



Invasive Species

Invasive species represent a particularly difficult challenge for conservation and environmental managers. They can compete, displace or even eat native species, often having large negative impacts on entire ecosystems. In Australia and New Zealand, invasive species have unfortunately led to the decline and extinction of numerous animal species over the last 200 years. Detection is critical for managing invasive species. We also know that the earlier you can detect an invasive species incursion, the more effective, efficient and simple control actions are likely to be.

How can EnviroDNA help?

Our eDNA technology is designed to give conservation and environmental managers the edge in pest surveillance. Our Species Detection services allow more effective detection of invasive species incursion events and monitoring of range expansions.

How we used eDNA to understand the distribution and abundance of common carp in the Wimmera River, Victoria

Common carp are a highly invasive species that can occur in very high abundance, causing significant damage to freshwater ecosystems and impacting native species. Due to the degradation of waterways through human activities such as water extraction and changes to surrounding land use, carp has slowly become the more prevalent freshwater fish in certain rivers. We used eDNA to investigate the distribution and abundance of carp in the Wimmera River in order to improve control efforts.

With help from Austral Research & Consulting, we first conducted paired sampling to determine whether eDNA could be used as a measure of abundance for carp. Our research revealed a significant correlation between the amount of DNA in our water samples and the number of carp captured by electrofishing. With this knowledge, we designed a systematic sampling regime along the lower Wimmera River to investigate movement of carp in relation to hydrological conditions, particularly flow and water temperature.

Results from this study identified areas of high carp abundance and environmental cues that triggered carp movements. This information was used to direct control efforts at the most effective times and areas, in order to have the biggest impact.

