

Identifying Fatal Crashes involving Native Americans/Alaskan Natives throughout the United States and on Tribal Reservations

Overview

Native American crash data is important to be able to evaluate fatal traffic crashes that occur throughout the United States and those that occur within Tribal Reservations.

FARS Coding

NHTSA's Fatality Analysis Reporting System (FARS) collects data on fatal traffic crashes in the U.S. and reports out if the fatal crash occurred in a special jurisdiction, as defined below:

Definition: This data element identifies if the location on the trafficway where the crash occurred qualifies as a Special Jurisdiction even though it may be patrolled by state, county or local police (e.g., all State highways running through Indian reservations are under the jurisdiction of the Indian reservation).

Attribute Codes for SP_JUR

1975-Later

0 No Special Jurisdiction (*Includes National Forests Since 2008*)

1 National Park Service

2 Military

3 Indian Reservation

4 College/University Campus

5 Other Federal Properties (*Since 1977*)

8 Other (*Since 1976*)

9 Unknown

Therefore a crash coded as SP_JUR=3 would indicate that the fatal crash occurred on an "Indian Reservation".

In order to code the crash as SP_JUR=3 then relevant information would need to be present on the Police Accident Report (PAR) or the FARS coder would need to have the local knowledge that the particular location was within BIA land.

Derived Data Element Using Geospatial Software

The FARS database contains the data elements Latitude and Longitude. These data elements are coded by the FARS analysts based on the location information available on the PAR (either directly from a listed Latitude/Longitude or indirectly via the address of the crash (road name, mile marker etc.)). Not all FARS crashes have a valid latitude/longitude and these crashes are coded as having an unknown geospatial location.

GIS Analysis

FARS fatal crash locations were imported into Geospatial software and overlaid on a BIA land layer. FARS crashes were then coded as being within the boundaries of BIA land or not (BIA=1 or 0). When analyzing the FARS data with Geospatial software there are inconsistencies between the FARS coding and Geospatial coding.

Tables 1 and 2 below breaks down the coding for the years 2007 – 2011 combined:

Table 1: FARS Coding by GIS Coding FARS 2007-2011: Known Latitude/Longitude

BIA Land GIS Derived	FARS Coding			Total
	Indian Reservation (SP_JUR=3)	Other	Unknown	
Not On BIA Land	188	158,363	30	158,581
On BIA Land	917	499	4	1,420
Total	1,105	158,862	34	160,001

Table 2: FARS Coding by GIS Coding FARS 2007-2011: Unknown Latitude/Longitude

BIA Land GIS Derived	FARS Coding			Total
	Indian Reservation (SP_JUR=3)	Other	Unknown	
Latitude/Longitude = Unknown	132	2,482	17	2,631

Overall FARS coded 1,237 “Indian Reservation” crashes as compared to 1,420 coded BIA land using the GIS software.

When further looking at Table 1 we see the following:

1. 188 fatal crashes that were coded “Indian Reservation” by FARS but were not spatially located within the BIA layer. When looking specifically at these crashes and spot checking their locations on the map the following are observed:
 - a. Many of these crashes seem to be located at Native American Casinos, Indian Villages etc.
 - b. Many are located in small pockets of land that are completely surrounded by BIA land. (See Image 1 below).
2. 499 fatal crashes that were within the BIA layer but coded “Other” by FARS. When looking specifically at these crashes many appear to be incorrectly coded. If you look at

Image 2 below you will see that within the BIA layer that are FARS crashes in close proximity, where one is coded “SP_JUR=3” and the other is coded “SP_JUR=0”.

Image 1: FARS Crashes Located Within Spatial Pockets within the BIA Layer

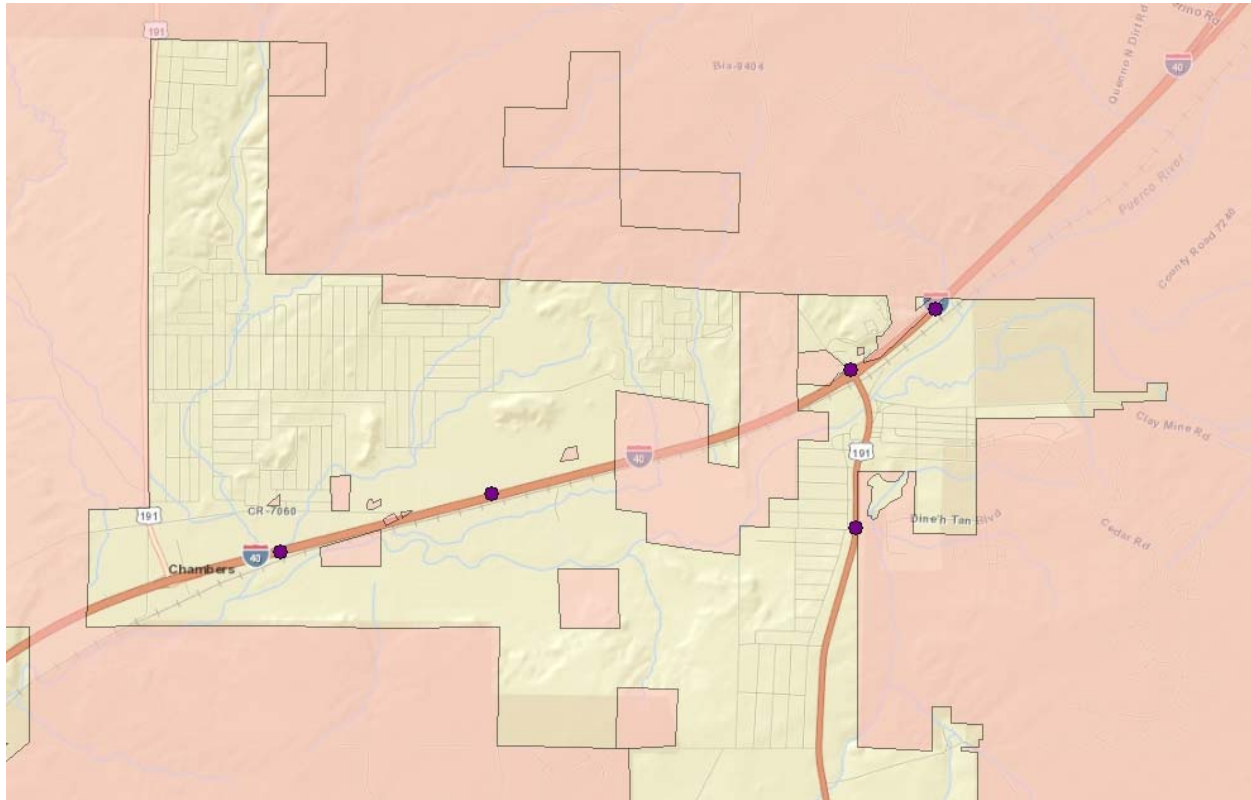
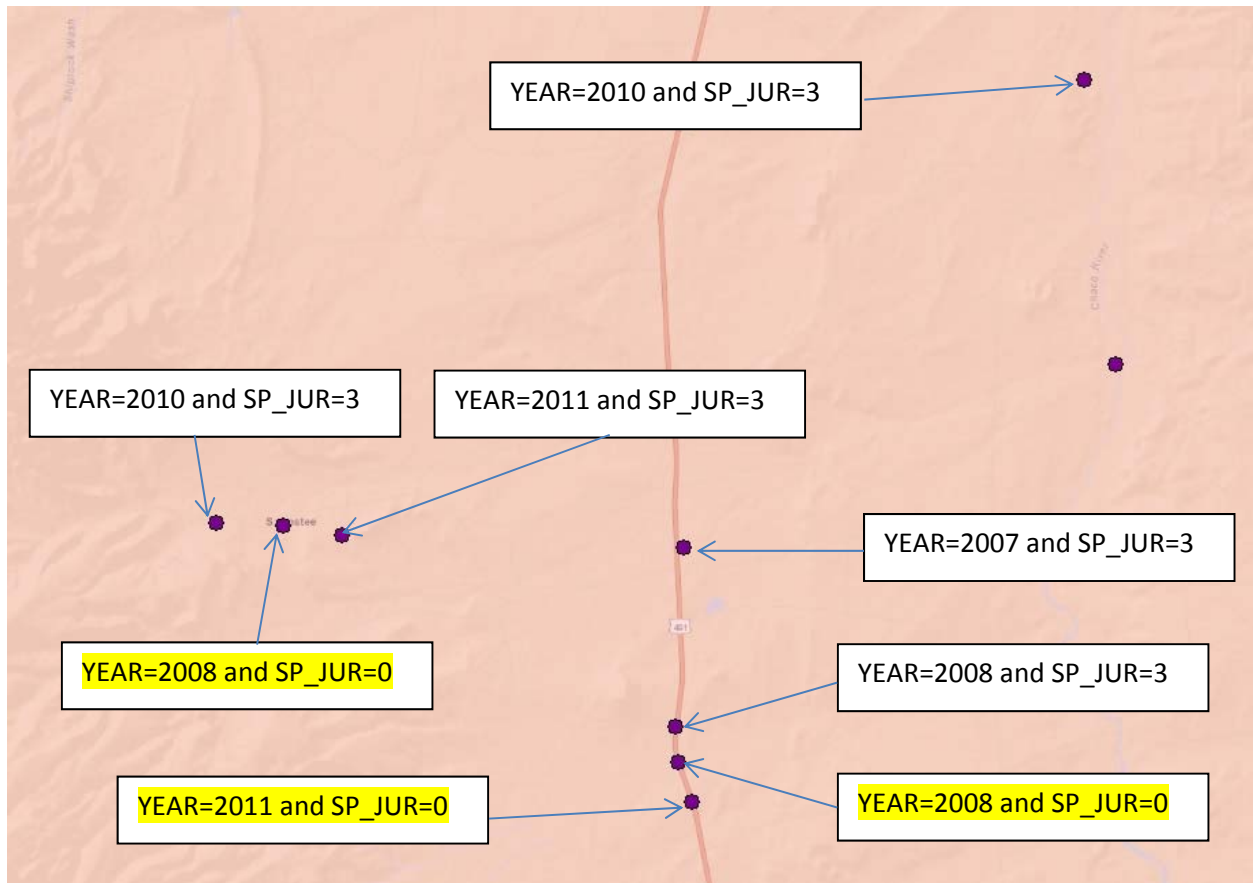


Image 2: FARS Crashes Located Within BIA Layer but Coded “SP JUR=0”



Proposed Solution

It seems that there are two issues:

1. GIS BIA layer is not 100 percent complete.
2. FARS Coding is not 100 percent accurate.

Therefore the proposed solution is to use all of the available information and use the SP_JUR in combination with the GIS derived variable.

Native American Land fatal crashes would therefore be identified by the following:

WHERE (SP_JUR=3 OR BIA=1).