

Tribal Crash Overview

Tribal lands definition:

- Within the limited of Indian Reservation
- All dependent Indian communities
- All Indian allotments

Why do we care about tribal crash data?

- Crash rate: 4x higher than other areas
- Crash severity: higher than other areas
- Equitable distribution of resources
- Robust data is critical to address safety issues
- Tribal safety program funding is data-driven

Current Issue:

- Hard to systematically collect tribal crash datasets for subsequent analysis
- Lack of unified standards for tribal in report form → low data quality
- Limited tribal resources / reluctance to report → underreporting issue

Study Objectives: How to collect tribal crash data properly?

- Identify advantages and deficiencies of performing tribal crash analysis in current Wisconsin crash database
- Propose several recommendations on how to improve the crash report to support more robust and automated analysis

Wisconsin Tribes & Crash Overview

Wisconsin Tribes

- 11 federally recognized American Indian nations and tribal communities
- Multiple lands scattered in different counties



DT4000 crash data

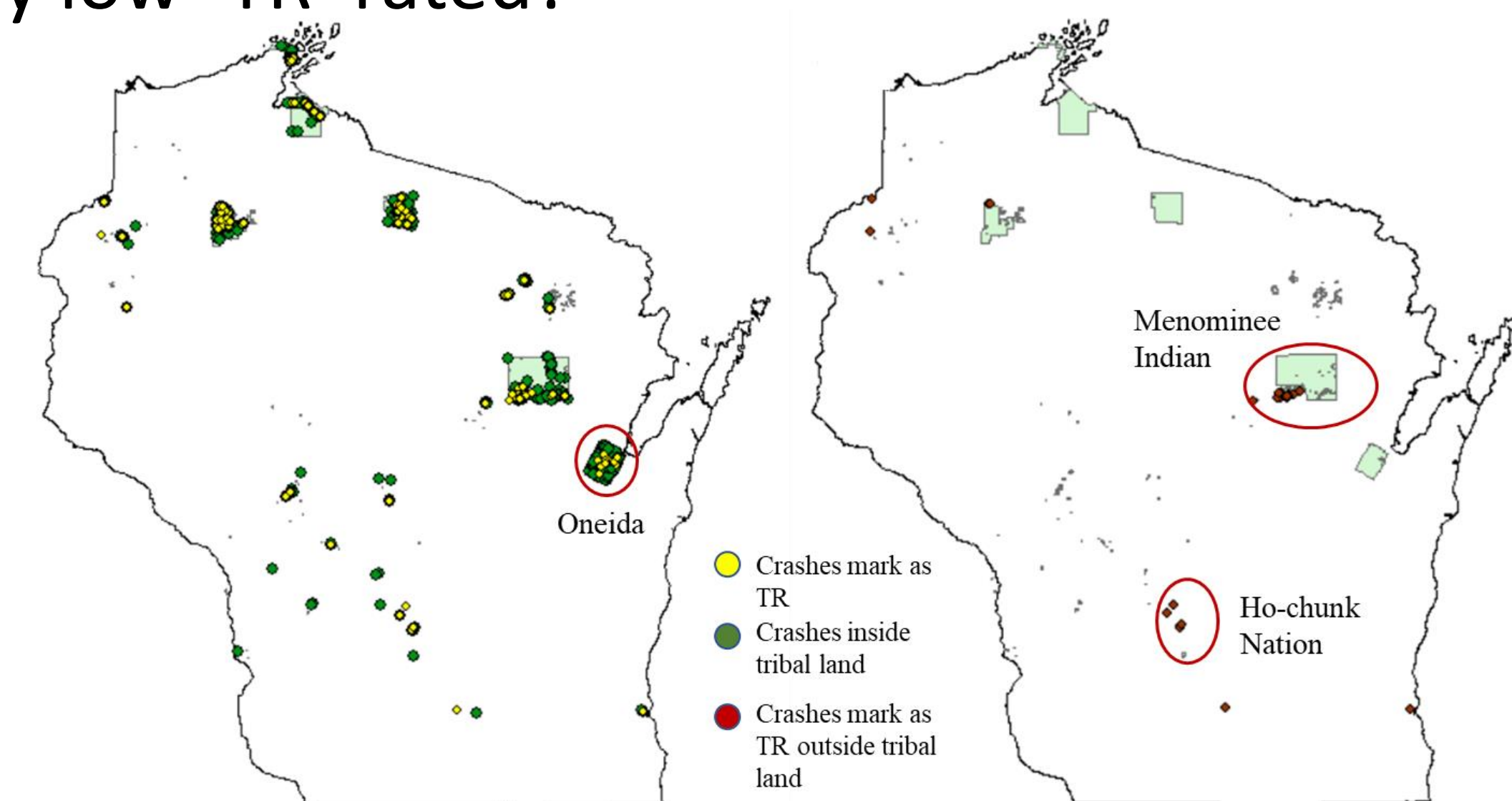
- Contains information on all police reported crashes from 1994 to now
- Using Model Minimum Uniform Crash Criteria (MMUCC) as reference
- Location/coordination information is provided
- Tribal crash marked as 'Tribal Land (TR)'

Wisconsin tribal crash data

- 3-year crash data (2017-2019)
- 2173 crashes on Tribal lands
- Only 10.7% (232) of crashes were marked as 'TR'

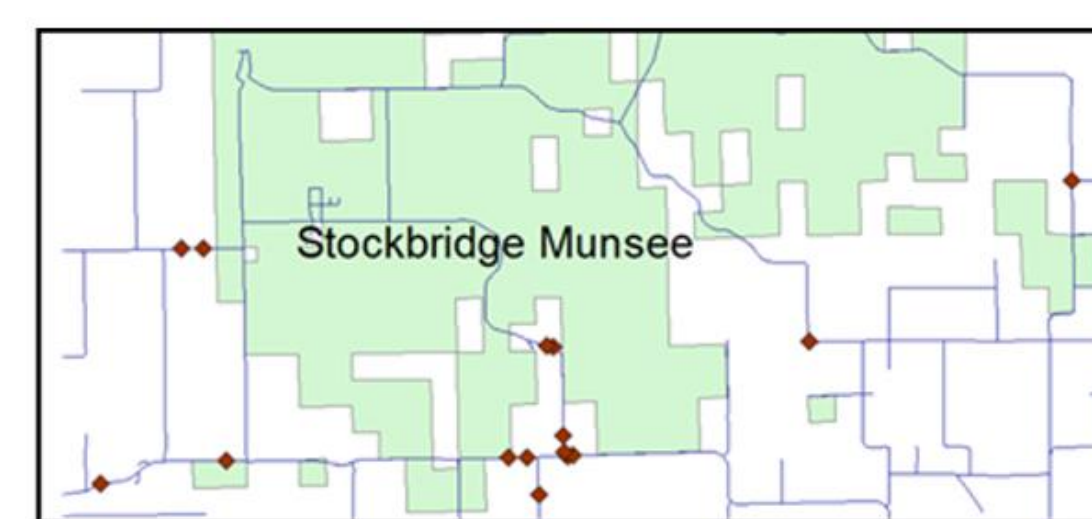
Issues

- Why 'TR' crash mapped outside?
- Why low 'TR' rated?



Systematic Crash Validation

Crash Classification - Location



Possible Reasons for mapping outside

- Reporting Error
- Inaccuracy in the polygon layer

Crash Classification - Jurisdiction

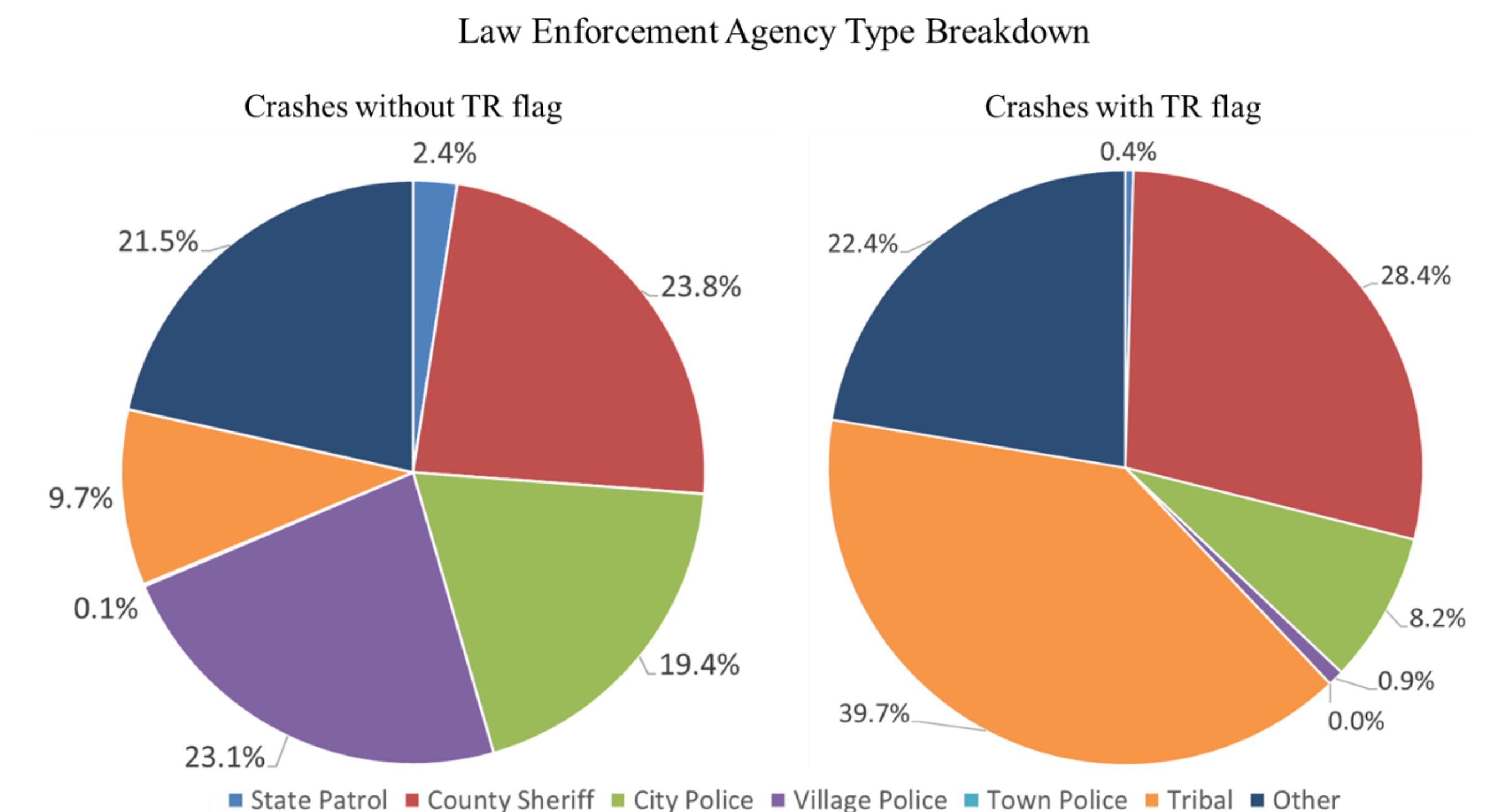
- Only 229 (10.5%) crashes were marked as Indian Reservation/Trust.
- A highly coincident (98.7%) with 'Location' attribute.

Why low Indian Reservation Rate?

Roadway Factors	Weather Condition(s)	Crash Classification - Jurisdiction
NONE	CLEAR	No Special Jurisdiction
Animal Type	Relation To Trafficway	College/University Campus
Crash Classification - Location	TRAFFICWAY - ON ROAD	Military
PUBLIC PROPERTY	Crash Classification - Jurisdiction	National Park Service
Tribal Land	OTHER	Other Federal Properties
Access Control	NO CONTROL	Other
Special Study	Special Study	Unknown
NONE	CLEAR	Private Property
Animal Type	Relation To Trafficway	Other
Crash Classification - Location	TRAFFICWAY - ON ROAD	Unknown
PUBLIC PROPERTY	Crash Classification - Jurisdiction	No Special Jurisdiction
Tribal Land	NO CONTROL	College/University Campus
Access Control	Special Study	Indian Reservation/Trust
Special Study	Special Study	Military
NONE	CLEAR	National Park Service
Animal Type	Relation To Trafficway	Other Federal Properties
Crash Classification - Location	TRAFFICWAY - ON ROAD	Private Property
PUBLIC PROPERTY	Crash Classification - Jurisdiction	
Tribal Land	NO CONTROL	
Access Control	Special Study	
Special Study	Special Study	

Law enforcement agency

- Whether the specific reporting law enforcement agency affects the tribal crash reporting?



Recommendations

- Remove the 'TR' attribute in the Crash Classification - Location, limiting the location ownership element to the MMUCC definition
- Decouple the dependency between the Crash Classification - Jurisdiction and - Location in the DT4000 crash report
- Add an independent new subfield in crash classification (C2) for tribal element that could correlate to other tribal-related attributes.
- Add a specific BIA road type to the existing road type elements in the crash database to clearly identify crashes on BIA roads.

Future Technique

