

Bureau of Indian Affairs (BIA) and Federal-Wide Support for Tribal Resilience and Cultural Resources Preservation

Presented by: Margaret T. Herzog, PE, PMP, PhD

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BIA Tribal Resilience Program (TRP)

(just Google: "BIA Resilience")

<https://www.bia.gov/bia/ots/tribal-resilience-program>

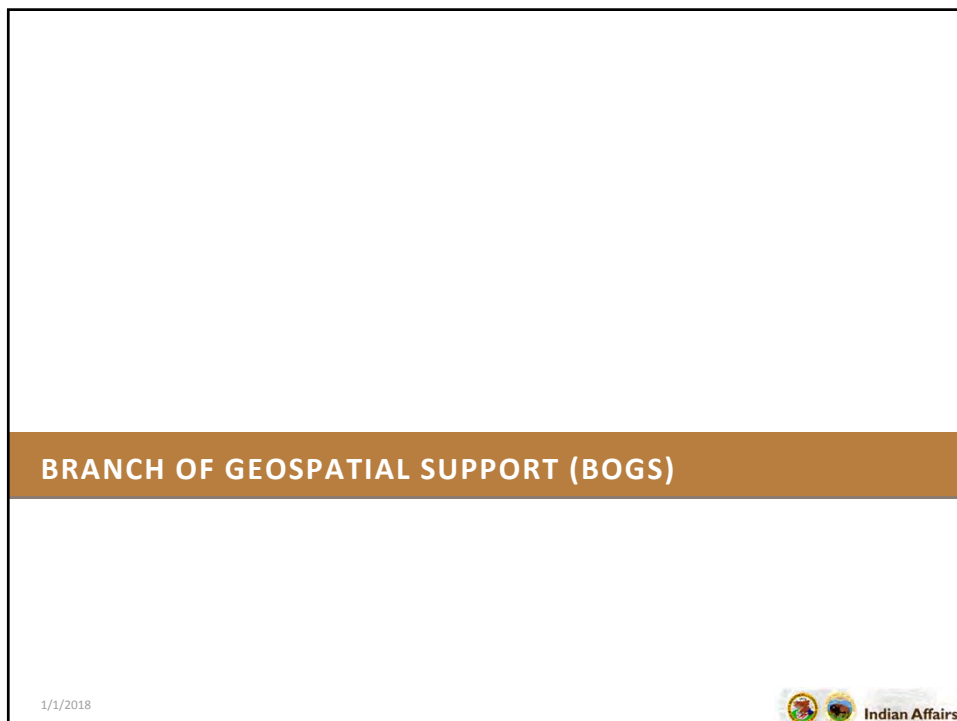
1/1/2018



Topics Addressed

- BIA Branch of Geospatial Support (BOGS)
- BIA Tribal Resilience Funding and Tools
- Tribal Nations Community of Practice in Geoplatform.gov
- Opportunities to Review / Contribute to the National Climate Assessment
- Indian Lands Comprehensive AIAN-LARs / TAAMS Update for Census 2020





<p><u>Geospatial Support</u></p> <p>Products, News and Events</p> <p>Background and History</p> <p>Geospatial FAQs</p>	<p>Branch of Geospatial Support</p> <p>The Branch of Geospatial Support, which is under the Office of Trust Services, Division of Land Titles and Records, provides Geographic Information Systems (GIS) software, training, and system support for the management of natural resources on Indian lands, such as irrigation flood plain analysis, forest harvesting, wildland fire analysis, oil and gas management, and other economic analyses. This is accomplished by providing expert technical support in geospatial data technologies to Indian Affairs (IA) and tribal government GIS employees. The Branch of Geospatial Support is the sole technical support office to IA and all tribes for GIS as a part of the Department of Interior (DOI)-Bureau of Indian Affairs (BIA) ESRI® Enterprise License Agreement (ELA). The support activities include software distribution (ESRI® ArcGIS for Desktop, Portal, and Server), customer license accounting, geospatial and technical software support, remote sensing, and GIS training and workshop sessions.</p>
<p>BRANCH OF GEOSPATIAL SUPPORT (BOGS) https://www.bia.gov/gis</p>	
<p>Geospatial Support News</p> <p>Geospatial Training</p> <p>Enterprise License Agreement (ELA)</p> <p>ELA Product List</p> <p>How to Obtain ArcGIS Software</p> <p>Products, News, and Events</p> <p>Map of Indian Lands in the United States</p>	<p>BIA BOGS completes Land Area Representations (LARs) update in 2018 to prepare for 2020 Census</p> <p>Background and History</p> <p>Geospatial FAQs</p>

BRANCH OF GEOSPATIAL SUPPORT**SOFTWARE ELA AND HELP DESK SOFTWARE SUPPORT**BOGS ENTERPRISE LICENSING AGREEMENT (ELA) LISTINGS AT <https://www.bia.gov/gis>Contact help desk: Geospatial@bia.gov 877-293-9494

ArcGIS Desktop w ArcGIS Pro – multiple layouts, faster, 3D

ArcGIS Server

ArcGIS Portal – private AGOL on your own server

ArcGIS for Windows Mobile

Digital Globe – high quality imagery for federal users

ESRI e-learning self-paced online courses

Individual ArcOnline account

For Other ESRI Products –Rod Schardein, US DOI-BIA Sales Representative
rschardein@esri.com or 800.447.9778, ext. 1-1664AGOL organizational account, Drone2Map, ArcPad, etc.
(TribalGIS.com also has organizational AGOL account for members)**BRANCH OF GEOSPATIAL SUPPORT (BOGS)****GIS COURSES AND TRAINING ON ARCMAP, RS, CARTOGRAPHY AND ARCPAD:****MOBILE DATA COLLECTION AND FIELD APP – LICENSE THROUGH ESRI NOT BOGS ELA**

Beg.	Seminole Tribe of Florida Hollywood, FL	Eastern Region	Principles of GIS	Jan 8-11, 2018
Beg.	Twenty-Nine Palms Band of Mission Indians Coachella, CA	Pacific Region	Principles of GIS	Jan 16-19, 2018
Beg.	Viejas Band Of Kumeyaay Indians Alpine, CA	Pacific Region	Principles of GIS	Jan 22-25, 2018
Beg.	Lakewood Training Facility Lakewood, CO		Principles of GIS	Jan 22-25, 2018
Beg.	Lakewood Training Facility Lakewood, CO		Principles of GIS	Jan 29-Feb 1, 2018
Int.	Lakewood Training Facility Lakewood, CO		Introduction to Cartography*	Feb 5-8, 2018
Beg.	BIA Eastern Region Washington, DC	Eastern Region	Introduction to GPS	Feb 12-13, 2018
Beg.	Lakewood Training Facility Lakewood, CO		Introduction to GPS	Feb 27-28, 2018
Beg.	Owens Valley Indian Water Commission Bishop, CA	Pacific Region	Principles of GIS	Mar 5-8, 2018
Beg.	Owens Valley Indian Water Commission Bishop, CA	Pacific Region	Introduction to GPS	Mar 12-13, 2018
Int.	Seminole Tribe of Florida Hollywood, FL	Eastern Region	Introduction to Cartography*	Mar 26-29, 2018



BIA BRANCH OF GEOSPATIAL SUPPORT – DIGITALGLOBE IMAGERY ACCOUNTS
CONTACT BOGS TO SIGNUP: GEOSPATIAL@BIA.GOV , 877-293-9494

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DAM BREAK ANIMATION EXAMPLE
CONSIDER HOW MIGHT AFFECT CULTURAL RESOURCES

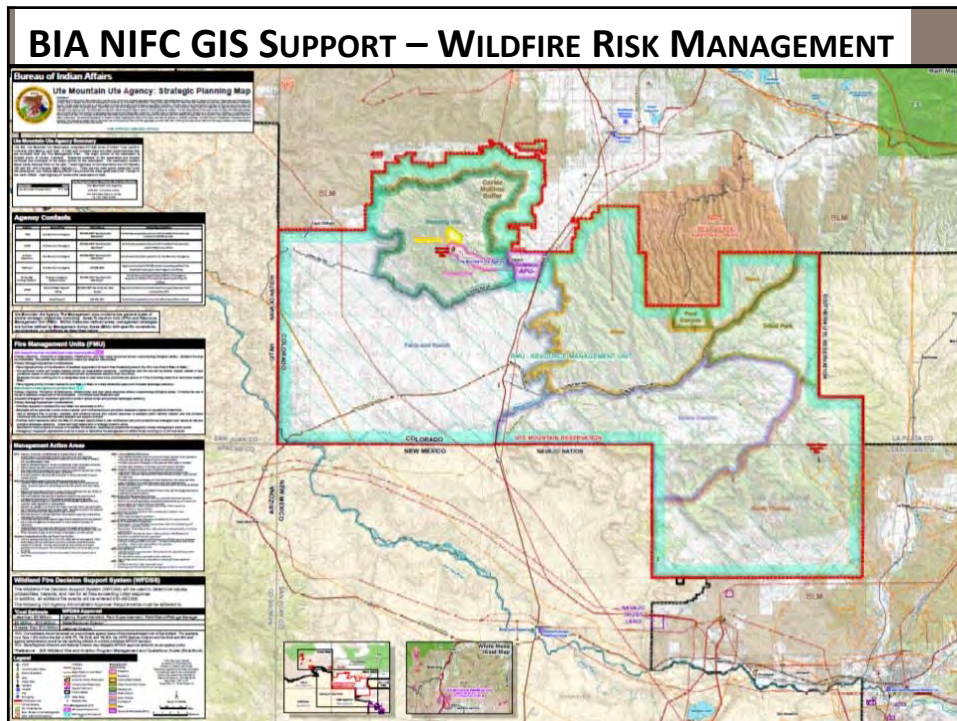


Safety of Dams Branch

Legend
Flood Depth:
0.25 - 0.5 feet
0.5 - 1 foot
1 - 2 feet
2 - 3 feet
3 - 6 feet

 **Indian Affairs**

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TRIBAL UAS USERS GROUP

Tribal Interest Group for UAS discussed:

- Current Tribal UAS operations and support functions for those present
- Opportunities to share best practices and lessons learned in this domain
- Areas of interest from the Tribal communities and possible common missions
- STEM opportunities and paths forward

To Join: Contact John "JC" Coffey

Executive Director, Unmanned Systems, Cherokee Nation Technologies
 john.j.coffey@noaa.gov, O: 301-734-1104, C: 904-923-1709

- <http://cherokee-cnt.com/products/services/Pages/Unmanned-Aircraft-Systems.aspx>
- <https://geography.wr.usgs.gov/InnovationCenter/UASworkshop.html>

Interested in Setting up a BIA or Tribal UAS program?

Contact "Dave" Underwood:

ewing.underwood@bia.gov, (505) 563-3103

<https://www.bia.gov/nifc/aviation/index.htm>



HOW TO DEVELOP AN UNMANNED AIRCRAFT SYSTEMS PROGRAM

Capability

- Get the approvals to start an aviation capability
- Move money through an IAA or FID for UAS procurement
- Identify people to train (take the Part 107, IAT online classes, A-450 Basic Operator)

Planning

- Plan your project area – make sure you can fly in those areas (COA, MOA, Part 107)
- Choose the UAS (3DR Solo)
- Sensor needed (mounts required)
- Get Range Approvals
- Project Aviation Safety Plan



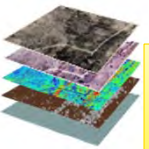

Logistics

- Travel
- UAS Hardware Preparation
- Mission Flight Planning
- Ground data



Data

- Acquire Data
- Process Data
- Manage Data
- Archive & Disseminate Data

<https://uas.usgs.gov>

Jeff Sloan
 Team Lead & Data Analysis
 Phone: 303-236-1308
 Email: jsloan@usgs.gov

TRIBAL RESILIENCE PROGRAM FUNDING AND RESOURCES

1/1/2018



WHAT DOES RESILIENCE MEAN TO YOU?

Different meanings in different context

capacity to **bounce back** from an unexpected shock

❖ emergency management – report where roads blocked

prepare for, withstand, recover and adapt to **threats**

❖ environment – where invasives moving in, vegetative loss

minimize damage to social well-being /economy /ecosystems

❖ health – where health clinic stats show most respiratory illness

incorporate **multiple lines of defense** against future risks

❖ water management – how protect water supply and quality?

not crossing thresholds beyond community ability to respond

❖ infrastructure – rural area escape routes, grid access, cooling



Bureau of Indian Affairs

TRIBAL RESILIENCE PROGRAM HOMEPAGE

✓ Select Tool

✓ Select Topic

✓ Tribal Dashboards


✓ Agency Links

✓ Intertribal Links

✓ Climate Funding

✓ Liaisons

✓ Feedback / Subscribe



<https://www.bia.gov/bia/ots/tribal-resilience-program/>

GOOGLE: "BIA RESILIENCE"
or Visit bia.gov, Search: Resilience

Tools	Topics
<ul style="list-style-type: none"> TRP Brochure (Youth) Presentations Tribal Resource Guide Awards Map Tribal Topic in Toolkit Tribal Maps at Data.gov 	<ul style="list-style-type: none"> FY16 Awards Regional Liaisons Youth Quick Links Past Awards Contact Us

FY 2016 TRIBAL RESILIENCE PROGRAM AWARDS

Adaptation & Ocean/Coastal Planning, Travel Support, Youth Funding, and Capacity Building

- FY16 BIA TCRP Awards Summary (pdf)
- Indian Affairs FY16 BIA TCRP Awards Press Release (pdf)

Awards Announced 8/24/16: The Bureau of Indian Affairs announced **funding of more than \$8.6M** to federally-recognized Tribes and Alaska Native communities for tribal adaptation and capacity building, ocean and coastal management planning, and youth opportunities. Award/no-award

Tribal Resilience

Liaisons

Resource Guide

Youth

Presentations

News



The graphic features the BIA logo and the U.S. Department of the Interior seal at the top. Below them is the title "Indian Affairs". The main content is divided into three sections: "FUNDING" with a map of the United States showing funding levels; "Tools" with a central image of a desert landscape and icons for various tools; and "Support" with a map of Alaska and a "Contact Us / Provide Feedback" button. The text "BIA TRIBAL RESILIENCE PROGRAM" is prominently displayed in the center, followed by "National Program Overview – Funding, Tools, Resources". Below this, it says "GOOGLE: 'BIA RESILIENCE' or Visit bia.gov, Search: Resilience". Further down, it states "For direct geospatial data acquisition, mapping or analysis support - contact: Margaret Herzog, PE, PMP, PhD – IT/GIS Systems / Services" and provides the email "Margaret.herzog@bia.gov" or the BIA TRP feedback form. The BIA logo is in the bottom right corner.

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FUNDING **Tools** **Support**

BIA TRIBAL RESILIENCE PROGRAM
National Program Overview – Funding, Tools, Resources

GOOGLE: "BIA RESILIENCE" or Visit bia.gov, Search: Resilience

For direct geospatial data acquisition, mapping or analysis support -
contact: Margaret Herzog, PE, PMP, PhD – IT/GIS Systems / Services
Margaret.herzog@bia.gov or use the BIA TRP feedback form

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FY17/FY18 RESILIENCE FUNDING
(GOOGLE: "BIA RESILIENCE" OR VISIT BIA.GOV, SEARCH: "RESILIENCE")

Join Resilience News (signup today!)
for anticipated, upcoming resilience funding alert

Attend the orientation workshop

- Cat 1 – Regional Training & Workshops
- Cat 2 – Adaptation Planning / Vulnerability Assessment
- Cat 3 – Travel Support for Resilience and Adaptation Training
- Cat 4 – Oceans and Coastal
- Cat 5 – Travel Support to Participate in Regional Planning Bodies (Coasts)
- Cat 6 – Capacity Building (PT support to gather community input to better enable the Tribe / Group to develop a Cat 2 adaptation proposal in the future)

Sponsored by BIA Tribal Resilience Program:
<https://www.bia.gov/bia/ots/tribal-resilience-program/>

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BIA TRP FACILITATES FEDERAL-WIDE TRIBAL SUPPORT SYSTEMS (TRIBAL NATIONS IN DATA.GOV AND TOOLKIT.GOV)

<http://www.data.gov/climate/tribal-nations>



<http://toolkit.climate.gov/tribal>

Tribal Resilience Resource Guide links back to BOTH through *Tribal Resilience Dashboards* (next slide)

<http://toolkit.climate.gov/topics/tribal-nations>

Key points:

- Climate change impacts are projected to be especially severe for many of the 567 federally recognized tribes in the United States that depend on traditional places, foods, and lifestyles.

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Tribal Resilience Fact Sheet

Your *dashboard* to Resources!

<https://biampaps.doi.gov/tribalresilience/resourceguide/tribes/tribalfactsheet.html?trcp=NavajoN>

Agency Support

- Orange - Agency Resources
- Blue – Regional Agency Link

Navajo Nation, Arizona, New Mexico & Utah Fact Sheet

Names (Federal Register): Navajo Nation, Arizona, New Mexico & Utah

Contact Us / Provide Feedback

Request Personal Tour!

Federal Links: Select the Agency Acronym (blue link) for an Agency Fact Sheet and the orange link to its right. For more information, hover over a link for agency or program details before making a selection.

<p>Tribal Official Website (or group site)</p> <p>CSC: Southwest</p> <p>USDA CLIMATE HUB: Southwest</p> <p>EPA: R9 FEMA: R9</p>	<p>BIA Region: Navajo Regional Fact Sheet</p> <p>Navajo Regional Office</p> <p>LCC: Southern Rockies</p> <p>USDA NRCIS/Locator USDA USFS: Southwestern</p> <p>DOT/FHWA: Mountain West</p>	<p>DOE: AZ</p> <p>FWIS: Southwest</p> <p>NOAA: Region RISA: CLIMAS</p> <p>HUD: Southwest</p>
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Awards

- FY11 Climate Adaptation Planning
- FY15 Management Internships
- FY15 Travel (Climate)
- FY15 Youth Engagement
- FY16 Climate Adaptation Planning
- FY16 Travel (Climate)
- BIA TCRP FY11-16 Awards Map
- More Climate Funding Opportunities

Documents

- Connectivity of Habitats on Navajo Nation Lands
- Considerations for Climate Change and Variability Adaptation on the Navajo Nation
- NN CC Vulnerability Assessment for Priority Wildlife Species

Examples

- CRT Case Study: Navajo Nation: Hotter, Drier Climate Puts Sand Dunes on the Move
- ITEP TCC Profile: Dune Study Offers Clues to Climate Change
- Other Tribal Nations Examples

Groups

- Dine College
- Native American Fish and Wildlife Association (NAFWA)
- Navajo Technical College

Tools

- Tribal Drought Information for Monitoring, Assessment, and Planning (DRI MAP)
- CRT Tool: Guidelines for Considering Traditional Knowledge in Climate Change Initiatives
- CRT Tool: Tribal Climate Change Guide
- CRT Tool: Tribal Climate Change Adaptation Planning Toolkit
- Other Tribal Nations Examples

Data & Maps

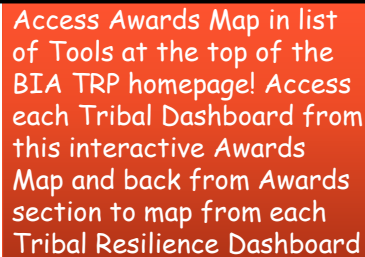
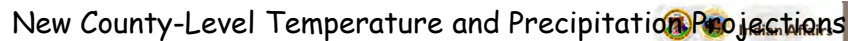
- Conservation Planning Atlas
- EPA Climate Impacts by State for: AZ
- HUC8: 15020013 - Polacca Wash Resource Links
- NN Zoo: Facts on Desert Bighorn Sheep and Other Species
- NOAA NCEI AZ: State Climate Summary
- Toolkit Climate Explorer 2.0: Projected Temperature & Precip - Apache County


Share Results!

Climate Data & Map Support Links!

LCC Atlas

Find Regional Partners & TCUs!



 **Indian Affairs** GETTING THE MOST OUT OF THE
TRIBAL NATIONS IN THE U.S. RESILIENCE TOOLKIT
 • **Tools and Stories** <https://toolkit.climate.gov/topics/tribal-nations>

Tribal Nations
 Climate change increasingly impacts places, foods, and lifestyles of American Indians. In Alaska—home to 40 percent of federally recognized tribes—reduced sea ice and warming temperatures threaten traditional livelihoods and critical infrastructure.

Key points:

- Climate change impacts are projected to be especially severe for many of the 567 federally recognized tribes in the United States that depend on traditional places, foods, and lifestyles.
- Observed and future impacts from climate change threaten indigenous communities' access to traditional foods such as fish, game, and wild and cultivated crops, which have provided sustenance as well as cultural, economic, medicinal, and community health for generations.
- Of the 567 federally recognized tribes in the United States, 40 percent (229 tribes) live in Alaska Native communities. The rapid pace of rising temperatures, melting sea ice and glaciers, and thawing permafrost in Alaska is having a significant negative impact on critical infrastructure and traditional livelihoods in the state.
- Some native coastal communities are being forced to relocate to higher ground after experiencing more extreme storm surges, flooding, and sea level rise, which can impact cultural integrity and access to vital resources.
- In building climate resilience, sovereign Tribal Nations often work with a variety of partners in innovative ways to integrate traditional knowledges with technology tools and diverse research methods to effectively address climate change and related impacts in a culturally appropriate community context.

Adapted from the Tribal National Climate Assessment

U.S. Climate Resilience Toolkit
 Steps to Resilience Case Studies Tools Expertise Regions Topics Search

Tribal Nations
 Assessment and Planning
 Adaptation
 Mitigation
 Disaster Risk Reduction
 Relocation
 Capacity Building

Indian Affairs

5-Step Adaptation Workflow from the U.S. Climate Resilience Toolkit

Step 1: Identify the Problem

➤ Implement plan & monitor progress toward your goals

Step 2: Assess your vulnerability

➤ Adjust your plan as necessary and iterate as often as needed

Step 3: Identify options to build resilience

Step 4: Evaluate the risk and choose the best option

➤ **Share your story**; keep in mind failures and setbacks are also useful for others to learn

Step 5: Implement – Take Action!

<https://toolkit.climate.gov/#steps>



Tribal Nations Taking Action Cases

Taking Action [Clear Filters](#) [Filter by climate threat/stressor: ▼](#) [Filter by parent topic: ▼](#) [Filter by steps to resilience: ▼](#) [Filter by region: ▼](#)

Communities and businesses are taking action to reduce their vulnerability to climate-related impacts and to build resilience to extreme events. The stories below illustrate the application of the process and tools featured in this Toolkit. Browse the stories, or filter by topic, step to resilience, and/or region in the boxes above. To expand your results, click the Clear Filters link.



Yukon Delta Villages Document Baseline Environmental Data
Students and community residents of four remote Alaskan villages measure environmental data to identify their climate vulnerabilities.
[Read more >](#)



Looking to the Future on Alaska's North Slope
As ice retreats and energy resources along Alaska's North Slope become more accessible, diverse stakeholders consider potential futures and develop a science-informed view of the implications of development in the region.
[Read more >](#)



Quinalt Indian Nation Plans for Village Relocation
As the threats of tsunami and sea level rise are joined by real and potential climate impacts, the Quinalt community looks to move the lower village of Taholah to higher ground.
[Read more >](#)



Relocating Kivalina
Rising seas and coastal erosion are eating away at the barrier island on which the Alaska Native Village of Kivalina rests. Residents and others are making concerted efforts to move the community to safety.
[Read more >](#)



Navajo Nation: Hotter, Drier



Preparing to Respond to Oil



Suquamish Build Resilience



Confederated Salish and

Case Studies of Resilience in Action!

Nationwide, any Tribe or Tribal Group can share to encourage others!!

Six Tribal Nations Subtopics Strategies for Building Climate Resilience

<http://toolkit.climate.gov/topics/tribal-nations>

1. [Assessment and Planning](#)
2. [Adaptation](#)
3. [Mitigation](#)
4. [Disaster Risk Reduction](#)
5. [Relocation](#)
6. [Capacity Building](#)
7. [TRIBAL HEALTH](#)
(new topic under consideration)

**Jump from
Tribal Dashboard
to Tribal Nations
by selecting an
Example or Tool!**

<http://toolkit.climate.gov/tribal/>
Tribal Climate Resilience
Resource Guide

Organizes [Tools](#) and [Taking Action Stories of Resilience](#)

Arctic & Tribal Nations Theme: Data

Tribal Nations Data

Indian Lands datasets are difficult to understand. Other data sharing questions.

Tribal Nations Data

[BIA Indian Lands Dataset \(Indian Land Areas Judicially Established\)](#)

Generally, climate data by themes States, except for differences in data resources:

- [Arctic Theme](#) – Related data, to 567 federally recognized tribes
- [Coastal Flooding Theme](#) – Related to other communities living along the coast associated with growing storm
- [Ecosystem Vulnerability](#) – Related to integrity and stability of ecosystems which Tribal Nations tradition

Organizes climate data by theme for easy access
<https://www.data.gov/climate/tribal-nations/data-page>

Tribal Nations Theme: Map Gallery

Tribal Nations Maps

<https://www.data.gov/climate/tribal-nations/tribal-nations-maps>

The Tribal Nations Map Gallery includes printable PDF wall-map versions (24x36) of the Indian and Ceded Lands Web Services found in the data tab.

The Map Gallery also includes interactive maps from federal partners, intertribal groups, and a tribal climate map showcase of example work products to inform climate resilience efforts of tribes, Alaska Natives, and other diverse communities nationwide.

Interactive data access and printable maps
 Can add region-specific climate maps here or keep private!

BIA TRP RESILIENCE GIS SERVICES: DATA, MAPS, & ANALYSIS

- ✓ Sign-up Today! or use feedback form or email me @ Margaret.Herzog@bia.gov
- ✓ Maps to support funding or resilience efforts
- ✓ Help you Leverage you Tribal Dashboard to obtain federal-wide support
- ✓ Integrate into resilient solution
- ✓ Use to support others with same issue



**TRIBAL NATIONS COMMUNITY OF PRACTICE AT
GEOPLATFORM.GOV**

1/1/2018



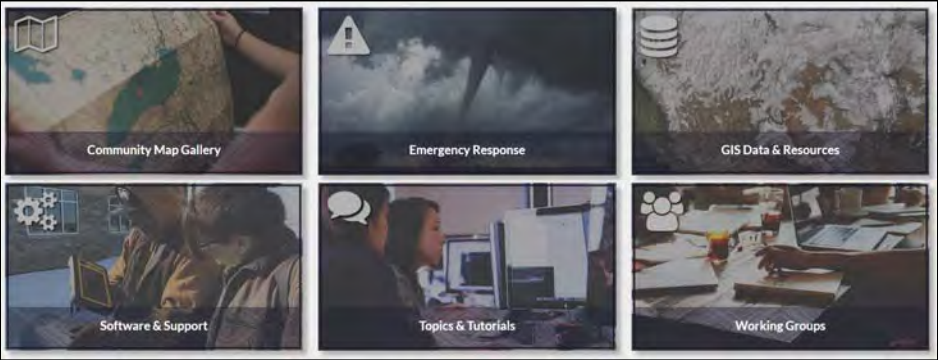


Demo site at:
<https://sit-tribalnations.geoplatform.us/>

TRIBAL NATIONS COMMUNITY OF PRACTICE @ GEOPLATFORM.GOV

BIA Branch of Geospatial Support (BOGS) - <https://www.bia.gov/gis>
 TN@GP is developed in partnership with federal-wide GIS programs and the
BIA Tribal Resilience Program (TRP)
<https://www.bia.gov/bia/ots/tribal-resilience-program>

1/1/2018 29 




TRIBAL NATIONS COMMUNITY OF PRACTICE – IN DEVELOPMENT

<https://sit-tribalnations.geoplatform.us/>

Please SIGN-UP! ↑ Visit the sandbox demo!

Sign-up sheet being sent around allows you to **join the Tribal Advisory**,
 Join one of the **working groups** in planning for forestry, floods, and/or shifting species,
 Or receive email alerts of progress including more ways to participate...

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Introducing the platform... [Geoplatform.gov](https://geoplatform.gov)

Featured	Explore Data	About
Release Overview	GeoPlatform ArcGIS Organization	About
Map Collaboration	Search Catalog	GeoPlatform
ArcGIS Online Support	Search Marketplace	Help
Cloud Hosting Services	Resources	FAQ
GeoPlatform on YouTube		Glossary of Terms
	Apps & Services	Contact Us
Get Involved	Map Viewer	Style Guide
Social Experience	Map Manager	
Share GeoSpatial Resources	Marketplace Preview	
Data Acquisition Services	Performance Dashboard	
Communities	FGDC Service Status Checker	
		Policies & Notices
		Data Policy
		Privacy Policy
		Accessibility
		News
		GIRA- Geospatial Interoperability Reference Architecture

Indian Affairs

GeoPlatform Dataset Search

1691 results 25 per page 1 - 25

Search Datasets

tribal

Enter keywords and press 'Enter'

Surround phrases with quotations ("")

Search by geography

United States of America

EPA Facility Registry Service (FRS): Wastewater Treatment Plants

U.S. Environmental Protection Agency

This GIS dataset contains data on wastewater treatment plants, based on EPA's Facility Registry Service (FRS), EPA's Integrated Compliance Information System (ICIS) and other datasets.

zip EARREST HTML HTML Import

Protected Areas Database of the United States (PAD-US)

U.S. Geological Survey, Department of the Interior

The USGS Protected Areas Database of the United States (PAD-US) is the nation's inventory of protected areas, including public open space and voluntarily provided, private protected areas, identified as an A-16 National

The file download in a zip format The file download in a zip format The file download in a zip format LAST NEXT Import + 27 more

FEDERATED, FEDERAL-WIDE DATA SEARCH TOOLS @ GP!

SUPPLEMENTS DATA.GOV:

ASSISTS TRIBES IN GETTING TO GEOSPATIAL DATA RESOURCES

<https://ckan.geoplatform.gov/#?q=tribal>

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GeoPlatform

ArcGIS Online Support

GeoPlatform integrates with ArcGIS in three primary ways:

- Users have complete and seamless access to the [GeoPlatform ArcGIS organization](#)
- ArcGIS data can be integrated with GeoPlatform through web services
- Maps built with ArcGIS Online can be organized and shared through GeoPlatform map galleries

ARCONLINE FOR GEOPLATFORM COLLABORATIVE MAPPING

SETUP THROUGH BIA BOGS HELP DESK: GEOSPATIAL@BIA.GOV
HELP DESK ALSO INCLUDES BIA ESRI ELA SOFTWARE & TRAINING
(EVEN IF YOU HAVE OTHER AGOL ACCOUNT, AGOL @ GP
MAY PROVIDE ADDED FEDERAL-WIDE SUPPORT & COLLABORATION)

1/1/2018 **For more support: <https://www.bia.gov/gis>**  Indian Affairs

 Community Map Gallery	 Emergency Response	 GIS Data & Resources
 Software & Support	 Topics & Tutorials	 Working Groups

TRIBAL NATIONS COMMUNITY OF PRACTICE – IN DEVELOPMENT

<https://sit-tribalnations.geoplatform.us/>

SIX SECTIONS UNDER DEVELOPMENT – Please sign-up to suggest improvements...

- Community Map Gallery
- Emergency Response
- Software & Support
- Working Groups
- GIS Data & Resources
- Topics & Tutorials

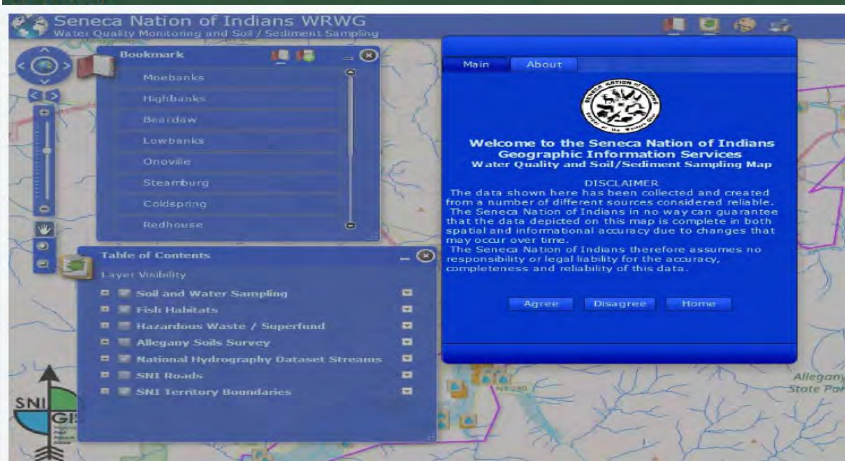
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TN@GP Sandbox - Main sections built-out so far...

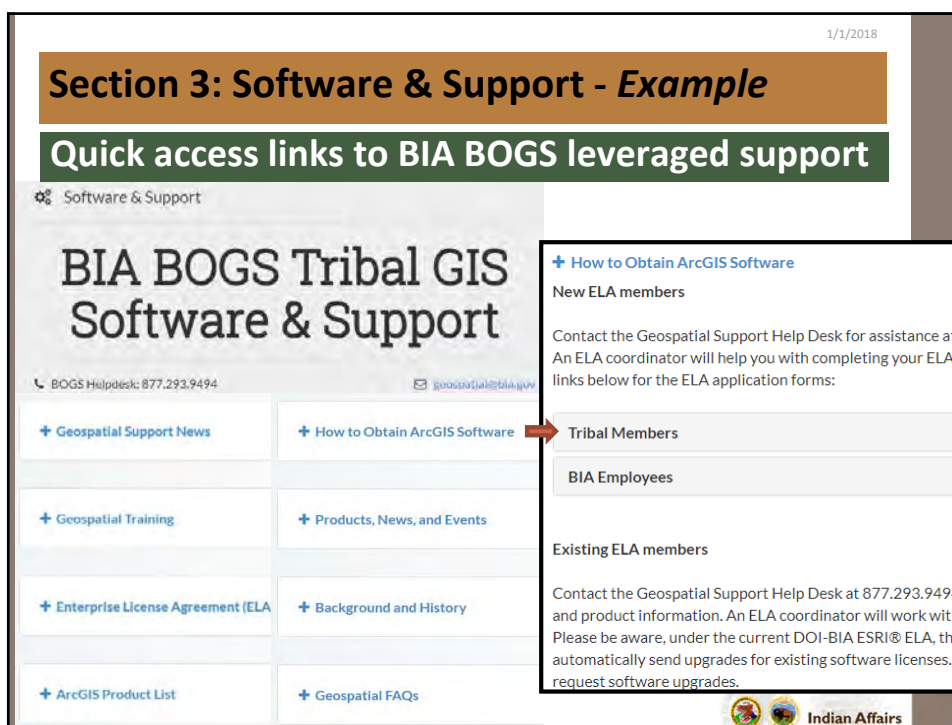
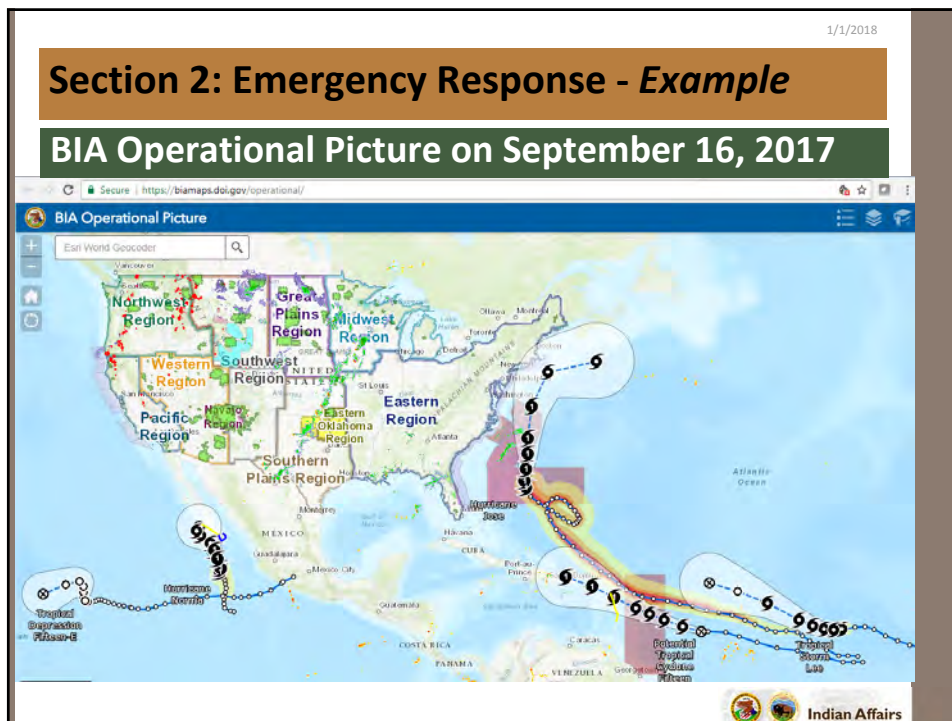
- **Community Map Gallery**
 - ✓ Examples from Tribes, Agencies, BOGS, & Intertribal Groups
- **Emergency Response**
 - ✓ Nationwide real-time natural disasters and regional support
- **Software & Support**
 - ✓ Quick access to BIA BOGS help desk support, training, & tools
- **Working Groups**
 - ✓ Collaborative tools for floods, forests, & shifting species
- **GIS Data & Resources**
 - ✓ BOGS, Tribal Resilience, Imagery, Base mapping for Tribes
- **Topics & Tutorials**
 - ✓ Topical support, ArcPy webinars, ESRI online training links

Section 1: Community Map Gallery - Example

Seneca Nation of Indians Water Quality Monitoring and Soil / Sediment Sampling (WRWG)




This Seneca Nation of Indians (SNI) Water Quality Monitoring and Soil / Sediment Sampling (WRWG) application was created to coordinate data management for the Tribe and its federal and local partners being used in a variety of projects. SNI GIS has also develop a number of related story maps depicting restoration project progress that can be accessed from its GIS homepage gallery at: <https://sni.org/departments/gis-department/>




1/1/2018

Section 4: Working Groups - *Example*


Tribal Wildfire / Black Earth Working Group

 Working Groups

Tribal Wildfire / Black Earth Working Group



The purpose of the Tribal Wildfire / Black Earth Working Group is to establish best practices for forest management to reduce the risk and devastation of wildfires, while commercializing new products and methods to build Tribal community capacity through the judicious development and innovative use of forest products like biochar, wood pellets, torrefied biomass, wood mulch, and other soil amendments and fuels.

 **Waste to Wisdom:**
Life Cycle Assessment and Economics of Torrefied Biomass
Source: U.S. Dept. of Energy/Indian Affairs/Climate Resilience

[View this Story](#)

Another objective may be establishing scientific acceptance of indigenous methods of prescribed burns to extend beyond limited tribal reservation boundaries to better preserve the species and reserved rights across forested lands, especially those federal forests which border reservations, as well as state and local preserves and private forests.

The Karuk's Innate Relationship with Fire: Adapting to Climate Change on the Klamath

Members of the Karuk Tribe in northern California maintain that the age-old tradition of prescribed burning holds the answer to climate adaptation planning in the Klamath River range.

Source: U.S. Climate Resilience Toolkit

[View this Story](#)

Sudden Oak Death

This disease is killing California trees by the millions, but scientists urge against giving up

Source: Washington Post

[View this Story](#)

1/1/2018

Section 5: GIS Data & Resources - *Example*

Imagery & Elevation Resources

USAF: EagleVision (EVR2EST)

Primary Use: Disaster Analysis

The U.S. Air Force (USAF) Eagle Vision system was developed and fielded to process commercial space-based imagery and RADAR products. The EVR2EST initiative operationalizes the rapid ingest of Eagle Vision and CSTARS commercial space-based imagery and RADAR products and provide that data to US and Allied ROVER users and other Federal, State, Local & Tribal (FSL & T) organizations worldwide operating from theater level down to tactical teams and first responders.

[Open Site](#)

DigitalGlobe: EV WebHosting

Primary Use: Basemap

My DigitalGlobe is a web-based application to quickly and easily view, analyze, and download DigitalGlobe data that is available to you via the EnhancedView Web Hosting Service (EV-WHS). Your subscription may contain DigitalGlobe satellite or aerial imagery, or even custom sources of geospatial data. My DigitalGlobe allows you to identify the best available image(s) for your area of interest and then view and download them in the format that integrates most efficiently into your workflow.

[Sign up for Tribal DigitalGlobe accounts through National Geospatial-Intelligence Agency](#)

[Open Site](#)

USDA: NAIP Imagery

Primary Use: Basemap

USGS: The National Map (TNM) Download

Primary Use: Basemap

As one of the cornerstones of the U.S. Geological National Map is a collaborative effort among the improve and deliver topographic information for scientific analysis to emergency response. The National Map includes orthoimagery (aerial photography), transportation, structures, and land added within the viewer or brought in with The National Map to create specific types of maps or map views. National Spatial Data Infrastructure (NSDI) and geospatial community by providing high quality, services including new generation digital topographic data.

[Open Site](#)

USGS: Earth Explorer


Primary Use: Basemap

The EarthExplorer user interface is an online United States Geological Survey (USGS). EarthExplorer other remote sensing inventories through interactive interface, users can identify search areas, dataset services within the interface.

[Open Site](#)

USGS: GloVis

Primary Use: Basemap

 Indian Affairs

1/1/2018

Section 6: Topics & Tutorials - *Example*


BIA BOGS Sponsored - ArcPy Webinars

Topics & Tutorials

ArcPy Webinars

What is ArcPy?

ArcPy is a Python site package that provides a user interface for geographic data analysis, data conversion, data manipulation, and more with Python. This package provides a rich and native Python API with auto-completion (type a keyword and a dot to get a pop-up list of keywords supported by that keyword; select one to insert it into your code). Each function, module, and class. The additional benefit is that Python is a general-purpose programming language. It is ideal for interactive work and quick prototyping of scripts while being powerful enough to write large-scale applications. Applications written with ArcPy benefit from the vast ecosystem of Python in numerous niches of Python by GIS professionals in different disciplines.



python
powered

Python Lesson 1 Introduction to Python

Source: BOGS


[View This Tutorial](#)

Interested in learning more about ESRI and ArcPy?

[Click Here](#)

REVIEW / CONTRIBUTE TO NATIONAL CLIMATE ASSESSMENT

1/1/2018



BIA TRP SPONSORED, SUSTAINED NCA RESOURCE NCA INDIGENOUS PEOPLES ACTION MAP

Since the full applications is not available yet, it is shown in the following slides for comment

Please also correct or add to the list of Actions by Tribe or Group, including Indigenous Peoples

There is also an online feedback form, to enter you comments or new actions electronically at:

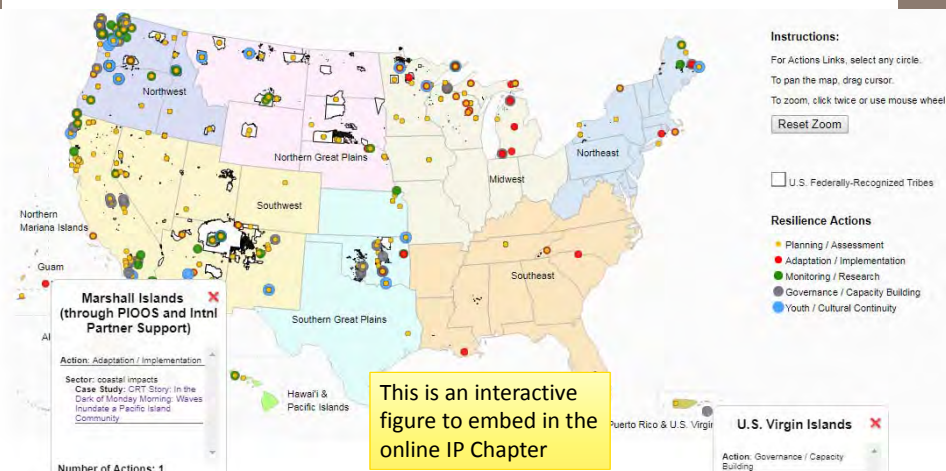
<https://www.bia.gov/bia/ots/tribal-resilience-program/nca>

Just google: "BIA NCA Resilience"

or visit bia.gov, then search box: "NCA"



NCA4 DRAFT REVIEW THROUGH 1/31/18: NATIONAL CLIMATE ASSESSMENT: INDIGENOUS PEOPLES CHAPTER + INDIGENOUS PEOPLES RESILIENCE ACTIONS MAP



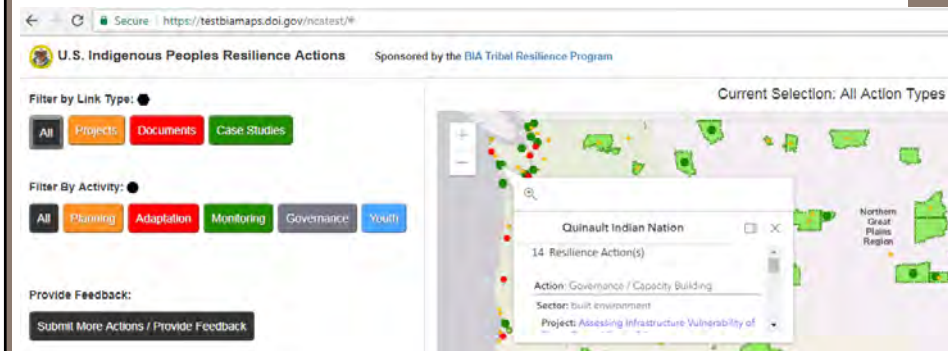
Public Chapter Review Instructions + IP Actions Map Feedback / Add Actions at:

<https://www.bia.gov/bia/ots/tribal-resilience-program/nca>

(google: "BIA NCA Resilience" or visit bia.gov, Search: "NCA")

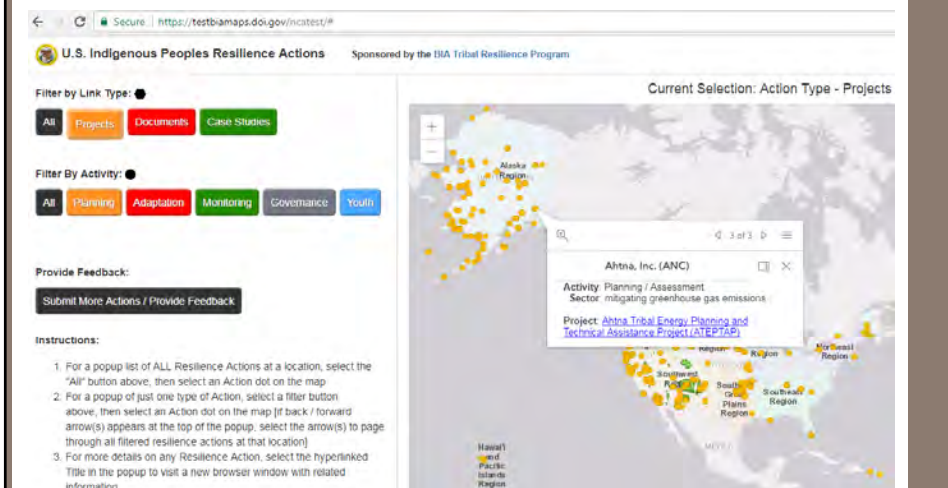


NCA INDIGENOUS PEOPLES ACTION MAP – OPTION 1. ALL ACTIONS SYMBOLIZED BY ACTION TYPE



The default (first option) shows all resilience actions in a single popup. If you are not zoomed out enough, the popup will indicate that more than one tribe or group is in the vicinity to better select one of interest. For Feedback (large black button at the bottom) jumps to the NCA Public Review page feedback noted prior slide to comment/add actions.

NCA INDIGENOUS PEOPLES ACTION MAP – OPTION 2. ACTION TYPE - PROJECTS



Unlike the All Types option, only projects will appear to page through one at a time at a given location. Zoom in option on popup helps select.

NCA INDIGENOUS PEOPLES ACTION MAP – OPTION 3. ACTION TYPE - DOCUMENT

U.S. Indigenous Peoples Resilience Actions Sponsored by the BIA Tribal Resilience Program

Filter by Link Type: ●

All Projects Documents Case Studies

Filter By Activity: ●

All Planning Adaptation Monitoring Governance Youth

Provide Feedback: Submit More Actions / Provide Feedback

Current Selection: Action Type - Document / Plan

Saint Regis Mohawk Tribe

Activity: Planning / Assessment
Sector: multiple sectors

Document: [Climate Change Adaptation Plan for Akwesasne \(2013\)](#)

Note: Responsive mapping application design will fit your tablet or mobile device automatically!

Sometimes, you just want to review documents to select nearby or similar as a template or to get ideas on ways to develop one yourself!

NCA INDIGENOUS PEOPLES ACTION MAP – OPTION 4. ACTION TYPE – CASE STUDY

U.S. Indigenous Peoples Resilience Actions Sponsored by the BIA Tribal Resilience Program

Filter by Link Type: ●

All Projects Documents Case Studies

Filter By Activity: ●

All Planning Adaptation Monitoring Governance Youth

Provide Feedback: Submit More Actions / Provide Feedback

Current Selection: Action Type - Case Study

Swinomish Indian Tribal Community

Activity: Planning / Assessment
Sector: human health

Case Study: [CRT Case Study: The Swinomish Indian Tribal Community Prepares for Climate Change Impacts](#)

Note: Use Popup arrows to jump from one story to another, if lists < X of # > shows in bottom of popup

Discover the tools, techniques, partners and supporting documents that helped Tribes build Resilience through their stories with this option!

NCA INDIGENOUS PEOPLES ACTION MAP – OPTION 5. ALL ACTIVITIES

U.S. Indigenous Peoples Resilience Actions Sponsored by the BIA Tribal Resilience Program

Filter by Link Type: ●

All Projects Documents Case Studies

Filter By Activity: ●

All Planning Adaptation Monitoring Governance Youth

Provide Feedback:
Submit More Actions / Provide Feedback

Instructions:

1. For a popup list of ALL Resilience Actions at a location, select the "All" button above, then select an Action dot on the map.
2. For a popup of just one type of Action, select a filter button above, then select an Action dot on the map (if back / forward arrow(s) appears at the top of the popup, select the arrow(s) to page through all filtered resilience actions at that location)
3. For more details on any Resilience Action, select the hyperlinked Title in the popup to visit a new browser window with related information

Current Selection: All Activities

As shown in the IP Chapter figure, the authors chose to group Resilience Actions into five "Activity" categories, this shows all in one popup

NCA INDIGENOUS PEOPLES ACTION MAP – OPTION 6-10. FILTERED ACTIVITY OPTIONS

Current Selection: Activity - Adaptation / Implementation

Filter By Activity: ●

All Planning Adaptation Monitoring Governance Youth

As part of responsive design, button, color, and title change to let user know which filter selected.

ADDING A NEW ACTION OR FEEDBACK

<https://www.bia.gov/bia/ots/tribal-resilience-program/nca>

New IP Action - Tribe or Group
Enter the full name of the Tribe or Group who completed the Resilience Action

New IP Action - Title

New IP Action - URL
Required! No action can be included without a reference URL to validate and share

New IP Action - Type
Is this an adaptation or mitigation project, plan, or case study?


☐ Project
☐ Document (Adaptation Plan or Vulnerability Assessment, etc.)
☐ Case Study

To reach form, just google:
"BIA NCA Resilience"

Only need to list your contact to help with questions or if you need a direct response / confirmation

OTHER FEDERAL AND INTERTRIBAL RESILIENCE RESOURCES

1/1/2018

 Indian Affairs

Sustainability

https://www.fhwa.dot.gov/environment/sustainability/resilience/adaptation_framework/

<https://www.fema.gov/mobile-app>

DEVELOP A FEMA-APPROVED HAZARD MITIGATION PLAN

FEMA and Tribal Nations A POCKET GUIDE

FEMA and Tribal Nations A POCKET GUIDE

FEMA is committed to engaging with tribes as part of its government-to-government relationship that recognizes tribal sovereignty. FEMA is a resource for tribes in their efforts to prepare for, protect against, respond to, recover from, and mitigate against emergencies and disasters that impact Indian Country.

This pocket guide answers questions about how FEMA engages with tribes, explains FEMA's tribal policies, and provides contact information for FEMA team members who are working with tribal nations. In this pocket guide, there are also brief descriptions of FEMA programs and how they can help affected tribes.

<https://www.fema.gov/preparedness-tribes>

<https://www.ready.gov/heat-toolkit>

COASTAL SEA LEVEL RISE, FLOODING, AND STORM SURGE MAPPING

<https://coast.noaa.gov> <https://coast.noaa.gov/slr/>

<http://sealevel.climatecentral.org>

<http://coastalresilience.org>

Surging Seas

Sea level rise analysis by CLIMATE CENTRAL

Surging Seas RISK FINDER

St. Petersburg, FL, USA

Summary

Warming oceans and melting ice sheets are raising global sea levels. St. Petersburg area waters could rise 15 inches by 2050, and 4 feet or more by 2100, localizing from the intermediate high sea level scenario in the latest U.S. National Climate Assessment. [Jump to more projections & details](#)

This pathway suggests a 18% risk of flooding over 5 ft between today and 2030, and 46% between today and 2100.

RISK FINDER & MAP

Choose a completed state GO

Projections, analysis, comparisons, and downloadable data and local reports about coastal flood and sea level threats to people, property and infrastructure. For cities, counties, states, ZIPs, and much more.

[About](#) | [Video Tutorial](#) | [Tools Comparison](#) | [Custom Analysis](#) | [Science](#) | [Case Studies](#)

RISK FINDER & MAP

EXTREME SEA LEVEL

COASTAL FLOODS

MAPPING CHOICES

1/1/2018

National Park Service – TEK website

Traditional Ecological Knowledge

Home Description of TEK News Guest Author Column TEK Applications Issues Resources

NPS.gov / Explore This Subject <https://www.nps.gov/subjects/tek/index.htm>

Interdisciplinary Stewardship of Mother Earth

Welcome! This site is for anyone interested in working with Indigenous peoples and long-term (hundreds of years) local residents for stewardship of ecosystems. It provides information, resources and discussion for those interested in considering both traditional knowledge and western science. **Please use the menu bar or click on the photos on this page to navigate to content-rich pages.** To submit information for the website for consideration and posting, please [Contact Us](#).

TRADITIONAL ECOLOGICAL KNOWLEDGE

HOW CAN I LEARN MORE? **How Can I Learn More?**

LEARNING AND LIVING TEK **Learning and Living TEK**

GUEST COLUMNISTS **Guest Columnists**

POLICIES, PROCESSES AND PROTOCOLS **Tribal Policies, Processes and Protocols**

1/1/2018

TEK Resources in Tribal Resilience Resource GUIDE

Tribal Resilience Resource Guide <http://toolkit.climate.gov/tribal>

Home Regions Tribes Agencies Funding Planning Training TKs/TEK Youth Search

Traditional Knowledges / Traditional Ecological Knowledge

Orientation


Indigenous traditional knowledges (TKs) have emerged in national and international arenas as rich information for indigenous and non-indigenous assessments, policies, and adaptation strategies. With this growing recognition, however, comes potential risks to indigenous peoples in sharing TKs in federal and other non-indigenous resilience initiatives. These resources assist Tribes, Agencies, and other Partners build respectful, complimentary efforts together.

<p>Guidance</p> <ul style="list-style-type: none"> Guidelines for Considering Traditional Knowledges in Resilience Initiatives (Includes Primer and Ethics Essay Links) TEK - Interdisciplinary Stewardship of Mother Earth 2009 Resilience Workshop II Report 2012 First Stewards Witness Report Rising Voices I-III Reports and Outcomes AIAN Guide to Build Cultural Awareness Tribal Nations Impacts Summary and References 	<p>Research Papers</p> <ul style="list-style-type: none"> CMN SDI Model Best of 2 Worlds: TEK in ESB Management CC and Indigenous Peoples in the U.S. Guarding Against Exploitation: TEK & CC Engagement that Honors TKs Tribal Resilience Publications IPCC Portal Publications - Books 	<p>Federal TEK Awareness</p> <ul style="list-style-type: none"> ACCNRS TK Guidelines and Primer - Summaries CC Through an Intersectional Lens USFS Exploring Role of TEK in CC Initiatives USFS Briding the Gaps that Divide US FWS Basic TEK Info NIH TEK and Its Value for EHS NIH TEK Workshop Day 2 EPA Using TEK to Adapt to CC EPA TSC: TEK in Policy and Decision Making Tribal Engagement in CSCs and LCCs
<p>Examples</p>	<p>Videos</p> <ul style="list-style-type: none"> Braids of Truth, Part Two: Resilience 	

1/1/2018

Other NPS Resilience Resources

- 2014 Preserving Coastal Heritage workshop report
<http://www.achp.gov/docs/preserve-coastal-heritage.pdf>
- NPS framework approach for cultural resources and climate change <http://www.georgewright.org/321rockman.pdf>
- EcoAdapt webinar on TEK and climate change
<http://www.cakex.org/community/events/national-adaptation-forum-webinar-series-importance-traditional-ecological>
- NPS climate change videos (example: Jamestown)
<https://www.youtube.com/user/NPSClimateChange>
- NPS ArchaeoThursdays webinars
<https://www.nps.gov/archeology/tools/webinars.htm>

 Indian Affairs

LANDSCAPE CONSERVATION COOPERATIVES (LCCs)

CONSERVATION PLANNING ATLAS (CAPs)

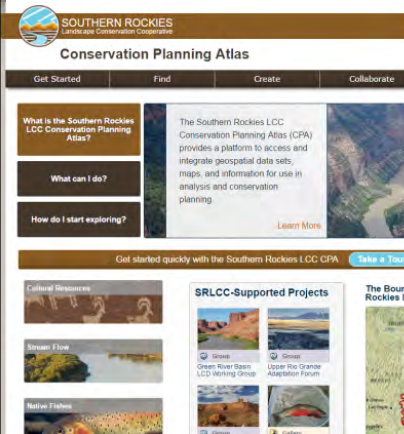
CA Climate Commons - <http://climate.calcommons.org/> Southern Rockies LCC CAP Tribal Team - <https://californialcc.org/node/528> <https://srlcc.databasin.org>

Desert LCC - <https://desertlcc.org/group/tribal-working-group>

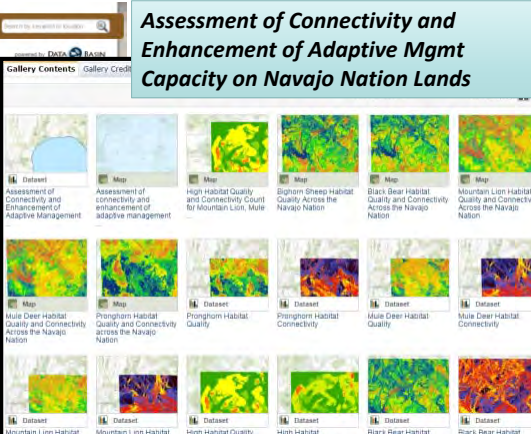
Desert LCC Story Maps & Atlas: <https://dlcc.databasin.org>

GB LCC Tribal Resources: <http://greatbasinlcc.org/tribal-resources>

NP LCC STEK: <http://www.northpacificlcc.org/Resources/Keystekdocuments>



Assessment of Connectivity and Enhancement of Adaptive Mgmt Capacity on Navajo Nation Lands



ITEP Resilience Outreach and Communication

<http://www7.nau.edu/itep/main/tcc>

Tribes & Climate Change Website

- Training / Monthly Newsletter
- Tribal Profiles
- Tools and Resources
- Take Action
- Events
- Contacts



Indian Affairs

GENERAL TRIBAL RESILIENCE SUPPORT PROGRAMS

- **Climate Adaptation Knowledge Exchange**
<http://www.cakex.org>

- **Georgetown Adaptation Clearinghouse**
<http://www.adaptationclearinghouse.org>

**Bureau of Indian Affairs (BIA) and
Federal-Wide Support
for Tribal Resilience and Cultural
Resources Preservation**

**Thank you for your time and attention!
QUESTIONS???**

Please sign-up for Resilience News or Follow-up!

Presented by: Margaret T. Herzog, PE, PMP, PhD

Margaret.Herzog@bia.gov, 720-484-3353

BIA Tribal Resilience Program (TRP)

(just Google: "BIA Resilience")

<https://www.bia.gov/bia/ots/tribal-resilience-program>

1/1/2018

