

# Refining National Boundaries of the United States

National Boundaries Group  
ESRI UC San Diego 2016

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U.S. Department of Commerce  
Economics and Statistics Administration  
U.S. CENSUS BUREAU  
census.gov



# National Boundaries Group

- The National Boundaries Group (NBG) within Federal Geographic Data Committee (FGDC) has been improving the national boundaries of the U.S including:
  - State, County, International, Marine, Federal, Tribal
- Formed to establish collaboration of federal boundary efforts for A-16 data sets
- For all responsible federal agencies to achieve the following with boundaries:
  - Currency, Accuracy, Consistency, Accessibility, Integration
- First meeting held March 14, 2011
  - Quarterly meetings started in 2012
- Co-chaired by the USGS and Census Bureau

# NBG Participating Agencies



- Bureau of Land Management (BLM)
- U.S. Forest Service (USFS)
- National Park Service (NPS)
- U.S. Fish and Wildlife Service (FWS)
- U.S. Geological Survey (USGS)
- U.S. Census Bureau (Census)
- Bureau of Reclamation (BOR)
- Bureau of Indian Affairs (BIA)
- National Geospatial-Intelligence Agency (NGA)
- U.S. Army Corps of Engineers (USACE)
- Library of Congress (LOC)
- Oak Ridge National Labs (ORNL)

- U.S. Department of Agriculture (USDA)
- Bureau of Ocean Energy Management (BOEM)
- National Oceanic and Atmospheric Administration (NOAA)
- Environmental Protection Agency (EPA)
- Department of Defense (DOD - DISDI)
- Department of Energy (DOE)
- National Aeronautics and Space Administration (NASA)
- Department of Homeland Security (DHS)
- International Boundary Commission (IBC)
- International Boundary and Water Commission (IBWC)
- Department of State
- Veterans Administration (VA)



# Sources Of Boundary Data

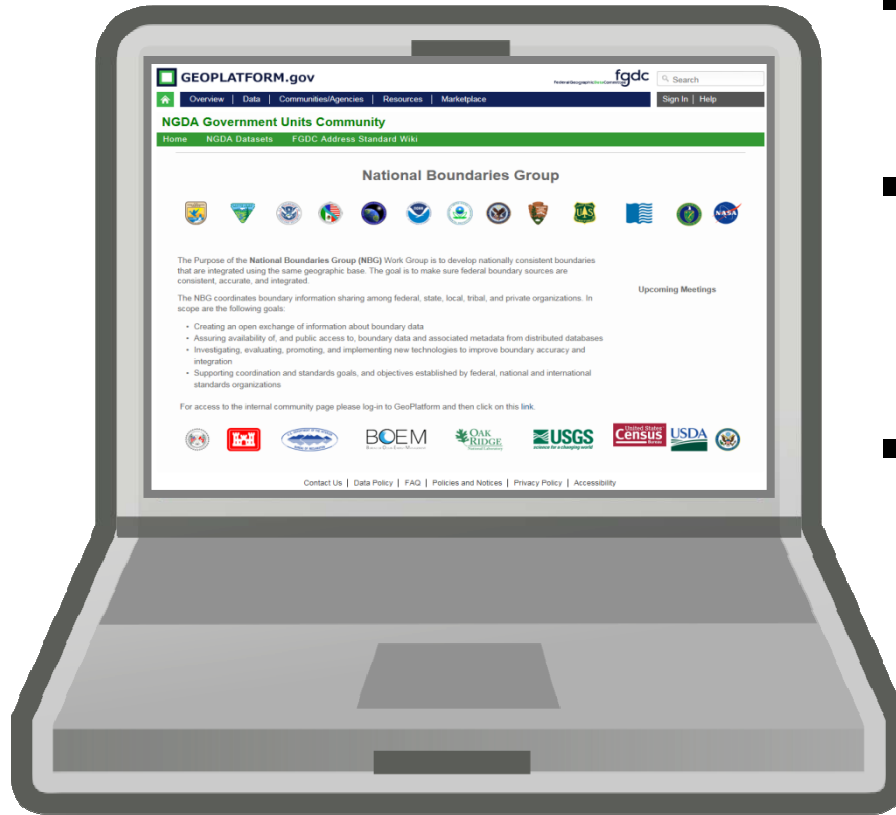
Authoritative Source	Boundary
<b>Bureau of Census: Boundary Annexation Survey (BAS)</b>	Govt Units: state, county, incorporated places, minor civil divisions, congressional districts, tribal lands
<b>State Department (IBWC, IBC)</b>	International Boundary: Mexican-U.S Border, Canadian-U.S. Border
<b>Federal Agencies FWS, USFS, NPS, BLM, BOR, DOE, NASA, DOD, DHS, USACE, et al</b>	Federal Lands: civilian, military
<b>NOAA</b>	Maritime boundaries
<b>Bureau of Land Management</b>	Public Land Survey System

# Accomplishments 2016

## Outreach and Data Quality

- NBG is part of FDGC Governmental Units, Administrative & Statistical theme and its website is now hosted on [GeoPlatform.gov](http://GeoPlatform.gov)
- Census' boundary quality project is updating place, county and state boundaries from state data and the international boundaries with data from the IBC and the IBWC
- Federal Lands Working group presented the PAD-US as a source for public land boundaries to the GAC
- Formed the Tribal Boundaries Subgroup Fall 2015

# GeoPlatform.gov



- Establishment of Community page on FGDC's **GeoPlatform**
- Space to share information, meeting minutes, presentations, blogs, and links
- Pertaining to the National Boundaries Group and its subgroups
  - Federal Lands Working Group
  - Tribal Subgroup

<https://www.geoplatform.gov/a16govunits/NBG>

# Boundary Quality

- Boundary Quality Assessment and Reconciliation Project (BQARP)
- Compares locally sourced data to Census boundaries and adjusting where necessary
- Coordinates efforts with **State Partners**
- Aligns boundaries with Parcel and Public Land Survey System (PLSS), where applicable
- Improves the spatial quality of legal and administrative boundaries within the MTDB
  - Set the boundaries' spatial accuracy
  - Lock boundaries in place to avoid changes without legal documentation and document what feature the boundary follows with a **Spatial Metadata Identifier** (SMID)

# Boundary Alignment in New Jersey

New Jersey local boundaries are **Green**

2015 Census Boundaries in **Red**



2016 Census Boundaries in **Purple**



Before and after Census' Boundary Quality Assessment and Reconciliation Project



# Boundary Alignment in New Jersey



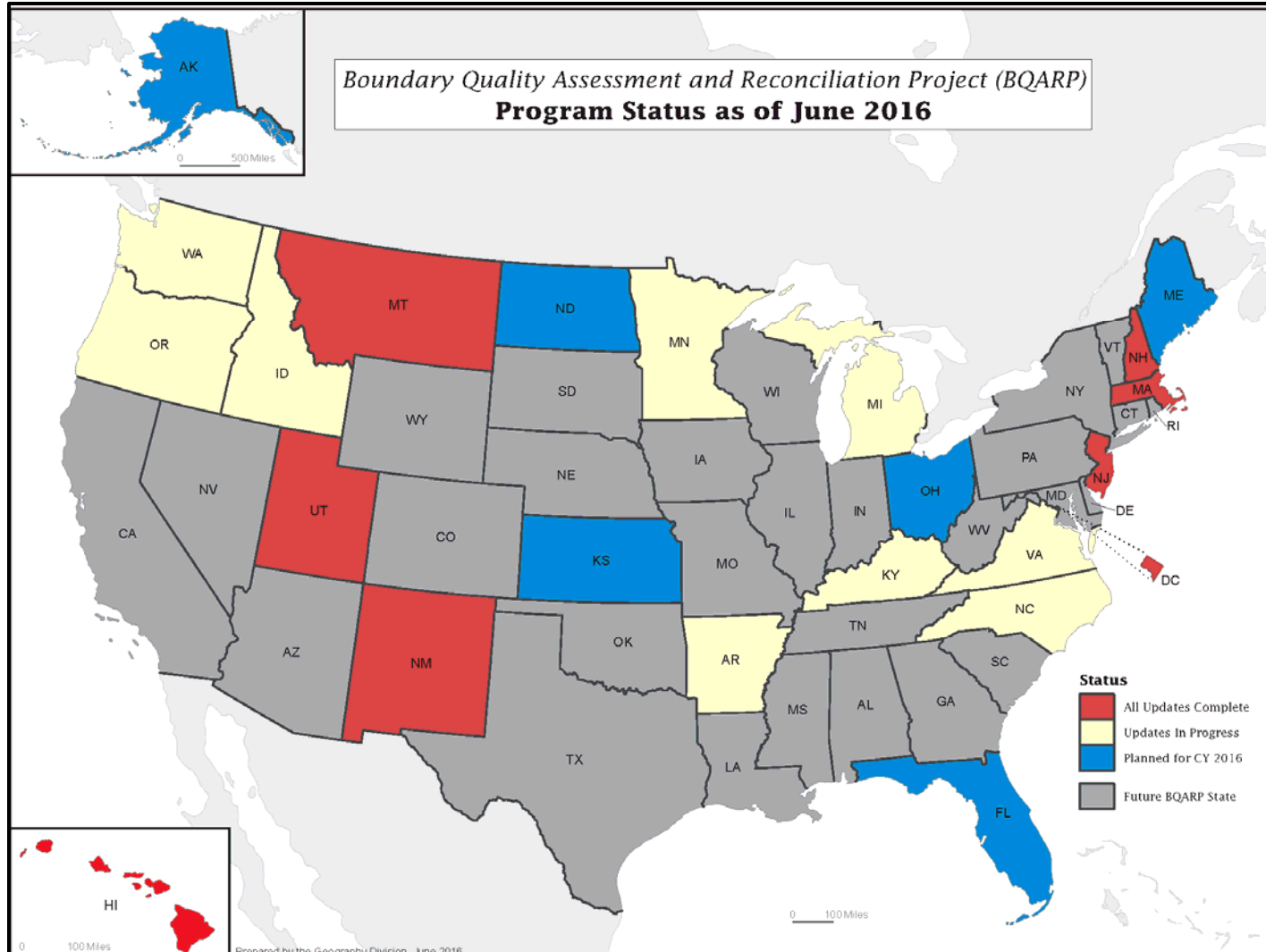
- Assessment of the boundaries is done in ArcMap
- Local cadastral and boundary data help provide reference for boundary updates

Local boundaries are **Green**

2016 Census Boundaries in **Purple**

2015 Census Boundaries in **Red**

# BQARP Status Summer 2016



**Slide 10**

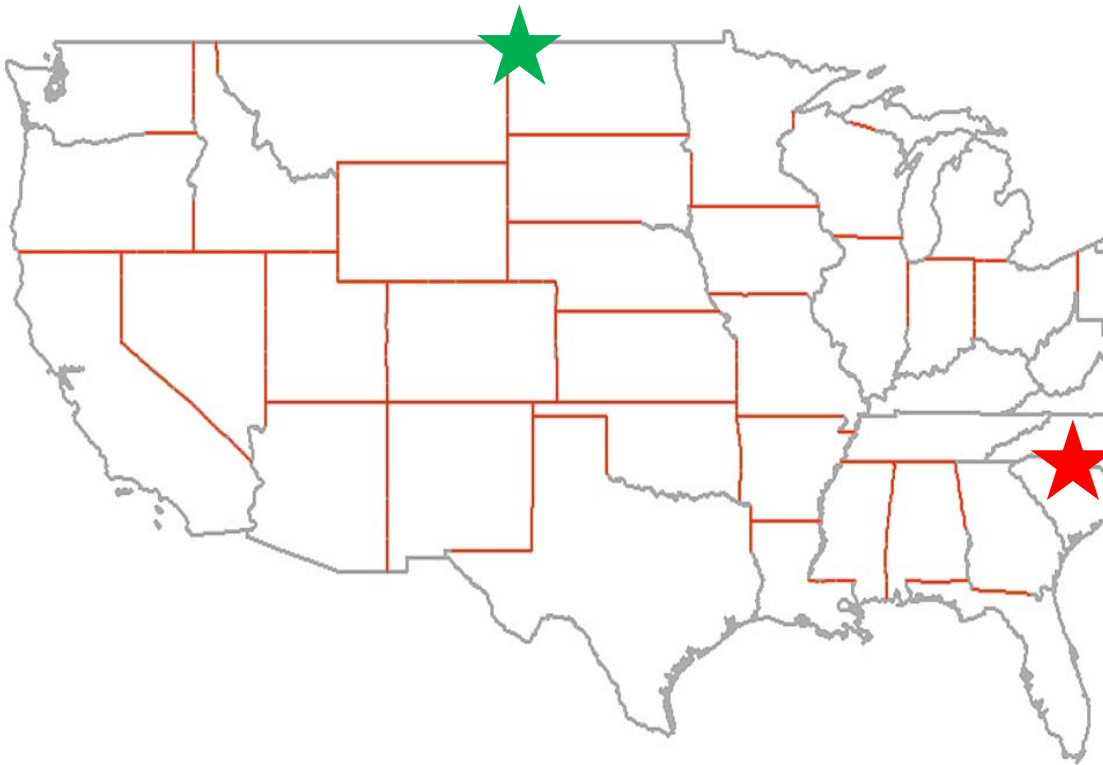
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**MS3**

We'll have a newer status map next week

Madeline Sovich, 5/20/2016

# State Boundaries



The **orange** lines represent the **9,928** miles of state boundaries that follow the PLSS

## State Boundary Disputes

- **Resolved:**
  - Montana
  - North Dakota
- **Current:**
  - South Carolina
  - North Carolina

# International Boundaries

## United States and Canada



- **International Boundary Commission (IBC)** currently maintains:

- 8891km (5525mi) of boundary
- over 8000 boundary monuments and reference pts
- 1000 survey control points
- a 6m (20ft) wide clear vista along the land boundary line

- IBC is resurveying the Alaskan/Canadian border summer 2016

- Version 1.2 shapefile of the IBC's international boundary

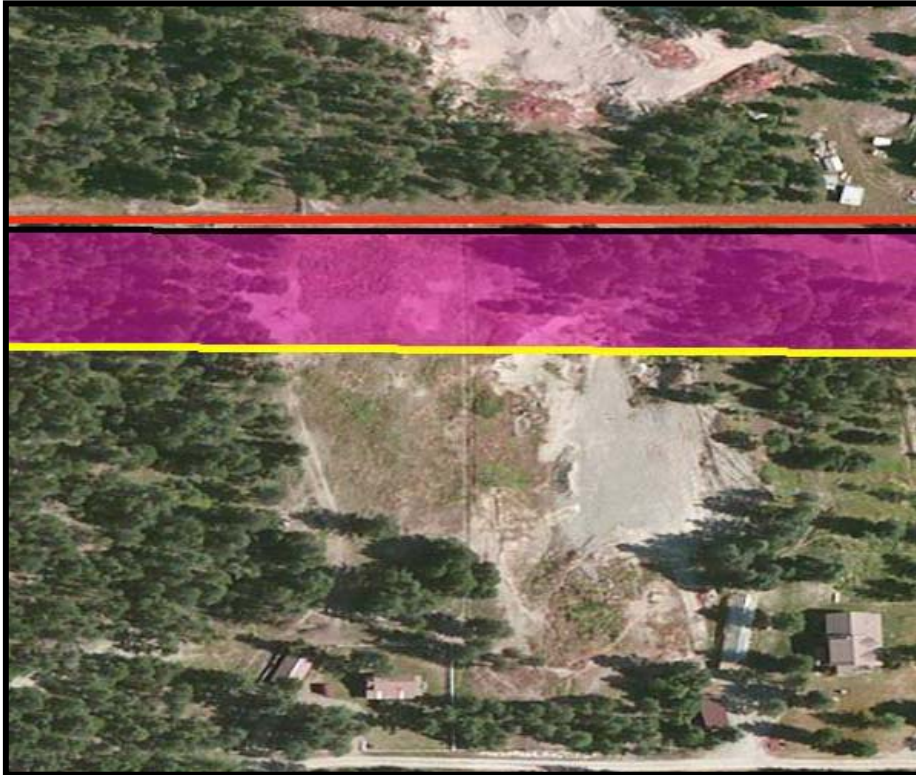
will be available now at [www.InternationalBoundaryCommission.org](http://www.InternationalBoundaryCommission.org)



Photo courtesy of JT Moore and the IBC

# International Boundaries

## Updating Census Data



**Montana-** The Census boundary (yellow) is 138ft south of the IBC boundary (red) while the State's boundary (black) is only 12ft south

Census Bureau will match the IBC and IBWC international boundary lines accordingly

Completed so far:

- ✓ Montana
- ✓ New Hampshire
- ✓ Washington
- ✓ Idaho
- ✓ New Mexico (PLSS only)

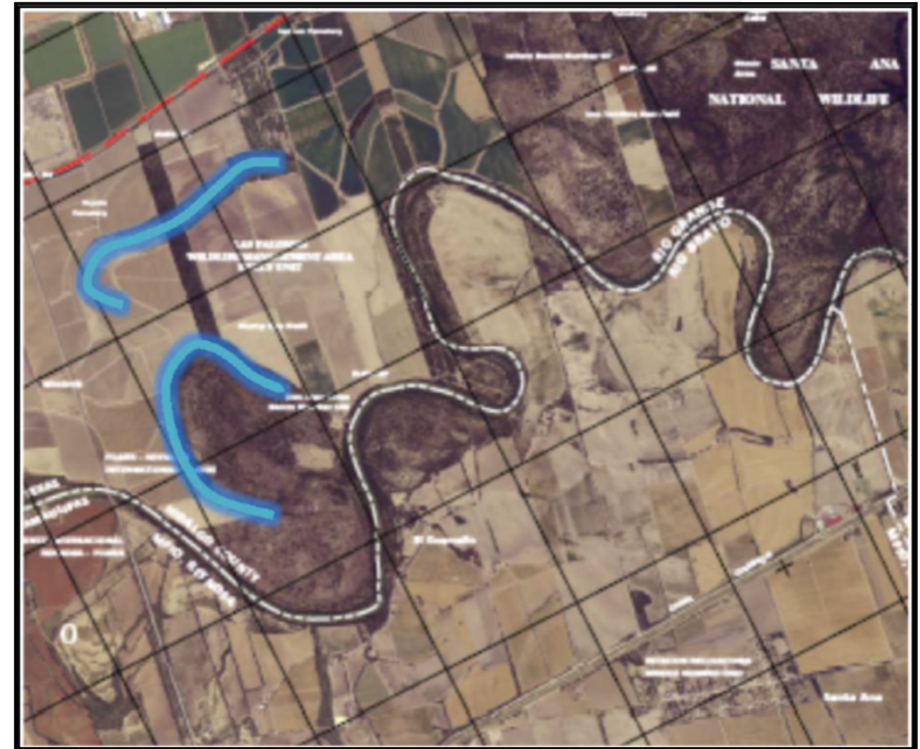
# International Boundaries

## United States and Mexico



The **International Boundary and Water Commission (IBWC)** is the bi-national commission on boundary disputes

Currently resurveying boundary markers in a multi- year project



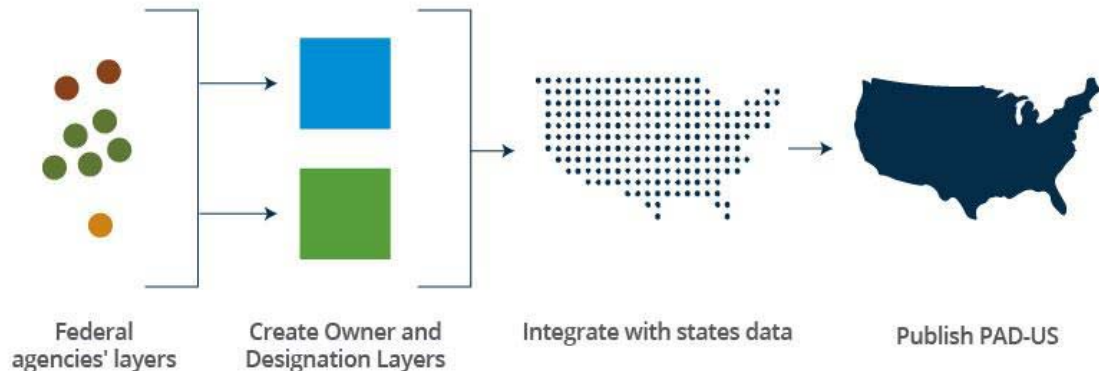
Boundary affected by major flow events including hurricane Alex (2008)

# Federal Boundaries

## Federal Lands Working Group

FY 2016-17 Objectives:

- Assess and improve **inventory completeness**
- Assess and improve the compatibility or completeness of **core attributes between agency datasets**
- Improve the **efficiency of annual fed lands data aggregation** for the Protected Areas Database of the United States (PAD-US)
- Identify and correct major topology overlaps errors (i.e. boundaries) between agency datasets.





# Federal Lands Working Group

## Protected Area Database

Presented to the DOI Geospatial Advisory Committee (GAC) to get support for the **PAD-US**

- **Acknowledge** PAD-US as the nation's inventory of protected (public) areas by identifying PAD-US as the nation's inventory of protected area by recognizing PAD-US is an A-16 layer in the Cadastral Theme.
- **Support** federal agencies providing PAD-US with updates by requesting DOI Bureaus provide staff time to work on PAD-US by submitting data and working to resolve gaps and overlaps between agencies.
- **Recognize** the resources required to produce an aggregated geodatabase for common agency needs

# Tribal Boundaries

## Tribal Boundaries Subgroup

- New Subgroup of the National Boundaries Group (NBG)
- Growing interest in NBG meetings
- Started holding independent meetings in late 2015
  - Meetings are 1<sup>st</sup> Wednesday of every month
- Anyone is welcome to join!

# Tribal Boundaries Subgroup:

## Why?

- Many agencies use tribal boundaries, often separately and differently
- Boundaries are needed for data dissemination
- Agencies writing legislation and people using the data need to understand the geography behind the data
- Some agencies use tribal boundaries but can't maintain their own layer so they need to coordinate with other agencies

# Tribal Boundaries Subgroup

## Current Work

*Goal 1: Discuss and document tribal boundary needs from agencies that use tribal boundaries*

- First order of business for the group
- To accomplish this goal, each agency will take a turn presenting to the group
  - 1-2 presentations during each group meeting
  - Use a presentation template to hit key points
  - Document presentations