



Prescribed Burning and Prairie Restoration

On a Reservation in the Rural/Urban Interface

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Presentation Overview:

- Shakopee Mdewakanton Sioux Community (SMSC)
 - Location and landscape in the Rural/Urban Interface (RUI)
- Implementing a prescribed fire program
 - Challenges
 - Successes
- Fire and SMSC's prairie restorations
- Lessons learned and conclusions
- Questions

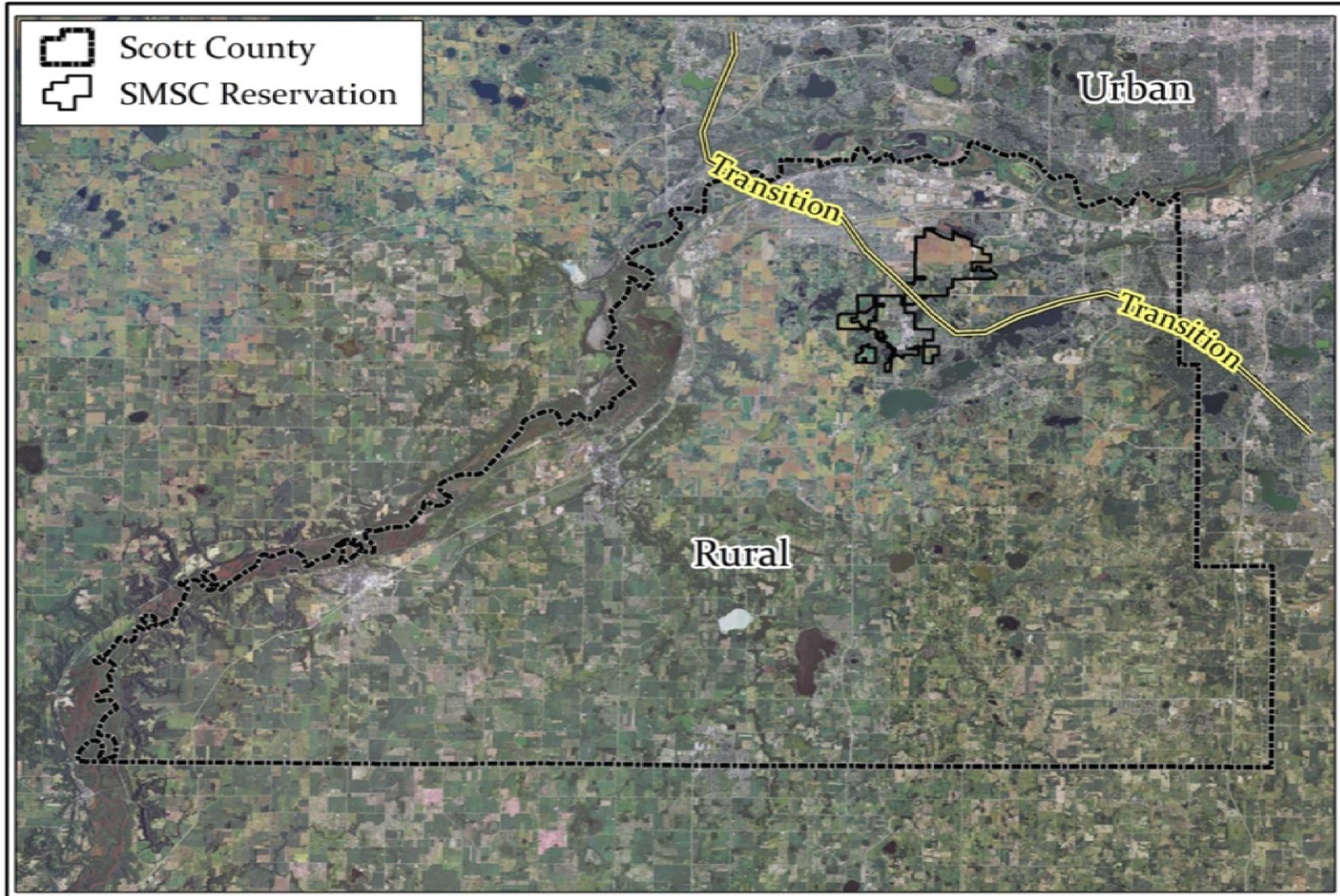
SMSC:

- Federally recognized Native American Tribe
 - Gained self-governing sovereignty in 1969
- Located in northern Scott County, MN
 - SW edge of Mpls/StP metro area
 - ~ 30 miles from Mpls/StP
 - RUI
- Nearly 3,500 acres of land
- Home to Mystic Lake Casino & Hotel
 - Popular casino destination in Mpls/StP metro

SMSC:



SMSC:



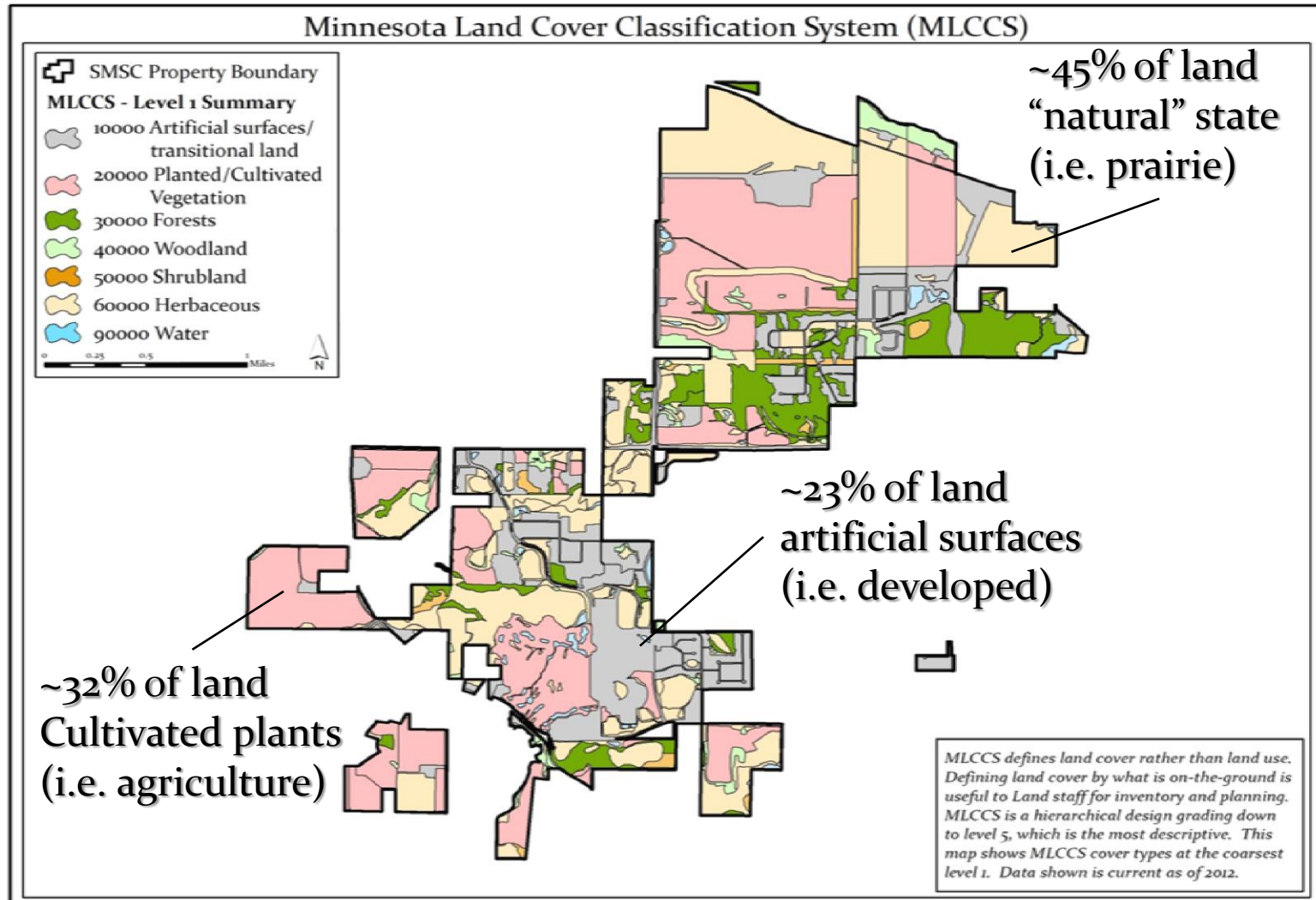
SMSC:

- Tribal landscape is consistent with being in the RUI
 - RUI - Transitional area between high density urban development and low density agricultural parcels
- Not using term Wildland/Urban Interface (WUI)
 - Most of the fire-prone wildland is gone
 - Converted to agriculture/development

SMSC:

- Tribal landscape characterized by Minnesota Land Cover Classification System (MLCCS)
 - MLCCS describes land cover instead of land use
 - “Residential area” = land use
 - “Short grasses and mixed trees with 26 – 50% impervious cover” = land cover
 - Five level hierarchy
 - Level 5 is most descriptive, level 1 is general

SMSC:



SMSC:

- Tribal landscape
 - Patchwork of different habitat types
 - Agriculture = rural
 - Development = urban
 - “Natural” areas



Prescribed Fire Program:

- Tribe wanted to bring fire back to the landscape
 - Asked to implement a prescribed fire program in 2004



Prescribed Fire Program:

- Rationale
 - Manage and enhance prairie and oak savanna restorations
 - Other natural areas also (e.g. disturbed wetlands, fallow fields, forest understory)
- Professional development
 - Independently conduct prescribed burns to manage tribal land
 - Resource for prescribed burn/wildfire cooperation
- Reduce fuel loading for wildfires

Prescribed Fire Program:

- Challenges
 - Lack of trained personnel
 - Limited tools and equipment
 - Jurisdictional issues
 - Local anti-fire attitude
 - Close proximity to infrastructure
 - High traffic areas



Prescribed Fire Program:

- Lack of trained personnel
 - Only 1 valid red card on the reservation
 - Some prescribed fire experience in Mdewakanton Fire Department
 - Not a whole lot of experience myself!



INCIDENT QUALIFICATION CARD					
Printed May/7/05		Name Kelley Shawn		Employee Id 00000000101	
Unit Id MN-MRA		Unit Name Midwest Regional Office		Fitness Expire	Arduous Mar/29/06
QUALIFIED POSITIONS					
Status	Position	Description			Curr Exp
Q	FFT2	Firefighter			
			Form Card Here		
Certifying Official		Title	Date		
<i>[Signature]</i>		<i>Regional Foreman</i>	<i>5/9/05</i>		

Prescribed Fire Program:

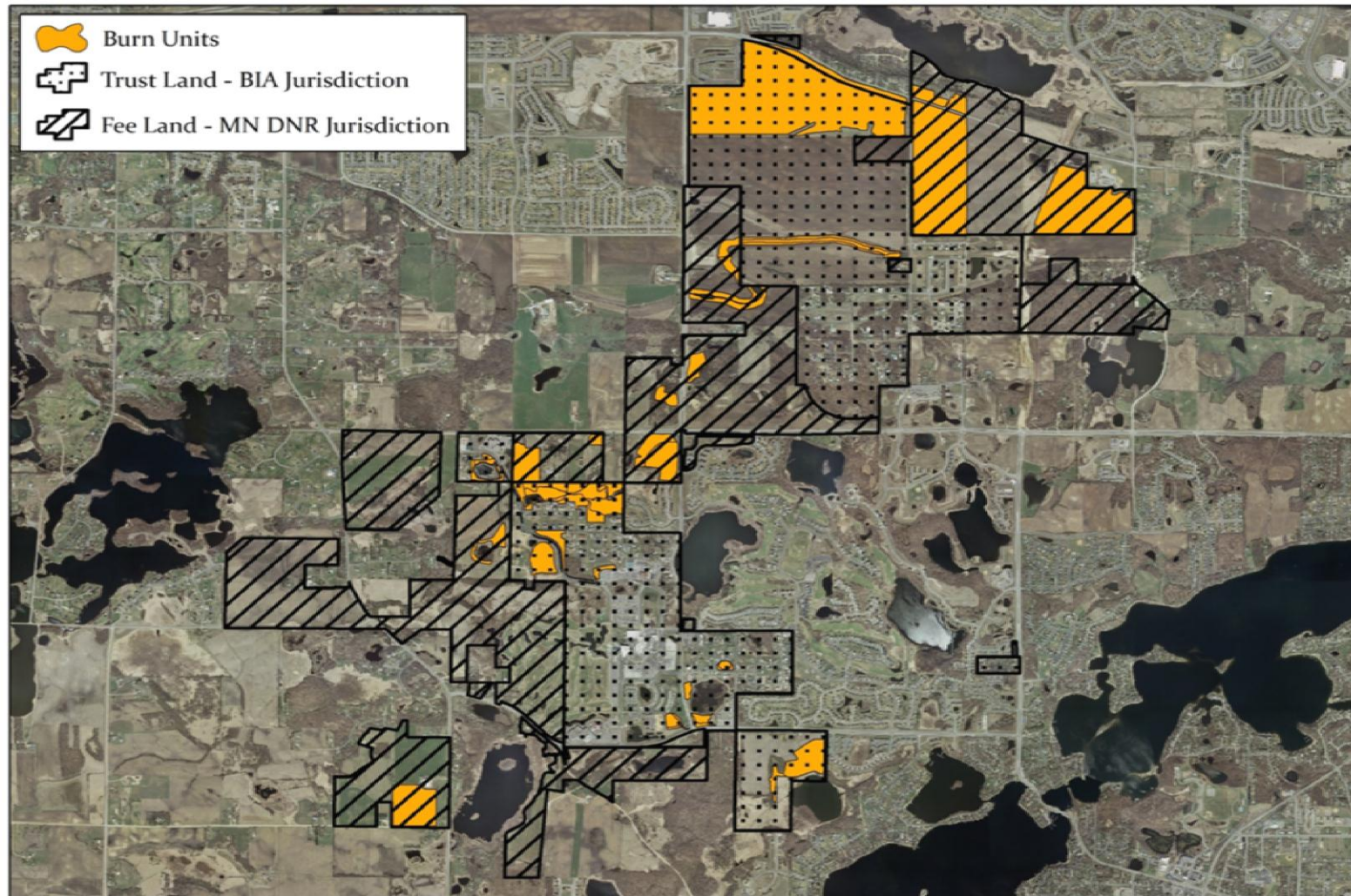
- Limited tools and equipment
 - “Grass Rig” – Type 7
 - Two backpack spray pumps
 - Some wildland PPE
 - Nothing standardized



Prescribed Fire Program:

- Jurisdictional Issues
 - Tribe owns land in Trust and Fee status
 - Trust land = Federal land recognized by the U.S. government – Bureau of Indian Affairs (BIA) has jurisdiction
 - Fee land = Tribe owns this land similar to a private landowner – Minnesota Department of Natural Resources (MN DNR) has jurisdiction
 - Causes complications
 - Burn unit may cross over Trust/Fee land
 - Stop burning at the jurisdictional boundary?

Prescribed Fire Program:



Prescribed Fire Program:

- Local anti-prescribed fire attitude
 - Shakopee and Prior Lake Fire Chiefs were wary
 - Same with our own Fire Department Director!
 - Intentionally starting fires?
 - Nuts!
 - Public concerns



Prescribed Fire Program:

- Close proximity to infrastructure
 - Burning near expensive homes on and off reservation
 - Casino/Hotel



Prescribed Fire Program:

High density
homes on and
off reservation

Casino/Hotel



Prescribed Fire Program:

- High traffic areas
 - Heavily used roads on and around the reservation
 - Gawker issues



Prescribed Fire Program:

- Successes
 - Establish dedicated fire budgets
 - Mitigate training and equipment challenges
 - Build relationships
 - Mitigate jurisdictional issues and anti-fire attitude challenges
 - Professional development
 - Mitigate burning in close proximity to infrastructure and high traffic areas

Prescribed Fire Program:

- Establish dedicated fire budgets
 - Awarded \$10,000 from the Rural Fire Assistance (RFA) grant in 2005
 - Awarded \$17,000 from the RFA in 2006
 - Program significantly expanded from 2005 – 2007
 - Increased from 1 red card to 8



Prescribed Fire Program:

- Establish dedicated fire budgets
 - Purchased BK radios, drip torches, and other equipment
 - Standardized PPE

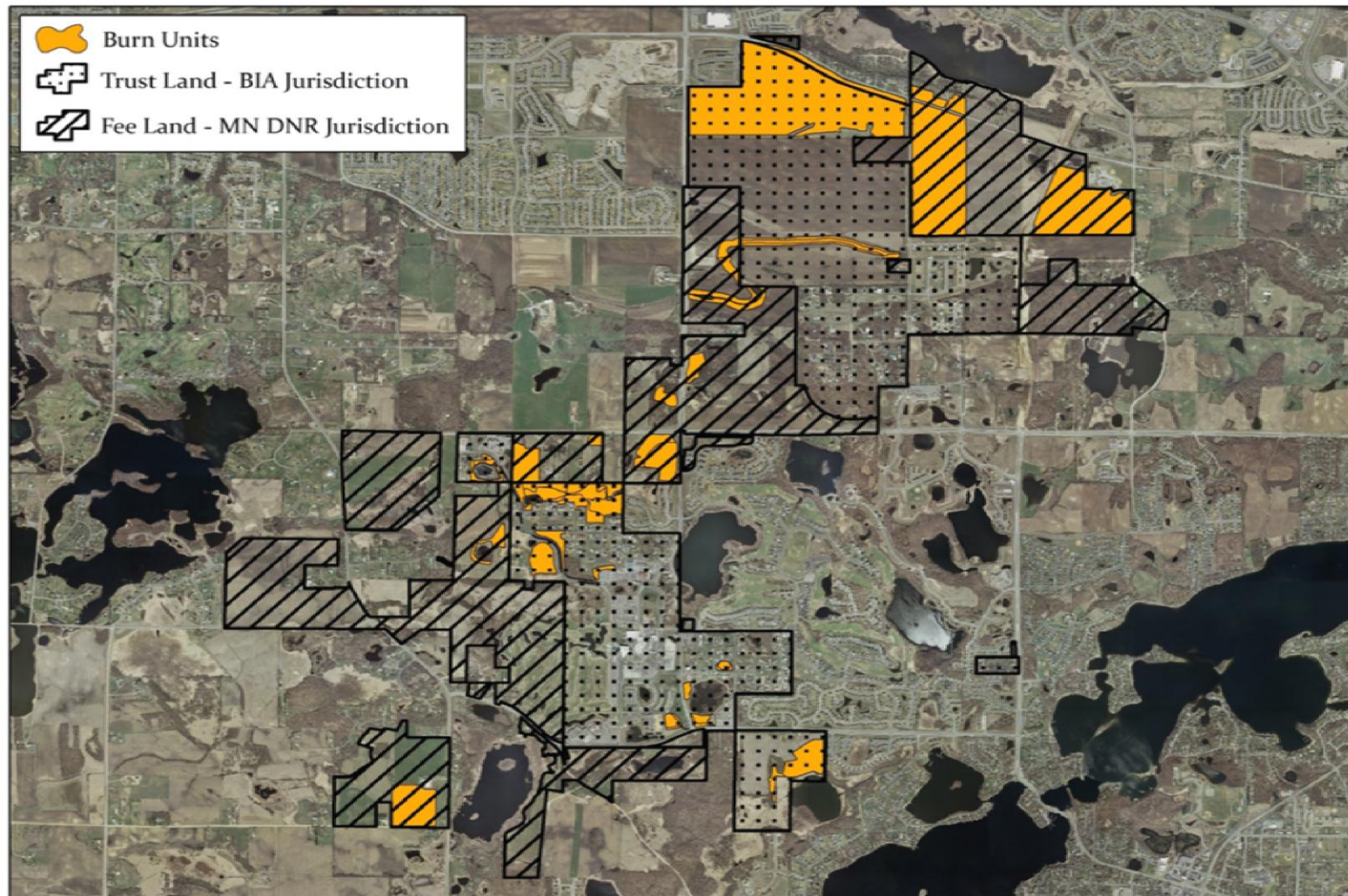


Prescribed Fire Program:

- Build relationships
 - Connect to local and regional fire professionals
 - BIA Midwest Regional Office
 - MN DNR Regional Forester
 - MN Valley National Wildlife Refuge
 - Needed to understand jurisdictional issues



Prescribed Fire Program:



Prescribed Fire Program:

- Build relationships
 - Jury was still out on jurisdictional issues
 - Worked regularly with BIA fire staff on Trust land burns
 - BIA not sure about what to do with Fee land
- Asked MN DNR Regional Forester for help on Fee land burns
 - Staff allowed to burn lands not managed by DNR (Prescribed Burn Handbook, 2010)
 - Liability is an issue

Prescribed Fire Program:

- Build relationships
 - Cooperative agreement established with the BIA and SMSC
 - BIA can assist and collaborate on burns regardless of land status (e.g. Fee/Trust)
 - Caveat - staff qualifications must comply with National Wildfire Coordinating Group (NWCG) standards on all burns
- Prescribed burning jurisdictional issues no longer relevant

Prescribed Fire Program:

- Build relationships
 - Local Fire Chiefs
 - Reach out, explain intentions
 - Burning for ecological reasons
 - Work with, not against
 - Abide by city ordinances
 - Invite them to burns



PLEASE CALL SCOTT COUNTY DISPATCH AT 952-445-1412 THE DAY YOU ARE GOING TO BURN.

Permit # _____
☐ Call or ☐ Mail

BURNING PERMIT FOR SCOTT COUNTY

PERMITTEE INFORMATION

Name _____
Address _____
City _____ State _____ Zip _____
Phone # _____

BURNING PERMIT CONDITIONS (Check those that apply)

☐ **PILED MATERIAL (Clean Wood)**
(Specify) _____
Piles _____ Approx. Pile Size _____

☐ **RUNNING FIRE (Grassland)**
Size of Area in Acres _____

☐ **SPECIAL CONDITIONS**

BURN SITE LOCATION

Township _____
Address _____
City _____

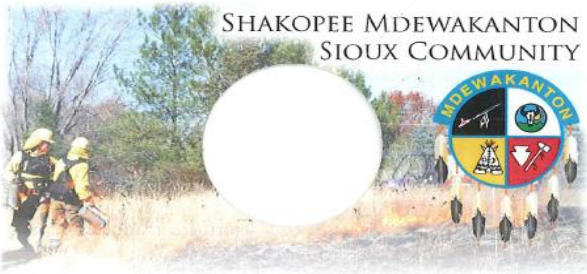
To Be Completed By Fire Dept. EFFECTIVE DATES: From: M ____ D ____ /Y ____ To: M ____ D ____ /Y ____
DAILY HOURS: From: ____ AM/PM To: ____ AM/PM OR ☐ ALL DAY

This permit is valid for open burning as allowed and specified in Minn. Rules 7005.0705 to 7005.0805, MS § 16, Minn. Uniform Fire code, and local ordinances. The permittee is granted permission to burn the above described materials at the specified location during the dates and times listed above.

FIRE SAFETY AND AIR QUALITY REQUIREMENTS

Prescribed Fire Program:

- Build Relationships
 - Public concerns
 - Send out press release before burn seasons
 - Five w's
 - Prescribed Fire door hangers
 - Knock on doors, discuss intentions



SHAKOPEE MDEWAKANTON
SIOUX COMMUNITY

Hello,

Given favorable weather conditions, staff from the Shakopee Mdewakanton Sioux Community will be conducting prescribed burns in your area.

Contact: Land and Natural Resources Department
Phone #: 952-496-6136
Address: 2330 Sioux Trail NW
Prior Lake, MN 55372

Time frame: _____
Location: _____

We have contacted the appropriate authorities regarding this burn and have attained all necessary burning permits. For more information on prescribed burns, please read the reverse side of this tag.



Prescribed Fire Program:

- Professional Development
 - Fire staff must comply with NWCG standards
 - Staff training
 - Mdewakanton Fire Department
 - Land and Natural Resources Department
 - S-130, S-190, L-180
 - Baptism by fire!
 - Get as much fireline experience as possible



Prescribed Fire Program:

- Professional Development
 - Work with feds
 - BIA, US FWS
 - Easy for tribal government
 - DOI umbrella
 - Opportunities arise
 - Get invited to burn off reservation
 - Burn with other crews, different fuels
- New experiences are fun
 - Motivating for fire staff

Prescribed Fire Program:

- Professional Development
 - Learn from the pros
 - Years of extensive experience
 - Firing/holding techniques
 - Establish control lines
 - Meet burn objectives safely



Prescribed Fire Program:

- Professional Development
 - Smoke mitigation strategies
 - Most important
 - Learned to deal with traffic
 - 'Prescribed Fire' / 'Smoke Ahead' signs
 - Posting structural fire rigs
- Repetition
 - More opportunities = more fireline experience



Fire and Prairie Restoration:

- Tallgrass Prairies are significant to the Tribe
 - Food, fiber, and medicinal plants historically
 - Used in cultural practices (e.g. Prairie Sage)
 - Restoring Tallgrass Prairie fits with stewardship ideology
 - ‘Caring for grandmother earth’



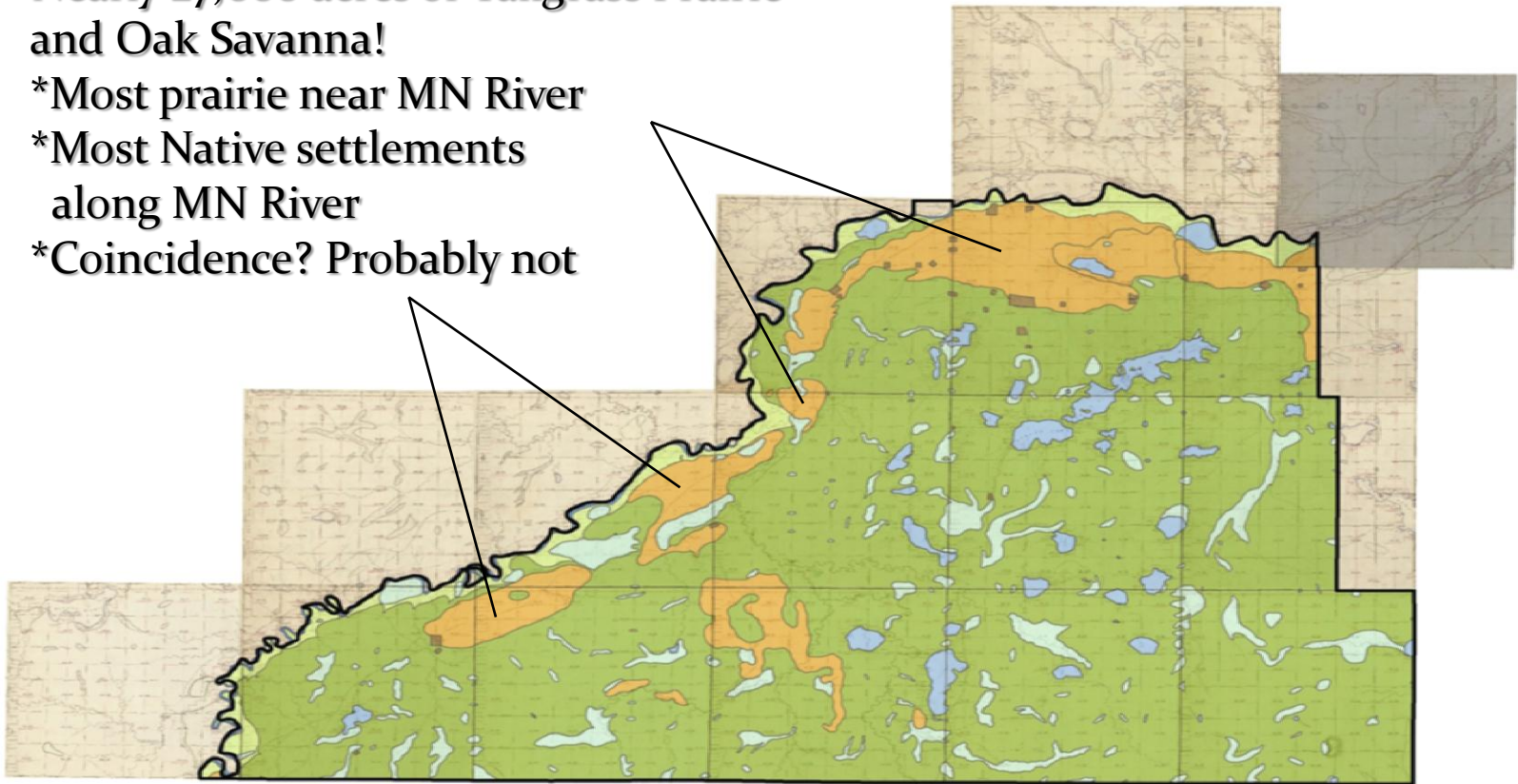
Fire and Prairie Restoration:

- Tribal descendants were the earliest fire practitioners in the region
 - European settlement in 1854 & 1855
 - PLS mapped large areas of northern Scott County that were native prairie
- Fire maintained the prairie
 - Without it, succession to forest
 - All of Scott County is in the 'Big Woods'
 - Mesic hardwood forests not prone to frequent fire

Fire and Prairie Restoration:

Nearly 27,000 acres of Tallgrass Prairie
and Oak Savanna!

- *Most prairie near MN River
- *Most Native settlements
along MN River
- *Coincidence? Probably not



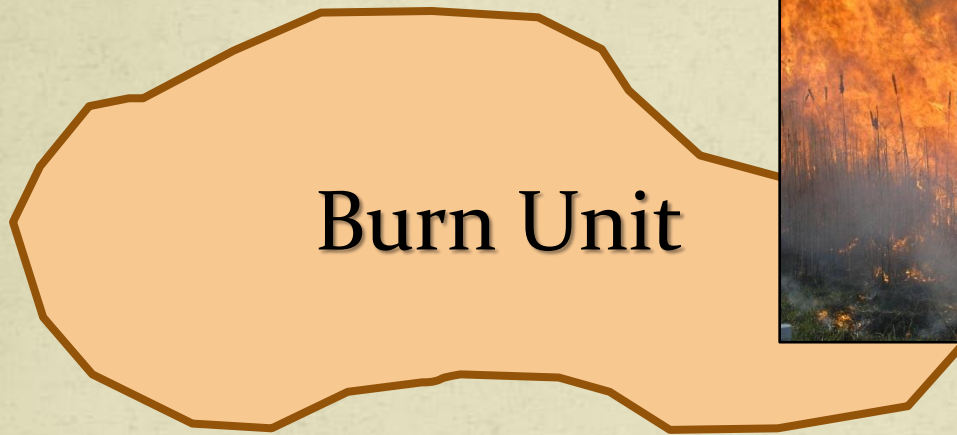
Fire and Prairie Restoration:

- Our job is to add to this legacy
 - Restore Tallgrass Prairie
 - Manage primarily with fire
- Prairie restoration has expanded
 - ~50 acres in 2004
 - ~550 acres in 2012
- Demand to burn accelerated with prairie expansion



Fire and Prairie Restoration:

- Began keeping track of fire history in 2004
 - Tracked burn dates per burn unit (i.e. prairie restorations)



Burn Unit



Burn Dates:

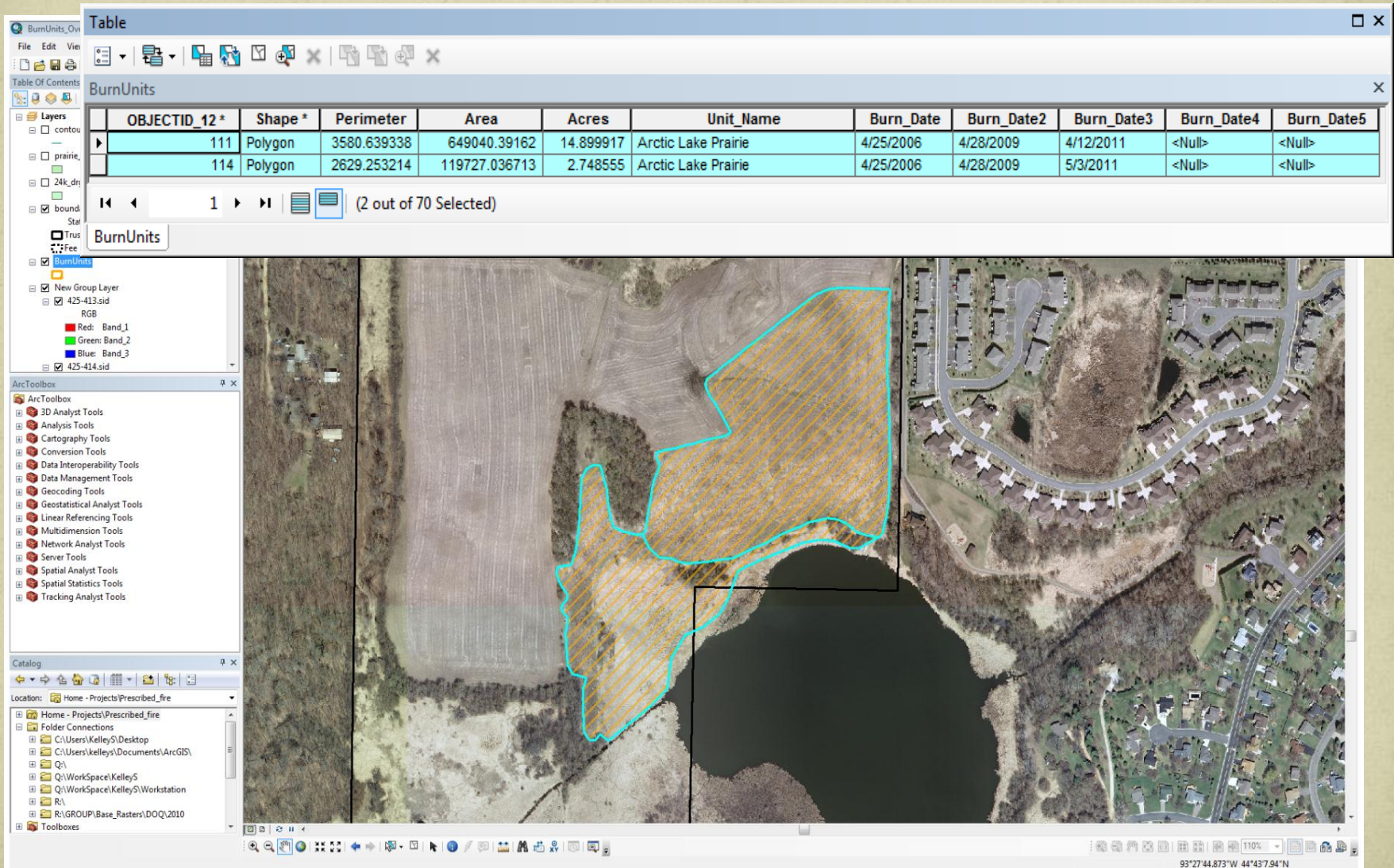
4/22/2005

4/8/2008

11/8/2011

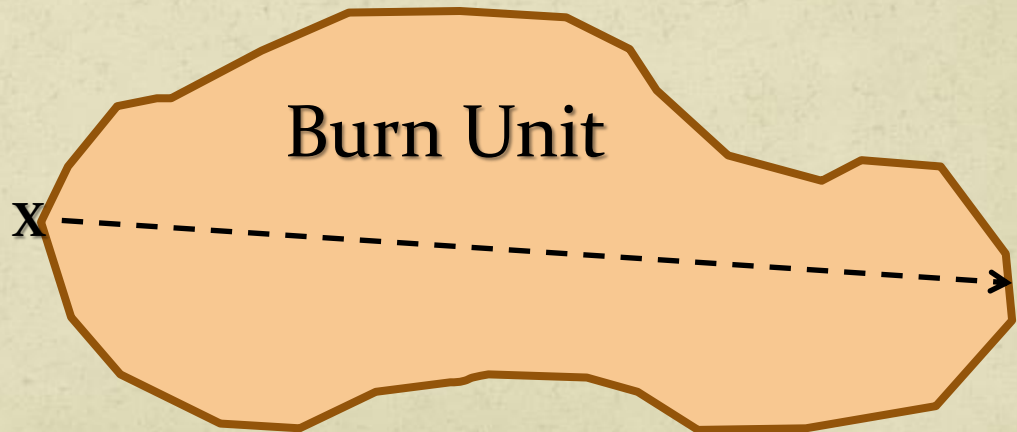
- Used a Geographic Information System (GIS)
 - Burn unit – polygon
 - Burn date(s) – attribute field

Fire and Prairie Restoration:



Fire and Prairie Restoration:

- Started tracking temporal changes in 2004
 - Picture taken at photo reference points
 - Once per month during growing season
- Goal - to see what fire effects have on prairie restorations



Fire and Prairie Restoration:



Fire and Prairie Restoration:

March



April



May



June



Fire and Prairie Restoration:

July



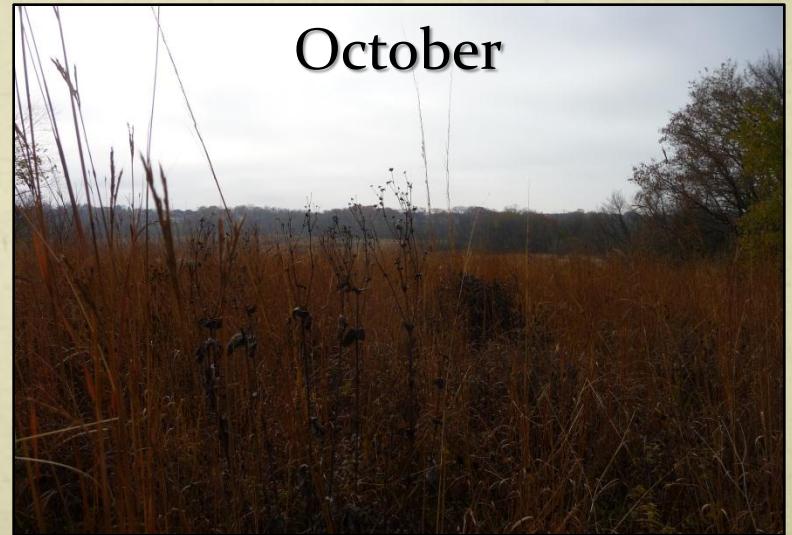
August



September



October



Fire and Prairie Restoration:

March



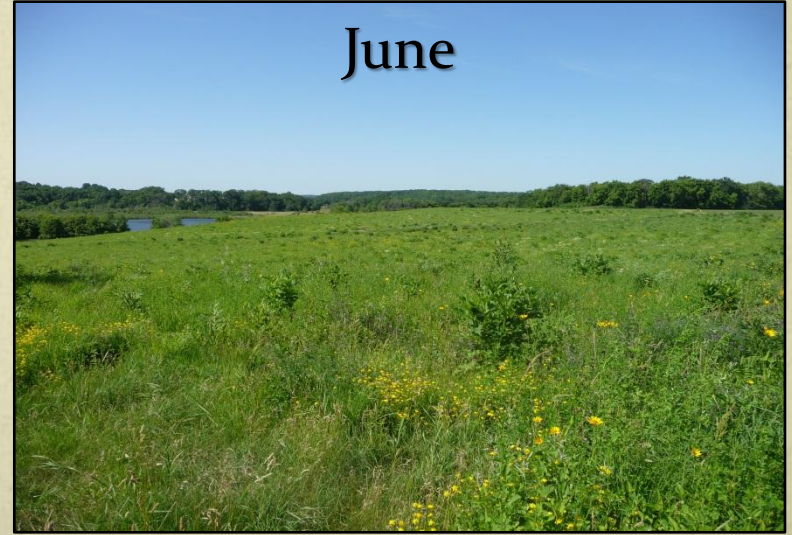
April



May



June



Fire and Prairie Restoration:

July



August



September



October



Fire and Prairie Restoration:

- Noticeable effects fire has on prairie restorations
 - Growth explosion
 - Fire acts like a steroid shot to the plants



Fire and Prairie Restoration:

- Noticeable effects fire has on prairie restorations
 - Plant diversity increases
 - Species appear that were not there before



Fire and Prairie Restoration:

- Noticeable effects fire has on prairie restorations
 - Better weed control
 - As diversity increases, prairie plants are more competitive to weeds



Fire and Prairie Restoration:

- Noticeable effects fire has on prairie restorations
 - Better habitat for wildlife
 - Fire invigorates prairie grasses and forbs
 - Produces better grassland habitat
 - Especially grassland birds
 - 2003 – 2008 breeding bird survey
 - Observed 10 of 15 species of grassland birds
 - breeding ranges overlap Tribal land

Fire and Prairie Restoration:

Species	Observed
Bobolink (<i>Dolichonyx oryzivorus</i>)	Y
Dickcissel (<i>Spiza americana</i>)	Y
Grasshopper Sparrow (<i>Ammodramus savannarum</i>)	Y
Gray Partridge (<i>Perdix perdix</i>)	Y
Horned Lark (<i>Eremophila alpestris</i>)	Y
Ring-necked Pheasant (<i>Phasianus colchicus</i>)	Y
Savanna Sparrow (<i>Passerculus sandwichensis</i>)	Y
Sedge Wren (<i>Cistothorus platensis</i>)	Y
Vesper Sparrow (<i>Pooecetes gramineus</i>)	Y
Western Meadowlark (<i>Sturnella neglecta</i>)	Y
Eastern Meadowlark (<i>Sturnella magna</i>)	N
Henslow's Sparrow (<i>Ammodramus henslowii</i>)	N
Northern Harrier (<i>Circus cyaneus</i>)	N
Swainson's Hawk (<i>Buteo swainsoni</i>)	N
Upland Sandpiper (<i>Bartramia longicauda</i>)	N

Fire and Prairie Restoration:

- Noticeable effects fire has on prairie restorations
 - Research indicates burning helps Grasshopper Sparrows
 - Breeding densities have been shown to increase > 1 yr. post burn
(Forde et. al 1984, Volkert 1992, Vickery 1993, Geller et. al 2004)
 - 2-4 years
 - Declines come with longer fire intervals
 - 5 + years
 - Possibly due to excessive litter and grass height preferences (Vickery 1993, Swengel 1996)



Fire and Prairie Restoration:

- Noticeable effects fire has on prairie restorations
 - Observed Northern Harriers (*Circus cyaneus*)
 - Evidence of American Badgers (*Taxidea taxus*)
 - Multiple den sites in larger prairies
 - Prairie restorations are meeting habitat requirements



Fire and Prairie Restoration:

- Noticeable effects fire has on prairie restorations
 - Without fire, prairie restorations would succeed to forest
 - Already have considerable encroachment problems
 - Aspen, Cottonwood, Willow, Buckthorn



Lessons Learned:

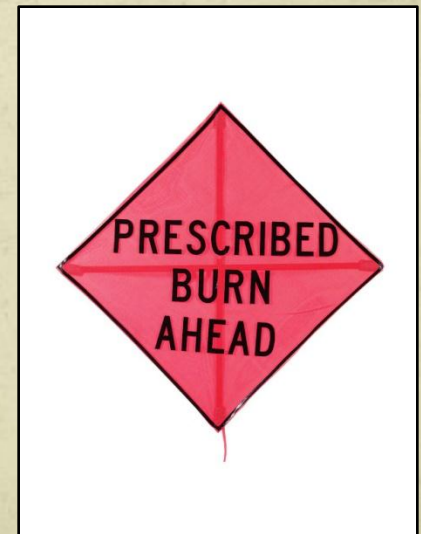
- Strive for dedicated funding
 - Money doesn't solve everything
 - Does buy training, tools, and equipment!
- Reach out to local fire professionals
 - Vast experience to tap into
 - New opportunities arise
 - Good experience for fire staff

Lessons Learned:

- Professional development
 - Burn, burn, burn!
 - Get on fires as much as possible
 - Learn from others with more experience
- Work with wary public
 - Develop relationships with local fire chiefs
 - Include the public with your intentions
 - Consider developing a small public relations campaign

Conclusions:

- Burn program has expanded
 - 1 red card to 14
 - Some PPE to NWCG standards
 - Much needed tools/equipment
 - BK radios, prescribed fire traffic signs, drip torches, flare pistol
 - 2 ATV units



Conclusions:

- Trusted local resource
 - Burned with US FWS
 - Burned with BIA
 - Helped other tribes burn that do not have fire programs
- Administered burns for local organizations
 - City of Prior Lake
 - Prior Lake/Savage area schools

Conclusions:

- Accomplished Goal
 - Have the capacity to independently conduct burns on Tribal land
 - We do accept a lot of help from the BIA!
- Capable to fight wildfires
 - Proven in 2009



Conclusions:

- What's next?
 - Expand the burn program
 - Train and equip those interested
 - Purchase more equipment
 - Type 7 slip-on
 - Build a Type 6 engine
 - Continue restoring prairie and oak savanna
 - Critically endangered habitat
 - Continue burning legacy
 - Important in Tribal culture

