



## A Decade of Tribal Environmental Health Research: Results and Impacts From EPA's Extramural Grants and Fellowship Programs 2013 Tribal Synthesis Report Summary

*Message from the National Center for Environmental Research  
Director:*

*The Environmental Protection Agency (EPA) released a report this month titled **A Decade of Tribal Environmental Health Research: Results and Impacts from EPA's Extramural Grants and Fellowship Programs**, which highlights the accomplishments and impacts of more than a decade of supporting Tribal Environmental Health Research.*

*The report, available for download at [www.epa.gov/ncer/tribalresearch](http://www.epa.gov/ncer/tribalresearch), summarizes not only the results of this EPA-funded research for tribes across our nation, but also the future direction for the Agency's program to ensure that it continues forward in supporting the advancement of health protection while maintaining the tribal way of life.*

*American Indian and Alaska Native (AI/AN) communities have been tied inextricably to their environments for millennia. Because of their reliance on natural resources to maintain traditional diets, life ways, customs and languages, there is a unique need for tribal-focused research to identify the impacts of pollution, dietary exposures, cumulative risks and climate change, as well as to inform decisions to reduce health risks in these areas. EPA strives to support this research need and ensure the well being of tribal communities.*

*James H. Johnson, Jr., PhD*

*Director*

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### 2013 Tribal Synthesis

EPA established the Tribal Environmental Health Research Program in 2000 through the Science To Achieve Results (STAR) grants and fellowships programs. This report captures the methods and findings for all tribal research that this program supports. Since its inception, the program has funded 10 STAR grants for tribal environmental health research, many of which are conducted on tribal lands by researchers from tribal colleges and universities. This EPA-supported research has helped tribes understand and

manage toxic chemicals and other risks. The STAR graduate fellowship program (STAR Fellowship) supports master's and doctoral candidates in environmental studies. The report also captures tribal-related research conducted under other EPA-funded programs. The Greater Research Opportunities fellowship program supports both undergraduate studies and internships. The unique People, Prosperity and the Planet (P3) Student-Design Competition for Sustainability provides an opportunity to take classroom learning into the real world. The Small Business Innovation Research program provides incentive funding for small businesses advancing sustainable solutions.

EPA's STAR tribal research can be categorized by five themes:

- Cultural practices, language and traditional ecological knowledge.
- Subsistence foods and water resources.
- Community-based participatory research (CBPR) and community outreach and education.
- Risk assessment and incorporating sensitive populations.
- Impacts on regulations and management plans.

### Outcomes and Practical Applications

After more than a decade of funding research that addresses the unique needs of AI/AN communities, the program has yielded key data, tools, products, methods and knowledge. These help to better define and reduce the health risks faced by tribal populations, protect natural resources essential to cultural and spiritual practices, and support ecological knowledge and tribal practices for protecting and preserving the earth for future generations. Select outcomes and practical applications are described by theme below.

Each AI/AN community has its own unique set of **cultural practices, language and traditional ecological knowledge**.

Several STAR grants strive to support tribal citizens' cultural practices while reducing health risks. These projects also help to strengthen native language skills and increase culturally relevant communication of traditional ecological knowledge. For example, a library of resources in the Mohawk language was created for the Haudenosaunee Confederacy to enhance education about toxic substances and foster the practical empowerment of the community to protect the health of its citizens while practicing traditional subsistence lifeways.



AI/AN communities often follow traditional diets that include an abundance of freshwater fish and seafood. Water, considered sacred, plays an important role in tribal cultural and spiritual practices. Several STAR grants focused on reducing the health effects associated with the consumption of contaminated traditional **subsistence foods and water resources**. These research projects have resulted in fish advisory maps for inland lakes in the Midwest that allow tribal citizens to pursue their traditional subsistence fishing practices while reducing their risk of mercury exposure.



The Makah Nation used STAR data to support its claim that its citizens had significantly higher contaminant exposures from locally caught fish than had been determined previously via contaminant-exposure models. This is one example of how tribal research has led to the practical use of data on contaminant levels to help community members protect their health while following their traditional diets.

Indigenous populations sometimes have experienced trauma as a result of historical unethical research imposed on them. Using CBPR in tribal research ensures that AI/AN populations have a voice. **CBPR and community outreach and education** continue as longstanding, important components of STAR grants and fellowships funded under the Tribal Environmental Health Research Program. Most of the grants use community outreach and tribal consultations to obtain input that guides the research projects. Tribal citizens learn about the results of the grants through community presentations, training



and workshops, books, DVDs, maps, radio interviews and other means. Based on STAR results, researchers produced a traditional food book, coloring book and documentary that promote safe Swinomish fish and shellfish consumption.

Tribal citizens experience unique risks because of their traditional lifestyles and use of natural resources. As a result, risk assessments and exposure scenarios must be tailored to the distinct practices and exposures of each AI/AN community. There have been several notable outcomes of the STAR research efforts that have focused on **risk assessment and incorporating sensitive populations**. For example, a *Traditional Tribal Subsistence Exposure Scenario and Risk Assessment Guidance Manual* was published to help tribal communities identify their specific exposure risks. Using this manual helps tribes to avoid or reduce exposures and better protect their health.



Results from STAR grants and fellowships have influenced state and tribal **regulations and management plans**. For example, the states of Washington and Oregon have used STAR data to reexamine and revise their state water quality standards. These revisions offer greater protection of tribal populations whose cultural practices and traditional lifeways could result in higher exposures to water contaminants. The Cherokee Nation used results from research by a STAR fellow to design its Tribal Integrated Resource Management Plan for natural resource planning and management on Cherokee lands.



## Future Directions

Future STAR tribal research will explore new strategies, methods and tools to assess environmental health exposures among tribal populations. The program also will identify other research opportunities for advancing health protection while maintaining traditional tribal lifeways. The program released its latest Request for Applications (RFA), "Science for Sustainable and Healthy Tribes," in February 2013 using tribal input about current tribal environmental challenges to help determine the RFA's focus. STAR Graduate Fellowship solicitations now include a topic focused specifically on native populations. The goal of this category is to protect the environment and these communities, with a specific focus on

related environmental health, sustainability and pollution prevention/remediation strategies and issues.

As it has done for more than a decade, EPA's Tribal Environmental Health Research Program will continue to engage and collaborate with AI/AN communities and partners to support them in maintaining their long-standing, intricate relationships with the natural environment, even in the face of the myriad stressors threatening their health, wellness and lifeways.