Day 2 of Oak SW Michigan Workshop

1) Stands Visited:

1. White Stand (oak stand with no oak regeneration and understory dominated by mesophytic species)
    - Stand Information Sheet
    - Entire Group Discussion Summary
    - Group 1 Discussion Summary
    - Group 2 Discussion Summary
    - Group 3 Discussion Summary
    - Group 4 Discussion Summary

2. London Sale (Stand with limited advanced oak regeneration)
    - Stand Information Sheet
    - Entire Group Discussion Summary
    - Group 1 Discussion Summary
    - Group 2 Discussion Summary
    - Group 3 Discussion Summary
    - Group 4 Discussion Summary

3. Huckleberry Sale (Stand with limited oak regeneration and no advanced oak regeneration)
    - Stand Information Sheet
    - Entire Group Discussion Summary
    - Group 1 Discussion Summary
    - Group 2 Discussion Summary
    - Group 3 Discussion Summary
    - Group 4 Discussion Summary

4. Deep Lake Unit South Burn (Site with prescribed fire being used as a tool for ecosystem restoration)
    - Stand Information Sheet
    - Entire Group Discussion Summary
    - Group 1 Discussion Summary
    - Group 2 Discussion Summary
    - Group 3 Discussion Summary
    - Group 4 Discussion Summary

2) Group Participant List

3) Order of Stands Visited by Each Group

Day 2 Workshop Group Participant List

GROUP 1 leaders at end		**GROUP 2** leaders at end
Andy Henriksen		Greg Hochstetler
Carol Young		Dan Dey
Jack McGowan-Stinski		Don Bonette
Keith Konen		Donna Jones
Maria Albright		Josh Cohen
Matthew Sands		Lars Brudvig
Mike Richardson		Mark Bishop
Paul Rogers		Nicholas Sanchez
Rich Corner		Nik Kalejs
Scott Jones		Sara Schaefer
Steve Matthews		Sarah Nelson
Jesse Bramer	1* sub	Tim Payne
Pete Kailing		**John Niewoonder**
Randy Heinze		**Mark Sargent**

GROUP 3 leaders at end		**GROUP 4** leaders at end
Erin Victory		Glenn Palmgren
Chris Hoving		Aaron Korthoven
Eric Brandon		Ann Calhoun
Jesse Lincoln		Carrie Sweeney
Mike Stimak		Cindy McQueer
Nate Fuller		Denny Tison
Pat Brose		Dustin Mireles
Ray Fahsling		Greg Nowacki
Shawn Kelly		Justin Heslinga
Chad Fedewa	3* sub	Ken Kesson
Chad Krumenauer	3* sub	Kristin Bissel
		Julie Oakes
Nate DeVries		**James Miller**
Mark Mills		**Mark MacKay**

Order of Stands Visited by Each Group

Group 1	Group 2	Group 3	Group 4
Deep Lake South	**Huckleberry/ Stand 85**	**London Sale**	**White Stand**
Huckleberry/ Stand 85	**White Stand**	**Deep Lake South**	**London Sale**
White Stand	**London Sale**	**Huckleberry/ Stand 85**	**Deep Lake South**
London Sale	**Deep Lake South**	**White Stand**	**Huckleberry/ Stand 85**
Roosevelt Shelter	**Roosevelt Shelter**	**Roosevelt Shelter**	**Roosevelt Shelter**

White Stand

Take Home Point: Mature oak stand with no oak regeneration and understory dominated by mesophytic species

Current Stand Condition:

Cover Type: Oak Log Size Trees
Stand Tree Species Composition in Descending Order:
Overstory: Black, Red oak, Red Maple, White Oak
Understory: NA/Red Maple, Black Cherry, Autumn Olive, Dogwood/Pignut Hickory
Advanced Oak Regeneration: None
Age: 106
DBH for of majority of stand: 20”
Canopy Closure: 75-100
Basal Area Range: 111-140
Terrain: Level

Past Treatments/ Disturbances:

Objective(s) of treatment(s): No known treatments completed.
Type of Prescription: None
Year Treatment Initiated: N/A
Other treatments/ disturbances: Gypsy moths over multiple years. Forest health specialist suggests oak is in decline.
Monitoring: No formal monitoring points or plots in this stand

Stand Future Potential:

Hypothetical Desired Future Stand Condition (DFC): Oak or at least attempt to maintain an oak very uncertain of outcome.

Disclaimer: the included stand information comes from our stand forest inventory system and the data for “stands” often do not necessarily represent the same area as the treated “stand”. Thus BA, acres, age, etc… may not be consistent.

Barry State Game Area

Compartment: 4 **Stand Number**: 45 **Acres**: 115

White Stand Entire Group Discussion Summary:

DFC

- Oak
- Cherry

Threats

- Invasives in general area
- Acting too soon without advanced regeneration
- Red maple

Actions

- Thin from below- Focus on Red Maple (all <9 DBH)
- Herbicide Rm
- Burn- eventually
- Treat edge invasives before thin
- Monitor- Acorns and regeneration
- Thin canopy- 2 more cuts

Take your time to do actions in right order

1. Get advanced regeneration
2. Release regeneration

White Stand Group 1 (Pete Kailing, note taker) Discussion Summary:

Is Oak, as either a cover type or a significant stand component, a realistic DFC for this stand?

- *Oak can be a component*
- *Not as the dominant species*

Identify the three most significant threats to achieving this DFC, in priority order of threat.

- *Doing Nothing*
- *Competition from red maple*
- *There are zero oak (It was not seen as seedlings, saplings or pole sized)*

Identify the best potential forest management treatments to achieve DFC, if oak regeneration was an objective.

- *Canopy Gap Treatment*
- *Remove competition (Cherry, Maple/ then prescribe burn)*

In what order and time frame should these treatments be scheduled relative to one another?

1. *Remove and treat Red Maple - "Drill and Fill"*
2. *Monitor Mast*
3. *Harvest Cherry and Red Maple and some Oak to target basal area*
4. *Burn after harvest*
5. *Monitor invasives*

Can we be successful in restoring oak on this site in the absence of:

1) fire -

2) herbicide -

3) timber mgmt. –

This site will not be successful without some form of disturbance

Is monitoring of treatment efficacy critical for successful oak management on this site (***Yes***/ No)?

Yes – Use research for treatment evaluations

What monitoring protocol(s) would you recommend?

- *Monitor the canopy gaps. Does this help regenerate and extend the lifespan of the existing large oak?*
- *Monitor the mast production.*

White Stand Group 2 (John Niewoonder, note taker) Discussion Summary:

Is Oak, as either a cover type or a significant stand component, a realistic DFC for this stand?

Yes, with management – presence of large oaks – no oak regeneration occurring

Identify the three most significant threats to achieving this DFC, in priority order of threat.

- *If oak decline is present*
- *Competition from red maple/cherry*
- *Large mid-story maple – fire resistant*

Identify the best potential forest management treatments to achieve DFC, if oak regeneration was an objective.

- *Rx fire*
- *Sale if possible (firewood?)*
- *Drill & fill*

In what order and time frame should these treatments be scheduled relative to one another?

1. *Cut first (make sure not to open canopy too much)*
2. *Burn first*
3. *Monitor- adapt*

Can we be successful in restoring oak on this site in the absence of:

1) fire – *No, unless you take extreme methods with herbicide*

2) herbicide – *Yes, if timber sale & persistent fire*

3) timber mgmt – *Yes, but not ideal*

Is monitoring of treatment efficacy critical for successful oak management on this site (***Yes***/ No)?

What monitoring protocol(s) would you recommend?

- *Establish*
- *Acorn production*

White Stand Group 3 (Mark Mills, note taker) Discussion Summary:

Is Oak, as either a cover type or a significant stand component, a realistic DFC for this stand?

Yes, due to seed source but very little regeneration if any

Identify the three most significant threats to achieving this DFC, in priority order of threat.

1. *Cutting stand too soon (easy to turn into huckleberry – wait for regen)*
2. *Shade*
3. *Some invasives (garlic mustard & bedstraw)*

Identify the best potential forest management treatments to achieve DFC, if oak regeneration was an objective.

- *Herbicide red maples*
- *Maybe scarify after good acorn crop*
  (Fire wouldn't affect anything yet)

In what order and time frame should these treatments be scheduled relative to one another?

1. *Herbicides maples – now (maybe in stages?)*
2. *Scarify after good acorn crop*

Low diversity maybe residual deer graze possible & fire suppression

Can we be successful in restoring oak on this site in the absence of:

1) fire *BE VERY CAREFUL ABOUT OPENING STAND UP*

2) herbicide

3) timber mgmt

Is monitoring of treatment efficacy critical for successful oak management on this site (***Yes***/ No)?

Yes, look for acorn crop, monitor regeneration

What monitoring protocol(s) would you recommend?

20" cherry value, increment boar,

White Stand Group 4 (James Miller, note taker) Discussion Summary:

Is Oak, as either a cover type or a significant stand component, a realistic DFC for this stand?

- *Yes –The site does not have seeding competition yet*
- *Greg – Great potential for regeneration*
- *Oak is still young and you could have 50 year or so to be able to work with the regeneration*
- *Deer damage is unknown*
- *May have to use something other than fire due to the light fuel load to manage*

Identify the three most significant threats to achieving this DFC, in priority order of threat.

- *The sight is mostly clear of invasives so it would be important to be careful of letting them into the stand*
- *Lack of funding could be a problem if we are unable to burn as often as needed*
- *Mesophication*
- *Oak wilt*

Identify the best potential forest management treatments to achieve DFC, if oak regeneration was an objective.

- *Thinning from below at moderate to heavy extent – this can help add slash to the forest floor as fuel load for future burning methods*
    a. *This also will allow us to get the value/revenue out of the stand before it is burned (The Maple and Cherry)*
- *Hot spring burn before green up*

In what order and time frame should these treatments be scheduled relative to one another?

6. *Treat the surrounding area for invasives*
7. *Thin the stand*
8. *Burn in the stand*
9. *Monitor*

Can we be successful in restoring oak on this site in the absence of:

1) fire – *Yes but only with other aggressive other forms of treatment*

2) herbicide – *"Same as above"*

3) timber mgmt. – *Yes but we will lose the revenue that could be made from the stand.*

Is monitoring of treatment efficacy critical for successful oak management on this site (***Yes***/ No)?

Yes

What monitoring protocol(s) would you recommend?

- *General on site monitoring as often as necessary*

GENERAL COMMENTS:
Greg at one point stated, "If this stand is managed properly you could make boat loads of money!" ex post facto caveat from Greg: [It would be most efficient if the money collected from timber sales could stay within the department to support ongoing restoration efforts, which can be expensive and long-running, especially when prescribed burning is employed. Amendments to state legislation should be considered.]

London Sale

Take Home Point: Stand with limited advanced oak regeneration

Current Stand Condition:

Cover Type: Oak Log Size Trees
Stand Tree Species Composition in Descending Order:
Overstory: Red/Black Oak, White Oak, Red Maple, Black Cherry, Pignut Hickory
Understory Tree Species (High/Medium/Low): NA/Black Cherry/Dogwood, Red Maple, White Oak
Advanced Oak Regeneration: limited to south facing slope near parking area

Age: 127
DBH for of Majority of Stand: 20"
Size Density: Log
Canopy Closure: 50-75%
Basal Area Range: 81-110
Terrain: relatively flat with south facing slope near parking area

Past Treatments/ Disturbances:

Objective(s) of Treatment(s)/ Type of Prescription: Reduce the basal area from 120 to 90, targeting the removal of Red Maple in the canopy plus a light selection (single tree removal) cut of higher grade logs in the Red and Black Oak in order to sell the sale.
Year Treatment Initiated: Single treatment, 2002 (14 YBP)
MIFI Overall Stand Basal Area After Harvest: 81-110
Other treatments/ disturbances: No known Rx fire, TSI, or invasive work done on site
Monitoring: No formal monitoring points or plots in this stand

Future Potential Treatments:

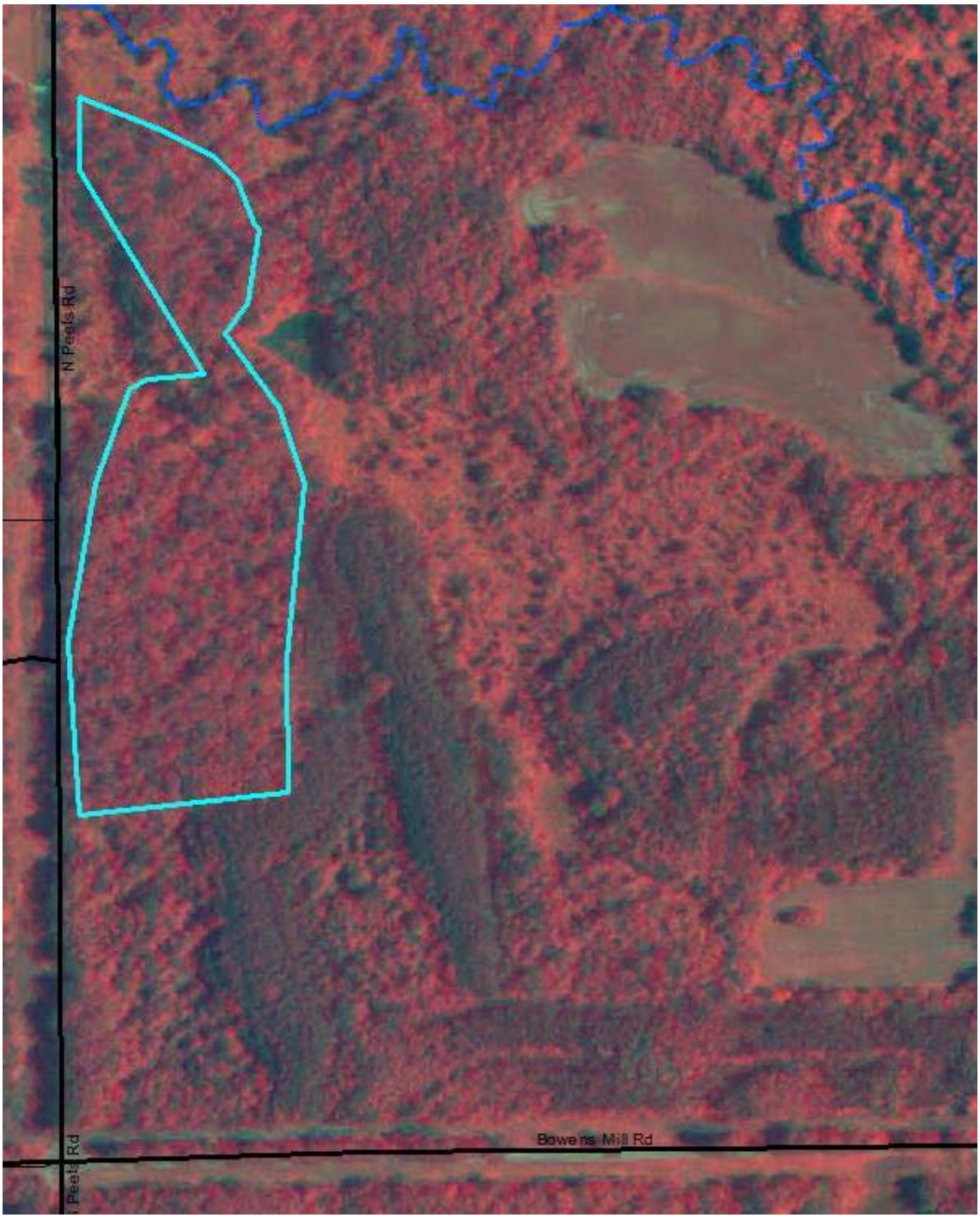
Hypothetical Desired Future Stand Condition (DFC): Oak

Disclaimer: the included stand information comes from our stand forest inventory system and the data for "stands" often do not necessarily represent the same area as the treated "stand". Thus BA, acres, age, etc… may not be consistent.

Imagery: 2005 Michigan NAIP

Barry State Game Area

Compartment: 4 **Stand Number**: 17 **Acres**: 22



London Stand Entire Group Discussion Summary:

Threats

- Do nothing
- Competition- Pine, Red Maple
- Invasives
- Oak decline
- Oak wilt

Actions

- Burn
- Thin
- Monitor
- Treat with herbicide

London Stand Group 1 (Pete Kailing, note taker) Discussion Summary:

Is Oak, as either a cover type or a significant stand component, a realistic DFC for this stand?

- *Yes but will need burning and thinning*

Identify the three most significant threats to achieving this DFC, in priority order of threat.

- *Doing Nothing*
- *Not enough fire*
- *Not enough Thinning*
- *Invasives (Scotch Pine)*

Identify the best potential forest management treatments to achieve DFC, if oak regeneration was an objective.

1. *Burn and Thin*
2. *Burn and Thin again*

In what order and time frame should these treatments be scheduled relative to one another?

1. *Burn*
2. *Thin*
3. *Repeat*

Can we be successful in restoring oak on this site in the absence of:

1) fire -

2) herbicide -

3) timber mgmt. –

This site will not be successful without burning and thinning.

Is monitoring of treatment efficacy critical for successful oak management on this site (***Yes***/ No)?

Yes

What monitoring protocol(s) would you recommend?

- *Monitoring should include invasives*
- *Set up permanent sampling plots*
- *Answer questions about Desired Future Condition*

London Stand Group 2 (John Niewoonder, note taker) Discussion Summary:

Is Oak, as either a cover type or a significant stand component, a realistic DFC for this stand?

Yes, seedlings and saplings are present, more open canopy

Identify the three most significant threats to achieving this DFC, in priority order of threat.

- *Competition from scotch pine*
- *Oak decline potential*
- *Maybe a lack of fuel to carry fire (not time to burn)*

Identify the best potential forest management treatments to achieve DFC, if oak regeneration was an objective.

- *Rx burn at some point*
- *No need for herbicide*
- *No need for timber*

In what order and time frame should these treatments be scheduled relative to one another?

No rush, this is on oak site. What are specific objectives? Oak savanna? Oak forest? Monitoring.

Can we be successful in restoring oak on this site in the absence of:

1) fire – *Yes, but fire would help*

2) herbicide - *Yes*

3) timber mgmt. - *Yes, for the foreseeable future*

Is monitoring of treatment efficacy critical for successful oak management on this site (***Yes***/ No)? *Yes, especially invasives*

What monitoring protocol(s) would you recommend?

Walk through. Not a top priority because it's working.

London Stand Group 3 (Mark Mills, note taker) Discussion Summary:

Is Oak, as either a cover type or a significant stand component, a realistic DFC for this stand?

Yes, plenty of oak regeneration, but not dominant. There will be challenges. Interventions & treatments necessary.

Identify the three most significant threats to achieving this DFC, in priority order of threat.

1. *Red maple, deer browse*
2. *Invasive species (post cut), spot spray basal bark*
3. *Lack of stump sprouting, lose acorn production*

Identify the best potential forest management treatments to achieve DFC, if oak regeneration was an objective.

- *Basal bark treatment*
- *Invasive species treatment*
- *Couple burns (aggressive) but fire may damage oak regeneration – late spring after maples leaved out*
- *Staggered entry with 2 stage shelter wood. Crop tree management – be cautious with disturbing soil*

In what order and time frame should these treatments be scheduled relative to one another?

1. *Burn (mid-may between sprouting of red maple and oak) maybe even consecutive years*
2. *Herbicide*
3. *At some point cut (even clear-cut) maybe leave white oaks, but could be wolf tress*
4. *Maybe burn again*

Can we be successful in restoring oak on this site in the absence of:

1) fire – *Yes, with other treatments (possible but more work)*

2) herbicide – *Depends on goals – mechanical*

3) timber mgmt. - *No*

Is monitoring of treatment efficacy critical for successful oak management on this site (***Yes***/ No)?

What monitoring protocol(s) would you recommend?

Visual – walk through

London Stand Group 4 (James Miller, note taker) Discussion Summary:

Is Oak, as either a cover type or a significant stand component, a realistic DFC for this stand?

- *Yes*

Identify the three most significant threats to achieving this DFC, in priority order of threat.

- *Lack of oak regeneration*
- *There is a lot of competition already in the stand*
- *Invasives are moving into the stand*
- *Funding for fire prescription*

Identify the best potential forest management treatments to achieve DFC, if oak regeneration was an objective.

- *Stress the old oak by adding more holes in the canopy*
- *Remove the understory Cherry*
- *Sassafras can be overwhelming*
    a. *Responds well to disturbance and fire just like oak*
    b. *Can be chemically treated before or after a burn*

In what order and time frame should these treatments be scheduled relative to one another?

1. *Thin the stand to utilize what revenue we can*
2. *Burn*
3. *Thin again*
4. *Burn again*
5. *Spray*
6. *Monitor*

Can we be successful in restoring oak on this site in the absence of:

1) fire – *Yes but only with other aggressive other forms of treatment*

2) herbicide – *"Same as above"*

3) timber mgmt. – *Yes but we will lose the revenue that could be made from the stand.*

Is monitoring of treatment efficacy critical for successful oak management on this site (***Yes***/ No)?

Yes

What monitoring protocol(s) would you recommend?

- *General on site monitoring as often as necessary*
- *It was stated that this would be a good site for seedling surveys*

Huckleberry Sale

Take Home Point: Stand with limited oak regeneration and no advanced oak regeneration

Comments Unique to Stand:

Can compare this to unmanaged stand(s) across Fire Tower Trail.

Current Stand Condition:

Cover Type: Mixed Deciduous Log stand
Stand Tree Species Composition in Descending Order:
Overstory: Bigtooth Aspen, Black/Red Oak, Red Maple, White Oak, Black Cherry
Understory Tree Species (High/Medium/Low): NA/Red Maple, Flowering Dogwood/Black Cherry
Advanced Oak Regeneration: Trace amounts of oak regeneration below browse height.
Age: 86
DBH for of majority of stand: 12”
Canopy Closure: 75-100
Basal Area Range: 75-100
Terrain: Slightly hilly (NW?)

Past Treatments/ Disturbances:

Objective(s) of treatment(s): oak regeneration
Type of Prescription: Shelterwood. Clearcut to 2" DBH, leave oak and hickory > 18"dbh
Year Treatment Initiated: 2009
MIFI Overall Stand Basal Area After Harvest: 75-100
Other treatments/ disturbances: significant gypsy moth multiple years, added to oak decline
Monitoring: No formal monitoring points or plots in this stand

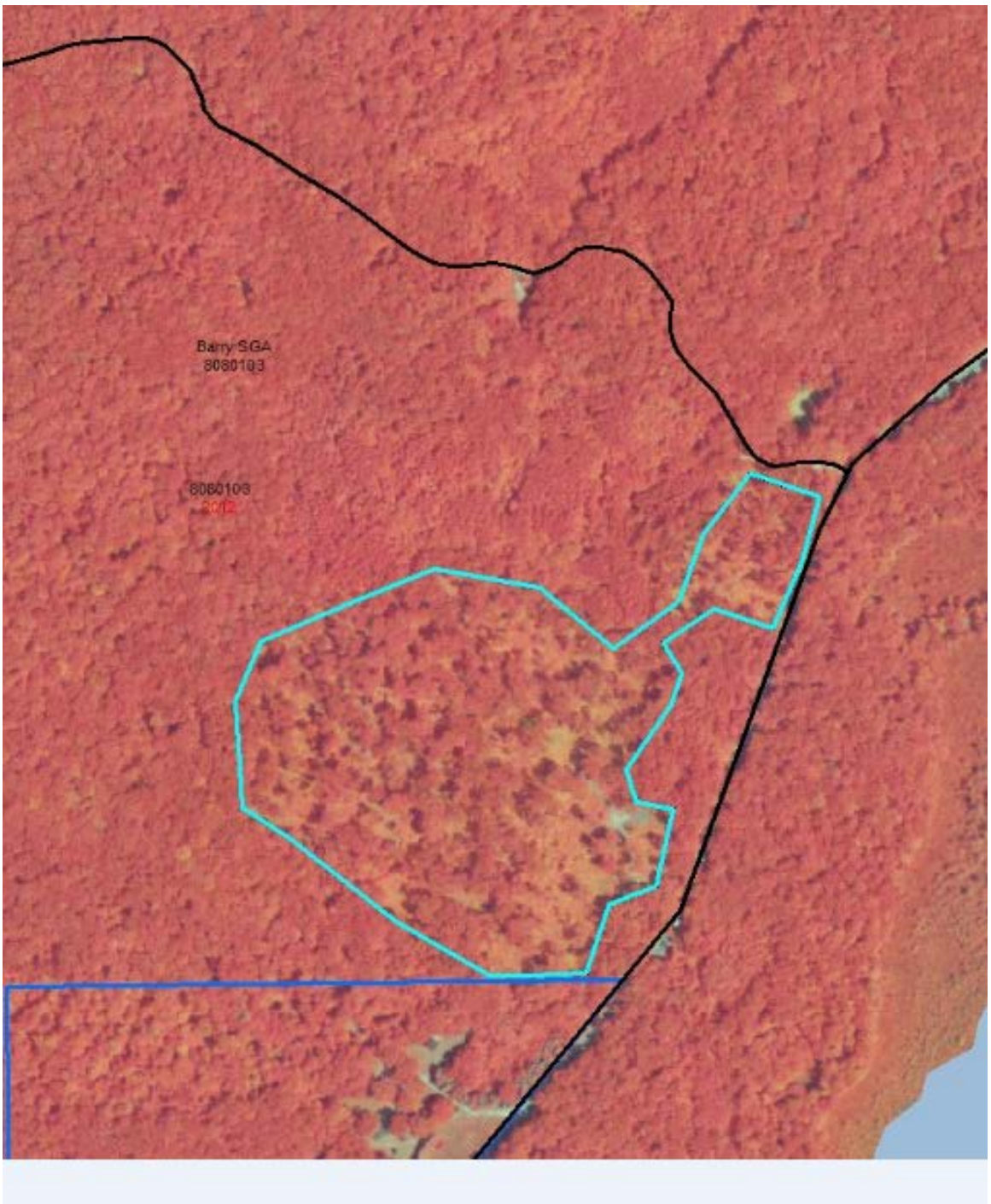
Future Potential Treatments:

Hypothetical Desired Future Stand Condition (DFC): Oak (unsure whether it will come back to 50% or greater oak)

Disclaimer: the included stand information comes from our forest stand inventory system and the data for “stands” often do not necessarily represent the same area as the treated “stand”. Thus BA, acres, age, etc… may not be consistent.

Barry State Game Area

Compartment: 3 **Stand Number**: 81 **Acres**: 20



Huckleberry Stand Entire Group Discussion Summary:

DFC

- Oak with hard work and money
- Maintain diverse site

Threats

- Competition!- Aspen, Red Maple
- No advanced Oak regeneration

Actions

- Fire
- Herbicide
- Harvest
- None- redefine objectives/DFC
- Mechanical

Learn from this

- Burn
- Monitor for Regeneration
- Cut

Huckleberry Stand Group 1 (Pete Kailing, note taker) Discussion Summary:

Is Oak, as either a cover type or a significant stand component, a realistic DFC for this stand?

- *Yes but at lesser densities*
- *Keep 10-25% minimum*
- *Site will need a lot of work*

Identify the three most significant threats to achieving this DFC, in priority order of threat.

- *Competition from aspen, maple, ect…*

Identify the best potential forest management treatments to achieve DFC, if oak regeneration was an objective.

- *Did oak regen from prior treatment?*
- *Herbicide the poles*
- *Mechanical treatment around the regeneration*
- *"Baby sit" a few oak as future seed trees via "Doughnut" or canopy gap management.*

In what order and time frame should these treatments be scheduled relative to one another?

UNANSWERED

Can we be successful in restoring oak on this site in the absence of:

1) fire -

2) herbicide -

3) timber mgmt. –

This site will not be successful without all of these forms of treatment

Is monitoring of treatment efficacy critical for successful oak management on this site (***Yes***/ No)?

**UNANSWERED* but assumed yes*

What monitoring protocol(s) would you recommend?

- *Monitor doughnuts to see how successful it was*
- *Monitor canopy gaps*
- *integrate various techniques of shelterwood, clearcut, herbicide, pressure, fire*
    a. *Not an optimum site*

Huckleberry Stand Group 2 (John Niewoonder, note taker) Discussion Summary:

Is Oak, as either a cover type or a significant stand component, a realistic DFC for this stand?

Acorn source remains, but still very difficult to achieve oak regeneration as abundant regeneration of red maple, aspen, cherry, sassafras, multiflora rose

Identify the three most significant threats to achieving this DFC, in priority order of threat.

- *Competition from non-desired species*
- *Lack of oak seedlings in understory*
- *Aspen cloning*

Identify the best potential forest management treatments to achieve DFC, if oak regeneration was an objective.

- *Rx fire – repeated (growing season)*
- *Mid-story removal*
- *Herbicide – hack and spray*

In what order and time frame should these treatments be scheduled relative to one another?

1. *Rx burn (commercial sale if possible)*
2. *Evaluate*

3. *Hack and spray – herbicide*

Can we be successful in restoring oak on this site in the absence of:

1) fire – *No, non-desired, understory too abundant*

2) herbicide – *Yes, but would be difficult, expensive and slow*

3) timber mgmt. – *Yes, but again difficult without this tool*

Is monitoring of treatment efficacy critical for successful oak management on this site (***Yes***/ No)?

What monitoring protocol(s) would you recommend?

Annual walk through would be sufficient since it is obvious what needs to be done.

What would we do differently?

Start with a burn or treat mid-story with herbicide. The monitor > achieve understory > seed tree layer

Huckleberry Stand Group 3 (Mark Mills, note taker) Discussion Summary:

Is Oak, as either a cover type or a significant stand component, a realistic DFC for this stand?

Realistic DFC – very slim chance for oak regeneration. No, not right now

Identify the three most significant threats to achieving this DFC, in priority order of threat.

1. *Lack of Oak seedlings*
2. *Other trees shading*

Identify the best potential forest management treatments to achieve DFC, if oak regeneration was an objective.

1. *Burn? But only if you have a bunch of money – hot and high*
2. *Find another objective (or allow canopy to close again)*
   If control red maple

In what order and time frame should these treatments be scheduled relative to one another?

Not cost effective

Can we be successful in restoring oak on this site in the absence of:

1) fire - *No*

2) herbicide - *No*

3) timber mgmt. - *No*

Is monitoring of treatment efficacy critical for successful oak management on this site (Yes/ No)?

What monitoring protocol(s) would you recommend?

Huckleberry Stand Group 4 (James Miller, note taker) Discussion Summary:

Is Oak, as either a cover type or a significant stand component, a realistic DFC for this stand?

- *Yes but only with very intense management*

Identify the three most significant threats to achieving this DFC, in priority order of threat.

- *Lack of oak regeneration – said by Greg*
- *Competition*
- *The regenerating aspen will slow the chances of oak regeneration*

Identify the best potential forest management treatments to achieve DFC, if oak regeneration was an objective.

- *Mechanical treatment by means of a roller chopper*
- *Prescribed burn*
- *Opening the forest canopy*
- *Thinning the understory dramatically*

It was stated that if the competition is not killed off then this site will be lost for oak regeneration.

In what order and time frame should these treatments be scheduled relative to one another?

These treatments would all have to be used very aggressively and repeated multiple time in the order listed above to have any chance in making this site have oak regeneration.

Can we be successful in restoring oak on this site in the absence of:

1) fire –

2) herbicide –

3) Timber management

The likelihood of this stand reaching its current DFC without all 3 of these forms of management working together would be disappointingly low. This site will require all three methods and them some to get the current DFC.

Is monitoring of treatment efficacy critical for successful oak management on this site (***Yes***/ No)?

Yes

What monitoring protocol(s) would you recommend?

- *General on site monitoring as often as necessary*

GENERAL COMMENTS:

Greg made a short mention at this site that the biodiversity is much higher on this site. That could indicate that it has better soil. Just like in his presentation the day before he stated that the better soil/environment you have the harder it is to maintain and regenerate your oak.

The group also agreed that this site may now be better suited for Aspen regeneration than oak regeneration. It may be beneficial to be flexible with this stand outcome and change the current DFC.

Deep Lake South Burn

Take Home Point: Site with prescribed fire being used as a tool for ecosystem restoration.

Comments Unique to Stand: cover type mapping completed in 2005, before burning

Current Stand Condition:

Cover Type: Oak Log
Stand Tree Species Composition in Descending Order:
Overstory: Black/Red,White Oak, Red Maple
Understory Tree Species (High/Medium/Low): NA/Red Maple, Autumn Olive, S.Tartatian Honeysuckle/Black Cherry
Advanced Oak Regeneration:
Age: 105
DBH for of majority of stand: 18"
Canopy Closure: 75-100%
Basal Area Range: 171-200
Terrain: Hilly, numerous aspects/ slopes

Past Treatments / Disturbances:

Objective(s) of treatment(s): Reduce invasive shrubs and red maple in understory. Begin to gradually thin canopy in some areas to allow more light to the forest floor.
Type of Prescription: No documented known timber harvest ; Rx Burn south of the road leading from the campground entrance to the boat launch
Year Treatment Initiated: 04/24/2007 (treatment record YS-07-01) and on 05/06/2014 (treatment record YS-14-005).
2007 Fire:
fire weather day of burn: 68-71F; RH 30; no precipitation; < 10% cloud cover
fire behavior observed: 1-3' flame height; spreading to running fire
fire effects: 90% blackened; Severity S3V2; Char height 5-10'; scorch height 10-20'
2014 Fire:
fire weather day of burn: 55-66F ; RH 46 – 30; Wind Speed 11-14; 10% cloud cover
fire behavior observed: 6"-5' flame height; creeping to spreading fire, variable (400 acre burn)
fire effects: 95% blackened; Severity S3V2; Char height 6'; scorch height 10'

Other treatments/ disturbances: Gypsy moth outbreak in this stand in the mid-late 1990's, again in 1999, and in 2009. gypsy moth aerial spraying of Bt in the campground in May 1999 and again May 2009
Monitoring: No formal monitoring points or plots in this stand

Future Potential Treatments:

1) **Hypothetical Desired Future Stand Condition (DFC):** Dry-mesic southern forest natural community (maintain O9 cover type).
2) **Potential Threats to Achieving Stand DFC:** Invasive species and excessive shading out-competing natural dry-mesic southern forest groundcover and preventing oak regeneration. Also oak wilt is a serious potential threat in this stand, especially because of the campground and constant firewood source and associated risk of injury to oaks during the growing season.
3) **Proposed Future Treatments:** Continue prescribed burning roughly every 3-8 years for several cycles (timing and seasonality variable depending on observed effects from previous burns). Begin some chemical/mechanical control of invasive shrubs/trees and red maple if resources (funding/staff time) allow in the future, but at this time resources do not allow additional attention at this site.

Disclaimer: the included stand information comes from our stand forest inventory system and the data for "stands" often do not necessarily represent the same area as the treated "stand". Thus BA, acres, age, etc… may not be consistent. **Imagery**: Michigan NAIP 2014 imagery

Yankee Springs Recreation Area

Compartment: 1 **Stand Number**: 39 **Acres**: 74

Deep Lake South Burn Stand Entire Group Discussion Summary:

DFC

- Oak Community

Threats

- Oak wilt
- Lack of ability to burn
- Competition- sassafras
- Mixed use

Action

- Burn
- Herbicide- If needed for Sassafras
- Thin

Deep Lake South Burn Stand Group 1 (Pete Kailing, note taker) Discussion Summary:

Is Oak, as either a cover type or a significant stand component, a realistic DFC for this stand?

- *Yes – Dominant canopy is oak, ~105 years old.*
- *This stand could be used as an educational opportunity*
- *Timber removed could be used in future firewood sales out of the campground and burnt in the campground*

Identify the three most significant threats to achieving this DFC, in priority order of threat.

- *Invasives*
- *Doing nothing – depending on the regional goals for the ecosystem and timber management*
- *Doing partial treatments without follow up*
- *Oak wilt from burning*
- *No monitoring*

All of these are under the assumed 200 year life span of the oak already in the system.

Identify the best potential forest management treatments to achieve DFC, if oak regeneration was an objective.

1. *Reduce Basal Area (Via Timber Sale)*
2. *Reduce Canopy to improve daylight to forest floor and help burns spread*

In what order and time frame should these treatments be scheduled relative to one another?

1. *Burn this site in 2 weeks to better kill off Autumn Olive*
2. *Prior burns may be too early – Burn Summary lacks detail of plant emergence*

Can we be successful in restoring oak on this site in the absence of:

1) fire -

2) herbicide -

3) timber mgmt. –

You will need one of these three to restore oak
Need fire or herbicide to sustain
Timber Harvest alone will not like be enough to restore the site

Is monitoring of treatment efficacy critical for successful oak management on this site (***Yes***/ No)?

Yes

What monitoring protocol(s) would you recommend?

Discontinue burning during oak wilt period – good idea

1. *Inventory – large scale – get up front*
2. *Ask monitoring questions – tie into objectives for the stand*
3. *Yield the date we need to collect*
4. *Place information into Master Plans and Forestry Plans*

Deep Lake South Burn Stand Group 2 (John Niewoonder, note taker) Discussion Summary:

Is Oak, as either a cover type or a significant stand component, a realistic DFC for this stand?

Yes, a bit patchy – we have some oak seedlings.

Identify the three most significant threats to achieving this DFC, in priority order of threat.

- *No timber harvest direction*
- *Competition from undesirables (cherry, sassafras)*
- *Closed Canopy*

Identify the best potential forest management treatments to achieve DFC, if oak regeneration was an objective.

3. *Fire frequency increase*
4. *Timber sale*
5. *Consider same spot herbicide treatment*

In what order and time frame should these treatments be scheduled relative to one another?

3. *Rx burn*
4. *Rx burn*
5. *Monitor & open canopy*

Can we be successful in restoring oak on this site in the absence of:

1) fire - *No*

2) herbicide - *Yes*

3) timber mgmt. *– Not in the long run, need to remove canopy*

Is monitoring of treatment efficacy critical for successful oak management on this site (***Yes***/ No)?

What monitoring protocol(s) would you recommend?

- *Monitor invasives*
- *Understory competition*
- *Oak seedling by size class*

Priority: priority high to get after cherry, maple understory. (Rx burn)

Deep Lake South Burn Stand Group 3 (Mark Mills, note taker) Discussion Summary:

We focused on area east of trail – young stand

Is Oak, as either a cover type or a significant stand component, a realistic DFC for this stand?

Yes, dry mesic southern hardwoods

Identify the three most significant threats to achieving this DFC, in priority order of threat.

1. *Oak wilt (diseases)*
2. *Budgeting restrictions to prevent burns*
3. *Invasives mirror threat*

Identify the best potential forest management treatments to achieve DFC, if oak regeneration was an objective.

Depends on final goal. Timber thinning a must – willing to wait.

- *No regeneration right now – low*
- *Thinning – open canopy – selectively & keep acorn producers light*
- *Maybe scarify*

**lots of room to experiment.*

In what order and time frame should these treatments be scheduled relative to one another?

1. *Thin*
2. *Burn (maybe scarify for more oak regeneration)*

Can we be successful in restoring oak on this site in the absence of:

1) fire – *No, grow cherry & sassafras*

2) herbicide - *Probably*

3) timber mgmt. – *No, long term*

Is monitoring of treatment efficacy critical for successful oak management on this site (Yes/ No)?

No definite yes

What monitoring protocol(s) would you recommend?

Deep Lake South Burn Stand Group 4 (James Miller, note taker) Discussion Summary:

Is Oak, as either a cover type or a significant stand component, a realistic DFC for this stand?

- *Yes*

Identify the three most significant threats to achieving this DFC, in priority order of threat.

- *Sassafras*
- *Getting burns within the preferred time limit*
- *Oak wilt*
- *Invasives being brought in by bikers who use the trail*

Identify the best potential forest management treatments to achieve DFC, if oak regeneration was an objective.

- *Herbicide*
- *Fire*
- *Possible thinning*

In what order and time frame should these treatments be scheduled relative to one another?

1. *Treat the site for unwanted species with herbicide*
2. *Thin the site to go along with area goals and generate some revenue*
3. *Burn the site*
4. *Monitor*

Can we be successful in restoring oak on this site in the absence of:

1) fire – *The group had mixed reviews. Some said yes but the others who did not agree stated it would be almost impossible on such a large scale.*

2) herbicide *– This would not be realistic due to the sassafras that is already in the stand along with other undesired species.*

3) timber mgmt. *– Yes but the stand will no longer be able to generate revenue*

Is monitoring of treatment efficacy critical for successful oak management on this site (***Yes***/ No)?

Yes

What monitoring protocol(s) would you recommend?

- *General on site monitoring as often as necessary*

GENERAL COMMENTS:

It was seen at this site that there was oak regeneration in linear lines along the bike path. This was stated by Greg to be more solid evidence of how well oak does with disturbance.

Parting thoughts from the Oak Gods

Greg says: Practice adaptive management plan, do reflect, plan, do, learn

Dan says: Hold workshops and gather to learn; meet/talk with each other to learn

Pat says: Remember why you are doing management (who are your clients?)

- Species habitat
- Future generations of Americans

To Do in Future:

- Define DFC
- Define objectives
- Know your mix of sites and work in sites based on priority
- Long term thinking
- Regional planning
- Treat because resource needs it

Make sure you have advanced regeneration

Be deliberate in actions, not afraid to act

Take advantage of staff and budget

Use all types of monitoring

Next Steps:

- Add Savanna element
- Include fire staff and upper management (policy makers) & Forestry
- Dan Dey will return to talk to more people such as policy makers
- Consider another time of year
- Joint meeting/Cross Training (Wildlife, Foresters, loggers, ecologists,
- silvicultaralists)
- Adjust size and presentation focus- Could have more, but field trip needs to be limited
- Develop monitoring protocol that's easily used
- Oak BMPs
- Pick oak site regeneration if possible