



NFWF

National Fish and Wildlife Foundation
Special Project with the Natural Resources Conservation Service Conservation
Innovation Grant Program

Purpose: Create a toolkit for assessment and mitigation of agricultural operations to benefit coral reefs

Context: Innovative conservation practices to reduce sediment erosion and nutrient run off are integral components of sustainable agricultural industries. This is especially true in watersheds that drain into coral reef environments, where managers must implement targeted conservation actions in order to avoid the devastating effects of sediment, fertilizers, herbicides and pesticides transported onto coral reefs in unsustainable quantities. **The project's goal is to bring to scale a toolkit for resource managers and technical assistance providers that will improve performance and evaluation of mitigation activities on agricultural operations in coastal watersheds adjacent to coral reefs in a cost and time-effective manner.**

Toolkit

The toolkit will be comprised of:

- **Rapid Assessment Model:** Methodology on conducting a rapid assessment including mapping and prioritization of sources of threats in the watershed;
- **Threshold Levels Procedures:** Procedures for determining thresholds for sensitive systems like coral reefs and reduction targets for agricultural operations to stay within these thresholds;
- **Threat Reduction Targets:** Assess targets that must be reached and best conservation measures that most effectively and efficiently meet those targets; and,
- **Biomarker Analysis:** Evaluate the impact mitigation activities have on reducing threats in the watershed and on coral reefs.

This project seeks to implement the toolkit and test mitigation strategies in priority watersheds already identified by the US Coral Reef Task Force (USCRTF) as priorities for investment by jurisdictional and federal managers. Therefore, the execution of this project will increase the efficiency and effectiveness of those investments for years to come.

Project Objectives: The toolkit will enable resource managers to establish baselines, thresholds and reduction targets for land based sediment and nutrient sources in watersheds containing coral reef systems. Additional tools will assist in prioritizing potential mitigation activities and measure the impact of these activities on water quality and coral reef health.

This approach will serve to overcome three important barriers facing coastal resource managers: (1) increase accuracy and standardize the process of establishing baseline and threshold information for inclusion in watershed management plans; (2) improve protocol for choosing best conservation practices for landowners to implement; and (3) utilize tools to evaluate impact of mitigation measures in real time.

Specific objectives include:

1. Build a model for rapid assessments for watersheds with coral reefs. Coordinate and/or conduct baseline assessment data collection for benthic communities and water quality characteristics that

will assist in on-going efforts to identify threshold targets of LBSP in priority watersheds of deviating characteristics. Based on the results, create a model linking different characteristics within watersheds to expected results on coral reefs. This model will be incorporated into a rapid assessment protocol for local resource managers while developing watershed management plans.

2. Establish a cost-effective methodology for conducting a rapid assessment of a watershed and producing a watershed threats map that will assist in identifying and prioritizing specific source/geography combinations for mitigation.
3. Incorporate rapid assessment model and quantitative data of baselines and thresholds into watershed management plans in development for priority watersheds, as identified by the USCRTF.
3. Identify priority LBSP sources in 2 – 4 priority watersheds and implement mitigation activities to address these LBSP.
4. Test a new biomarker tool to scale for agricultural purposes. Evaluate the impact the mitigation activities on agricultural operations had in-stream and on coral reefs using the new bio-marker tool.
5. Train coastal resource managers on how to use the new toolkit which includes guidelines for rapid assessment, models for baseline and threshold determination, and calculation of mitigation of threat.