



Traditional Owner eDNA Training & Certification Program



Blending traditional knowledge with scientific data

EnviroDNA acknowledges the Traditional Custodians of Country throughout Australia and their connections to land, sea and community. We pay our respect to their Elders past and present and extend that respect to all Aboriginal and Torres Strait Islander peoples.

This Program provides Traditional Owners, as the waterway managers and environmental water holders on Country, with the skills to undertake environmental DNA (eDNA) water sampling on Country. eDNA technology is a culturally and ecologically sensitive, accurate and safe

method for surveying biodiversity on land and in waterways. EnviroDNA recognises the important role that eDNA has in advocating for biodiversity and biocultural surveys to be undertaken on Country by Traditional Owners.

Participants will gain valuable skills in eDNA biodiversity survey techniques and learn how to interpret eDNA data to help understand species distributions and inform management and decision making on Country. Participants will then be able to overlay traditional knowledge to the eDNA data, placing an invaluable cultural lens on scientific data.



How can eDNA be used to survey Country?

Traditional Owners will be equipped with the knowledge and skills to use eDNA to undertake biodiversity survey and monitoring programs on Country that help to:

- Establish **baseline biodiversity data** to understand the distribution of species and measure river and wetland health
- Conduct ongoing biodiversity monitoring to **detect change over time**, before and after disturbances (e.g., fire) and management interventions
- Include this monitoring tool within **Aboriginal Waterway Assessments** to inform management decisions, such as cultural flows, and ongoing monitoring

Training & Certification Program

We offer a Traditional Owner eDNA Training & Certification Program that provides Traditional Owners with the background, knowledge, and skills to undertake eDNA water sampling on Country and interpret eDNA data to learn about species distribution. This training program is tailored to suit each group's needs, including multi-day on Country field sessions and shorter, hybrid-online programs.

Part 1: Introduction to eDNA (in-person)

- Introduction to eDNA: Learn what eDNA is and how it can be used to detect species and understand biodiversity on Country
- Laboratory tour (if onsite): Meet our scientists and see where your samples will go and how they are analysed
- Introduction to eDNA water sampling training at a nearby waterway site: Learn the different sampling techniques, including manual and automated eDNA water sampling

Part 2: eDNA pilot study on Country

- 1 to 3 days sampling on Country with EnviroDNA staff support, including pilot study of ~50 samples.
- Knowledge sharing session, including traditional knowledge of the biodiversity expected on Country. All Indigenous cultural and intellectual property is legally protected and EnviroDNA will work with Traditional Owners prior to the

sampling on Country to develop an appropriate knowledge sharing approach for each program.

- On Country application of eDNA water sampling, including site selection and key considerations such as safety, hydrology, contamination etc.

Part 3: Results and knowledge sharing (online or in person)

- Provision of data and biodiversity survey report
- Knowledge sharing session to discuss eDNA pilot study results and connecting to on Country knowledge.
- Management application of eDNA: how eDNA data can be used and analysed to inform management and investment decisions.

Ongoing support and training

- Ongoing support from EnviroDNA staff
- Traditional Owner eDNA analysis discounts
- Yearly online refresher course

Advanced training options - eDNA data analysis

- Participants may want to take the next step in their understanding of eDNA with our advanced training for eDNA data analysis to provide the skills to undertake more detailed analysis and interpretation.



Our **vision:**

The most **comprehensive biodiversity data** in the hands of all **Traditional Owners** across Australia.



Connection

Facilitate connection to Country and meaningful engagement with an exciting and accessible ecological survey technique.



Leadership

Inspire Traditional Owners with new skills and confidence to lead innovative ecological surveys and decision-making on Country.



Empower

Place the power of eDNA biodiversity data, and the ability to generate it, in the hands of Traditional Owners.



Opportunity

Enable Traditional Owner eDNA survey skills to be accessed by industry, generating an employment opportunity and career path.



Program in-practice

The **five desired stages** for successful implementation of the EnviroDNA Traditional Owner eDNA Training & Certification Program:



EnviroDNA launched in 2016 as Australia's first dedicated eDNA service provider for industry. Today, we operate at the forefront of research and application to deliver ecological surveys and monitoring projects across the country. From purpose-built eDNA laboratories, EnviroDNA is committed to using this powerful technology to help users gather comprehensive biodiversity data.



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How does eDNA work?

eDNA is like a fingerprint. All organisms – including animals, plants, fungi and bacteria – leave fragments of their DNA in the environment. By extracting DNA from an environmental sample, such as water, soil or scat, we can find out what has been there without having to actually observe or capture the species.

There are two main ways that eDNA can be used, targeted species (**quantitative polymerase chain reaction - qPCR**) assessments and biodiversity (**metabarcoding**) assessments. The target species assessments amplify traces of DNA that a targeted species (native or invasive) has shed into the environment, and the biodiversity assessments identify all species within a selected taxonomic group that have left traces of DNA in an environmental sample.