



eDNA-KIT: A Web-Based Toolbox for Putting Environmental DNA into Practice

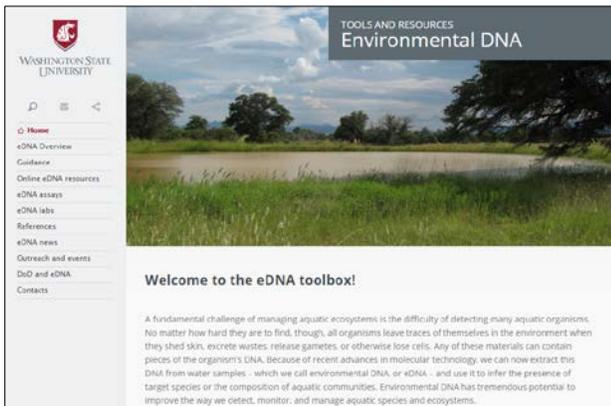
Project # 15-782

Background:

Environmental DNA (eDNA) is emerging as a powerful tool for producing reliable information about the presence and distribution of aquatic species, but transfer of the technology to practitioners has not kept pace with development of eDNA methods. Interest in using eDNA in monitoring programs has grown steeply each year. However, there are few resources available to provide information, guidance, and training about eDNA.

Objective:

The objective of this project is to create a web-based toolbox of eDNA resources (shown below) targeted at DoD and other practitioners who are considering using eDNA techniques to manage aquatic species.



Summary of Approach:

We built a user-friendly, one-stop resource for comprehensive information about eDNA technology and its use, with dedicated sections for current and potential DoD users of eDNA. Key components of the site are 1) a knowledge base that compiles existing and new information about eDNA technology onto a single point of access, and 2) guidance materials such as field and lab protocols and eDNA monitoring guidelines.

Benefit:

This project makes eDNA tools available and more useful to DoD managers, improving their ability make informed decisions about if, when, and how to best use eDNA methods to detect aquatic species. Increased access to

eDNA resources allows managers to make full use of the technology's benefits for effective management of aquatic species, potentially reducing constraints on military readiness training. To facilitate coordination and information exchange for military managers, a section of eDNA-KIT is dedicated to DoD-specific research and monitoring, with summaries of DoD eDNA projects.



Accomplishments:

We constructed a website (<https://labs.wsu.edu/edna/>) with a wide variety of eDNA resources. The knowledge base includes an introduction to eDNA technology as well as more technical details and FAQs; links to available webinars; demonstration videos and links to online videos about eDNA methods and projects; a list of all published eDNA assays; a dynamic, searchable database of eDNA references; and descriptions of eDNA projects on DoD lands. Guidance materials include all published field sampling protocols; laboratory protocols; guidelines for incorporating eDNA methods in aquatic monitoring; critical considerations for using eDNA; and a set of lessons learned. The site links to a Twitter feed (@eDNAresources) with updates about eDNA technology and projects.

Contact Information:

Katherine Strickler
Washington State University
P.O. Box 645825
Pullman, WA 99164-5825
Phone: 509-335-6435
Fax: 509-335-7862
Email: k.strickler@wsu.edu

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