (Marine and ecological sciences)

*James Cook University, Townsville, Australia (2014-2015)*

### Bachelor of Science (Marine Biology)

*James Cook University, Townsville, Australia (2011-2013)*

Radiation Safety Officer

Licence to Perform High Risk Work Forklift Truck



# EXPERIENCE

## Scientist - Water Quality

(Department of Natural Resources, Mines and Energy, Mareeba)

- Collection and analysis of environmental (water quality, soil & plant chemistry, and biological data (macroinvertebrate, fish, aquatic and terrestrial flora, habitat surveys)
- Data analysis and interpretation, production of technical and scientific reports and publications
- Development of new research projects, monitoring schemes and funding applications
- Design and development of data collection methods, quality control procedures and robust analytical methods
- Engaging clients, stakeholders, and researchers to present research findings, provide scientific and technical advice related to industry-environmental conflicts

- Working closely with team members and collaborating with industry experts and researchers to complete tasks, solve problems and share knowledge and skills

## Student researcher

(National Environmental Science Programme, Marine Biodiversity)

- Collection of primary data for assessment of ecological links between tropical estuarine habitats and fisheries production
- Assist with analysis of biological and ecological data, and interpretations to produce scientific reports and peer reviewed journal articles

# RELEVANT PROJECTS

PROJECT	DESCRIPTION	ROLE	CLIENT	YEAR
Logan and Albert Rivers fish habitat prioritisation study	Identification, analysis and prioritisation of restoration interventions to improve fish habitat in the Logan and Albert Rivers	Design, analysis technical support and report development	Logan City Council	2021
Herbert and Murray Rivers fish barrier prioritisation study	Analysis and prioritisation of fish barrier remediation actions to improve fish habitat connectivity in the Lower Herbert and Murray River catchments (Wet Tropics)	Design, analysis technical support and report development	Terrain NRM	2021
Endeavour river Pile fields	Bank stabilisation and rehabilitation of eroding banks	Development applications	Neilly Group	2021
Sheep Station and Plantation Creek fishways	Design and construction of rock-ramp fishways at causeway and culvert upgrades in the Lower Burdekin	Fish passage provisions and development applications	Lower Burdekin Water	2021
Queens Road and Gould Adams Park Weir fishways	Design, options analysis, and construction of fishways on Scrubby Creek, Logan river catchment	Fish passage provisions and development applications	Logan City Council	2021
Fursden and Sandy Creek fishway monitoring	Monitoring and evaluation of fish passage at recently constructed rock-ramp fishways in Fursden and Sandy Creeks, Pioneer River and Plane catchments	Monitoring and analysis of fish passage	Mackay Regional Council	2021
Glendon Creek fishway monitoring	Monitoring and evaluation of fish passage at recently constructed rock-ramp fishway at the Dalrymple Bay Coal Terminal	Monitoring and analysis of fish passage	Dalrymple Bay Coal Terminal	2021
Nitrogen application practice improvement in sugarcane	Monitoring and evaluation of water quality with new fertiliser management practices for sugarcane cropping in the Mackay region	Technical support, data analysis and reporting	Liquaforce	2021

