

Forest Stand Improvement Stakeholder Meeting
02/02/21

City Staff

Presenter - Clark Christenson

Moderator - Jim Shoberg

Listening: Jessica Haig, Jessica Peterson, Diane Desotelle

Stakeholder Attendees

Craig Sterle

Dave Antonson

David Demmer

Daryl Peterson

Daniel Maki

Mark Wallis

Jim Sanders

General Notes

1. Make note that of the 10k green space that there is actually 15k of greenspace acres recognized by the public as city parks.
2. Put trails and street labels on maps
3. Need to invite east snowmobile club and equestrian club to see presentation and comment on the project impacts to Snively Trail use in winter.
4. Break out potential profits and how they will cover the cost of restoration?
5. Add additional thinning acreage to zoo red pine plantation slide

Stakeholder Comments

1. Jim Sanders – I will have some more detailed questions at some point, probably this spring. I spent some time looking at the stands around the 2 trails this fall. I'll want to better understand the harvest prescription, trail mitigation for both the Pine Woods & Plantation trails and then any follow up work as it relates to both the hiking trails & Hawk Ridge.
2. David Demmer – What action will be taken to protect transport of invasive species from stand to stand. Equipment must be cleaned between sites.
3. Craig Sterle – Ikes interested in Spirit Mountain stand and have thoughts on management and will share with City once done.
 - a. Consider girdling rather than removal and do that treatment away from trail
 - b. Encourage hemlock on this site and collect seed
 - c. Consider City backing City to cover any vandalism to equipment to encourage loggers to come to town
4. Need to talk to loggers ahead of time to let them know the details of the project to lessen their concerns to working in Duluth
 - a. Josh hull and Jim McCabe Jr.
5. To work this into logger schedule City may need multiple winters to accomplish this.

February 11, 2021

Forest Stand Revival Public Meeting

Overview

Revival = restoration: Goal is to improve forest plant community by first thinning and next seeding in native species.

Described what a Native Plant Community is and the general types we see in Duluth – provided info on the State of MN field guide to inform the public about NPCs and how they help us manage these areas and understand their natural succession and help it reach its' full potential.

Described the difference between restore/revive a NPC vs perpetuate a NPC. For both, restore invasive species, next thin by removing a quarter to half the trees to provide more moisture and sunlight to improve the health of a tree(s). Provide sun to forest floor for re-growth. Next for restore, introduce the species that are not there; for perpetuate prepare the ground for better seed germination. Then protect the site from browse as needed and monitor the site.

Emphasized that when you thin a forest, the slash stays and provides nutrients, erosion control and habitat for small critters to the soil and encourage re-growth.

Questions: No questions for this section

Amity Creek Site (3 stands north to south along Amity Creek)

Thin once, let them grow and re-evaluate.

Questions:

1. Can you make it look less like a plantation? We can try. It may be easier at Hawk Ridge.
 2. Will you work in the riparian mgmt. zone? – We will be following the MFRC field guide for timber mgmt. which includes setbacks and protection features.
 3. Are you working near the deeps? No...there is good stands of old growth pine there and owls nesting there.
-

Hawk Ridge Site (3 stands, Red Pine, Scotts Pine and White Spruce)

NPCs would be red oak, white pine, paper birch, but MNDNR thought aspen, paper birch. So we will work to make sure it is a native species that does well there. Goal thin stands and seed in.

Questions: More general

1. Are there less invasive options to removing trees than logging? You can girdle the trees or just drop them. Stressing trees by girdling can brood pests that could move to healthy trees. Also these unnatural stands can be a greater fire danger issue and burn hotter.\
 2. Will logging occur after bird nesting season? Typically logging would be late summer / fall which is probably after most birds have nested.
 3. There is a lot of buckthorn and popple. Will you address this? Not with aspen if it is growing well. Would like to see White Pine here.
 4. Clarified the lands are in Amity Park not the HOA lands
-

Hartley (3 stands)

Soils very fine textured which is not great for Red Pine. Makes it hard to handle the stress of remaining standing. Thinning will help trees grow bigger and reduce the thinning crowns and wind throw impacts. Goal is to thin a couple more times for two of the stands and once for another stand to increase light and moisture for seeding.

Questions:

1. Too many aspen, so opposed to it. Agreeing to deer not eating natural seeding trees.
 2. What about working with ornithologists and wildlife experts so they are not impacted? We can't meet all needs all the time. Looking at it from a wider scope we are affecting about 1% of the forest in the city. But discussion we look to have is reducing E, T, S species. In the long term, we hope to encourage better habitat. City is consulting with MNDNR and other partners to meet the best practices for the project.
 3. Has risk of erosion of RMZ soils been considered at Amity Creek which has a turbidity issue. Yes, that is where the BMPs will be required under the MFRC guidelines. They are designed to provide buffers based on slopes to reduce sedimentation which leads to erosion.
-

Enger (3 areas)

Thin, seed and remove Scot's

Questions: None

Golf Course (2 stand types scattered around)

Rocky area in the middle that not suitable for trees. Dense plantation and monotypic aspen. Goal: Increase conifer presence and promote longer lived species. Thin at least 2 more times for Red Pine and thin aspen followed by seeding in.

Questions: None

Zoo (3 stands)

White pine east of the creek not doing well. Provide room for growth and a better cone crop. Red Pine growing well, but thinning will increase growth. Aspen stand...buckthorn has been removed. Trees not real tall and signs that they don't do well here. Thin aspen once and encourage confers.

Questions: None

General comments on habitat and wildlife: These stands do not provide good habitat for species, but increasing biodiversity encourages habitat for a more diverse species.

Spirit Mountain (4 stands)

NPC is a cedar, yellow birch site. Top of hill birch, maple and aspen. Aspen thin to encourage other species. Moving downhill cedar, balm of gilead to cedar, white pine and aspen, birch. Cedar harbors deer. Re-generation is the main problem here...nothing coming up underneath. Goal: maintain and expand conifer influence, reduce trail maintenance by removing nearby dying trees. Thin aspen, spruce birch, poor white pine. Create broken canopy to allow sunlight to reach the forest floor. There is a group

that would like to partner with the City and work on this site manually. Nothing official yet, but in the talking stages.

Questions:

1. Were there seedlings planted along Knowlton by stream corps? Yes with the creek restoration and then by the City in the openings including the stand 1 area.
2. How will scarify the soil without rutting the site? Stand 4 is where we are looking to scarify. We won't work on the steep slopes. Stay in areas to reduce erosion. Scarify can be done with hand crews, lighter equipment. This site would need to be harvested in the winter to reduce rutting as well.
3. What tree species are being planted in light of Climate Change and pests? We will not plant ash due to EAB. As for climate change species, it is difficult to predict. Learning and planting a diversity of species. Of the 108 acres we are looking at 84 of them do not have a mix of tree species. First putting trees best suited for the site. Then going beyond that we will need to monitor and adapt.
4. Will hemlock be considered? Yes, it is complicated getting them to germinate, but we are very interested. We will need to apply for a permit with MNDNR to seed them and would protect them as it is an endangered species.

From: [Jim Shoberg](#)
To: ["Craig Sterle"](#); [Clark Christenson](#)
Cc: [John Lindgren - DNR](#); [Judy Gibbs](#); [Mike Schrage](#); [Nancy Schuldt](#); [Merrick, Glenn W](#); [Molly Thompson](#); [cic RICH/Carol STAFFON](#); [Diane Desotelle](#); [Kate Van Daele](#)
Subject: RE: Last evening's NRC meeting
Date: Friday, February 5, 2021 12:26:47 PM
Attachments: [image003.jpg](#)

Craig,

Thank you for this well thought out perspective on the Knowlton stand and thank you for offering to look at ways to help us out! I think we all agree the need to see natural regeneration here and we are willing to look at alternative methods. We would like to discuss how best to do this with you ahead of the next public meeting on the 11th. We understand that you need a few more weeks to further develop a commitment to help at this location. I think our goal would be to develop consistent messaging on how to treat this stand so our joint messaging is the same.

Can we find some time next week that works? Clark and I are open the morning of the 9th between 8 and 10am.

Look for another email following this that will have the presentation that was used at the recent NRC meeting. Also a link to the public meeting is on the City events calendar found on the home page here: <https://duluthmn.gov/>

Thank You,

Jim

James M. Shoberg, PLA

Senior Parks Planner

Landscape Architect

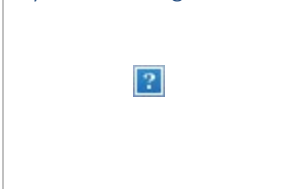
Property and Facilities Management | City of Duluth

1532 W. Michigan Street | Duluth, MN 55806

218-730-4415 (office) | 218-208-9632 (cell)

jshoberg@duluthmn.gov | www.duluthmn.gov/parks

City of Duluth logo



From: Craig Sterle

Sent: Thursday, February 4, 2021 3:35 PM

To: Jim Shoberg ; Clark Christenson

Cc: John Lindgren - DNR ; Judy Gibbs ; Mike Schrage ; Nancy Schuldt ; Merrick, Glenn W ; Molly Thompson ; cic RICH/Carol STAFFON

Subject: Last evening's NRC meeting

I had hoped to briefly speak to the NRC last night, which I was on, but technology (and the user) prevented it from happening (didn't get recognized as wanting to speak when I "raised the hand on the screen" and couldn't unmute to speak). I did have an opportunity to relay my support of the projects that Clark outlined during a stakeholders meeting. The need to address plantation thinning, developing conifer regeneration in existing poor-quality hardwood stands as Clark outlined, and dealing with EAB at Enger are all sound management strategies and very timely. As Clark and Jim know, from the Ike's perspective the Knowlton Creek site is a

somewhat different project than the plantations. Ikes fully support Clark's objectives at Knowlton Creek to increase the regeneration of white pine and white cedar there. And would add to that short list by recommending the inclusion of hemlock and yellow birch. Both of these species are found locally, with lots of yellow birch in the Magney-Snively forest by Spirit Mountain, and hemlock being found in several ravines across town, including just west of Knowlton Creek along another stream (Stewart?). Others can correct me on the name.

The biggest difference is in how the Ikes would prefer to see this project implemented. Rather than using a feller buncher and forwarder – aka a cut to length. (CTL) logging operation, the Ikes would prefer to see a lighter touch on the land using girdling, possibly in combination with herbicide in the frills, to kill and leave standing the less desirable species, including paper birch, balsam poplar, aspen. Any white pine that succumb to blister rust will add more gaps, as will white spruce that reach the end of their biological age.

This method is light on the land, and allows the introduction/creation of canopy gaps. In this way additional light is permitted to reach the forest floor, which will encourage more rapid growth of understory regeneration. (All of these preferred regeneration species are shade tolerant to very shade tolerant, so the amount of sunlight required doesn't have to be full sun or even partial sun...just some additional diffused sunlight.) We recognize that leaving standing dead may add to the trail maintenance workload, so in situations where dead snags might block a trail, it may be necessary to fell rather than girdle individual trees and then clear the trail.

To facilitate accomplishing this light-on-the-land management, the Ikes are conducting internal discussions about offering to volunteer for and help fund this work, including procuring/growing the necessary planting stock (using the greenhouse at Lake Superior College), caging and maintaining cages around natural and planted seedlings to protect them from deer and rabbit/hare herbivory, and removing invasive species.

As a side benefit, a more defuse lighting and a slightly closed canopy may also be beneficial to reducing both white pine blister rust and white pine shoot weevil on white pine, a point someone during the NRC session happened to mention.

While details are yet to be formalized within the McCabe Chapter, I believe we are willing to make a modest financial commitment to the project, as well as provide the volunteer labor to initiate and maintain the cages and plantings until the seedlings are beyond the reach of the local deer. We would likely look for grant funding to help defray our chapter costs, and seek out other groups and support from local individuals that are interested in helping with this project.

For now, we'd ask that the NRC fully endorse all of the other projects Clark has submitted for your consideration, while giving our Chapter a couple more weeks to finalize our commitment and formally develop and offer you our management plan for the Knowlton Creek site

Thank you for your time and thoughtful consideration of this matter.

Sincerely,

Craig Sterle – MN Div. Past President - Izaak Walton League

Rich Staffon – W. J. McCabe Chapter President - Izaak Walton League

From: [Jim Barott](#)
To: [Clark Christenson](#); [Jim Shoberg](#)
Subject: Proposed thinning of plantations in the Duluth Parks
Date: Thursday, February 11, 2021 10:34:57 PM

Feb. 11, 2021

Jim and Clark

I attended your presentation this evening about thinning pine and aspen in the area of the pine plantations in Duluth parks. Well done. Cheryl as the host was also very helpful.

Comments:

- I'm not opposed to logging, but the goal should be to have it look like a natural forest. Thinning to achieve maximum sustained yield should not be the goal in a park. Stumps should be cut as close as possible to the ground.
- I like your idea of scarifying and seeding whenever possible, if it can be done without rutting the soil and with minimal compaction, especially where the soils are clayey.
- Logging on the clayey soils should be conducted in the winter, during frozen soil conditions. If logging must be done during the summer, or dry fall, much oversight will be needed.
- Consider seeding jack pine with red oak and white pine on the rock outcrop near the Enger golf course. Full disclosure: I have not been there.
- I support bow hunting deer to reduce their impact on the vegetation, especially their impact on regeneration of seedlings.
- I support the thinning of aspen, due to the overabundance of aspen in many of the Duluth Parks.
- The Minnesota NPC Field Guide is a useful tool, but it is just a tool, not a Bible. Plant communities don't always fit in nice neat boxes.

Jim Barott
8206 E. Spirit Cove Drive
Duluth, MN 55807

From: Emily Steil

Sent: Tuesday, February 9, 2021 9:33:01 AM

To: Council; mayor@duluthmn.gov

Subject: Cutting trees in city parks

I was quite disappointed to see consideration being given by the city to cutting trees on our city lands. It seems the city has neglected managing our city lands for years. To now go for cutting the trees seems more like a final giving. I would think getting buckthorn and other invasives off city lands should be a higher priority. But, of course, that would require the city to spend some money. It would be interesting to bring a lands management proposal to the voters through a city fund voters would be confident could not be seized for other things. Our lands are a strong city resource, please do not harm them. Our citizens much enjoy them. Please do not trees. They make our lands enjoyable. Yes, trees will age and die but I think that better than cutting them.

Thanks for consideration of this,

Ken Steil

301 East Anoka St

Hi Val

Copying Clark and Jim here as well. Yes, we are very aware of these issues and will be following the riparian guidelines for timber mgmt. (MN Forest Resources Council) for all the work. We heard this question as well at our public meeting and will include Rich's comments as well when we report our findings and make final recommendations to the Natural Resource Commission March 3rd. These meetings are open to the public and welcome public comment as well.

Much appreciated;
Diane

From: Ryan Granlund
Sent: Wednesday, February 17, 2021 11:45 AM
To: 'Valerie Brady'
Cc: Tom Johnson ; Diane Desotelle
Subject: RE: Amity Forest Revitalization Plan NOW 5 PM off City Parks page

Thank you for sending this my way Val. I will reach out to Diane and Tom to see what their involvement has been on this so far and to ensure that the water quality aspects are being considered, though I am confident that they are. Hope all is well.

Thanks much,
Ryan

Ryan Granlund | Utility Programs Coordinator | **City of Duluth** | 411 W 1st St, Duluth, MN 55802 | 218-730-4088 |

From: Valerie Brady
Sent: Friday, February 12, 2021 4:02 PM
To: Ryan Granlund
Subject: Fwd: Amity Forest Revitalization Plan NOW 5 PM off City Parks page

Hey Ryan,
We recently learned that the city is planning some mechanized thinning of trees and buckthorn removal along many city trout streams. See Dr. Rich Axler's thoughts below about the potential for at least short term impacts on streams that already have sediment TMDL issues. Just want to make sure that you are in the loop and being consulted about this because of the stormwater and TMDL issues this could cause/exacerbate.
Val

----- Forwarded message -----

From: **Richard Axler** <richard.axler@cityofduluth.com>
Date: Fri, Feb 12, 2021 at 3:50 PM
Subject: Re: Amity Forest Revitalization Plan NOW 5 PM off City Parks page
To: Tiffany Sprague <tsprague@d.umn.edu>
Cc: Lucinda Johnson , [Jerry Henneck](mailto:jerry.henneck@cityofduluth.com), [Christopher Filstrup](mailto:christopher.filstrup@cityofduluth.com), [Valerie Brady](mailto:valerie.brady@cityofduluth.com)

Hi all,

Public meetings seem to always be interesting.

It appears that the first group of proposed projects are all in trout stream watersheds:

1. Tischer in Hartley Park (continuing the "thinning" from 2016, but in different patches)
2. Amity Creek along 7 Bridges Rd between Bridges 2 and 4 (upstream, I think, from the xc ski cabin).
3. Knowlton Creek in the vicinity of the Spirit Mtn complex (I think this patch or patches are close to the Knowlton Creek stream channel and bank restoration project that was completed last year (John Lindgren and Martha Minshak were the PIs on this AOC related project)
4. Kingsbury Creek in the Zoo complex- This is likely tied to the Kingsbury Bay AOC restoration as well as the Kingsbury Creek channel/bank restoration that MnDNR have been doing, as precipitated by the Solstice 2012 Flood.

The City foresters who presented, both noted that they had not yet discussed specific details to MnDNR because of all the trout stream issues and BMPs but I didn't hear mention of City stormwater involvement, although Diane Desottelle is involved. They were up front about what mechanized thinning looks like at this scale - i.e. they were very mindful of the Hartley Park backfire from the 2016 "thinning" and were careful to show pix of its, and other, restoration sites (i.e obliterated). Seems like Diane is working with them to set up a framework of native vegetation and careful "design with nature" to help manage City greenspace and promote sustainable practices. It's been good to see her vision unfold with NRRI involved as a science partner.

From an NRRI and especially Weber Stream Restoration Initiative perspective, the Amity Creek projects are worrisome without careful consideration. Although I don't know exactly where the sites are in the Riparian Management Zone, since the creek is on the 305(b) Impaired Waters List, my immediate reaction is that the potential benefits of removing pine plantations and buckthorn are far outweighed by the risks due to the vegetation and soil disruption that would occur. These could lead to short- and long-term hydrologic and erosional impacts. However, if part of a more comprehensive plan for mitigating the sediment/turbidity Impairment, in the spirit of WSRI, then I'm fine with it, as long as it is treated as a study site and carefully monitored and assessed. I would imagine City stormwater and City Engineering have been briefed.

I've always envisioned it would be nice if a presentation like this was first given to RSPT(w/DUWAC Invited) before showing it to the public. I still think it would be a good idea for RSPT to have time to chat and brainstorm about it as a group instead of just on a need to know basis among LGUs.

Cheers and stay safe....Rich

Richard Axler, PhD
Adjunct Emeritus Scientist - Limnology/Water Quality
Natural Resources Research Institute, U. of Minnesota-Duluth
5013 Miller Trunk Highway, Duluth, MN 55811 USA
(218)788-2701 (dept office)

<https://www.facebook.com/Natural.Resources.Research.Institute>
www.nrri.umn.edu/about/staff

On Fri, Feb 12, 2021 at 1:51 PM Tiffany Sprague <tsprague@d.umn.edu> wrote:
How was the public meeting? We learned about the upcoming forest management plans for the City at our February Natural Resources Commission meeting. Those are the first Wednesday of each month at 6:30 p.m. and open to the public. The thinning is mostly on the pine plantations.

On Thu, Feb 11, 2021 at 5:57 PM Richard Axler <raxler@d.umn.edu> wrote:
or try <https://duluthmn.gov/live-meeting/> and then go through Parks and Rec

Richard Axler, PhD raxler@d.umn.edu
Adjunct Emeritus Scientist - Limnology/Water Quality
Natural Resources Research Institute, U. of Minnesota-Duluth
5013 Miller Trunk Highway, Duluth, MN 55811 USA
(218)788-2701 (dept office)

<https://www.facebook.com/Natural.Resources.Research.Institute>
www.nrri.umn.edu/about/staff

On Thu, Feb 11, 2021 at 5:56 PM Richard Axler <raxler@d.umn.edu> wrote:
City proposing "thinning" between bridges 2 and 4 on Amity

https://duluthmn.webex.com/mw3300/mywebex/default.do?nomenu=true&siteurl=duluthmn&service=6&rnd=0.07250926835185134&main_url=https%3A%2F%2Fduluthmn.webex.com%2Fec3300%2Feventcenter%2Fevent%2FeventAction.do%3FtheAction%3Ddetail%26%26%26EMK%3D4832534b0000004ad89066e2fb7e60438b3d4ef956f3cd2a4d16712597b627250b24e1b6a79be90%26siteurl%3Dduluthmn%26confViewID%3D184699218963734971%26encryptTicket%3DSDJTSwAAAARLh3iqiRc1ZFoRCG3Yx6fajWMmgaMdlHQVhi9eNa8gAw2%26

Richard Axler, PhD raxler@d.umn.edu
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www.nrri.umn.edu/about/staff

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Tiffany A. Sprague, M.S.
she/her/hers

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Watershed, Stormwater & Sustainability Research Coordinator | Natural Resources Research Institute | nrri.umn.edu
Stormwater Resilience Extension Educator | Minnesota Sea Grant | seagrant.umn.edu

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University of Minnesota Duluth | d.umn.edu

From: [Gene Becker](#)
To: [Clark Christenson](#)
Subject: Forest Stand Revival
Date: Friday, February 12, 2021 2:06:30 PM

My name is Gene Becker. I'm a retired forester, having been employed over 35 years with the Saint Louis County Land Department. I continue to manage my family forest.

I support Duluth forester Clark Christenson's plan for the management and revival of the 108 acres covered at the public meeting on February 11, 2021.

During my employment I used the Minnesota DNR's Native Plant Communities Guide to evaluate all sites before making forest management decisions. This is excellent method of determining the plant species that would inhabit an area that has not been altered by man. Also, over the years I have been responsible for the thinning of many pine plantations. With each thinning they appear more like a natural stand as other species receive enough light and room to become established and grow. The remaining pine grow much faster and are healthier as well.

I think this is a well thought out plan and hope it can be successfully completed.

Sincerely,
Gene Becker
P.O. Box 15074
Duluth, MN 55815

From: [Haworth, Brooke \(DNR\)](#)
To: [Clark Christenson](#); [Jim Shoberg](#)
Subject: FW: Forest Stand Revitalization Stakeholder Update
Date: Friday, February 12, 2021 10:04:16 PM
Attachments: [image003.png](#)
[image004.png](#)
[image005.png](#)
[image006.png](#)
[Presettlement Veg.jpg](#)

Gentlemen,

Thank you for a good public meeting last night. You delivered a lot of excellent community education on the state of the sites, your goals for transitioning away from pine plantations, addressing invasive species, and using NPC information to help guide management choices. I thought you did a great job and hope it was well received.

I also appreciate that you gave some air time to the state-protected status of hemlock. That helped spread word a bit farther about how we approach work with this species, which is needed. We are seeing a lot of interest in hemlock, but few seem to understand that we have to be cautious about how we proceed, because of the legalities and ecological questions that need to be addressed. So we are encountering situations where folks with good intent are unknowingly coming cross-wise with proper procedure. We have a group within the DNR that addresses hemlock permit situations and is guiding our approach. So any chance we get to spread that message is appreciated.

Of course, I do have a few thoughts after the presentation last night - you can't keep a forest ecologist from musing out loud:

- Aspen - I recognize the challenge you have with the interest to move away from so much aspen on City lands. It is the first thing to come in on historically burned and cutover lands, and the transition to longer-lived species isn't moving as fast as we, the current residents, would like. From what I see (only occasionally) done on DNR forest lands, I think your approach is a good one – thin the aspen enough to get some other species coming in, especially conifers, but not enough to let it sucker or to encourage buckthorn. Conifer plantings could be a good addition to help move along, especially spruce.
- Interest in white pine and red oak – I share that interest. Since both have been cut out historically, it's hard to know how much was here before we were. I like to look at the original PLS vegetation layer, which can have some interesting info. That layer is available on the [MN Geospatial Commons](#); although the metadata isn't helpful, I can usually figure out the species....I've attached a map.
- I support establishing white pine where ever you think appropriate. It seems a good way to transition away from the red pine plantations. It does seem to regenerate widely, as you pointed out, in spite of deer. I bet you could get the volunteer crew to do bud-capping – a break from buckthorn removal.
- Red oak – according to the PLS veg layer, it wasn't as dominant on the hillside here as other species. That could track with what we see often in mixed forests – because of

site conditions that aren't ideal for oak, it is more of a sub-canopy or less thrifty understory component. Those trees still have good wildlife and biodiversity value, but aren't the showy dominant trees that we all love. I would certainly protect and encourage it where ever you do find it; that's probably the best indication of where it might do best.

- The most complicated site is the Spirit Mountain complex, for sure. I sent some thoughts on this one earlier. I agree that breaking management into sections that reflects the quick transitions between conditions and vegetation is a good approach. I wouldn't be too quick to cut out all the diversity above the cedar and around the enclosure. I'm not sure what is going on there, but it seems likely those species have grown in because conditions are no longer ideal for the cedar. Removing aspen and encouraging the sugar maple and yellow birch could be a way to improve that part of the site. Might need some protected plantings if the seed source isn't strong enough.

Well, I should let you folks do your work. I hope to talk with you again in the future.

Respectfully,

Brooke

Brooke Haworth

Northeast Region Plant Ecologist

Division of Ecological and Water Resources

Minnesota Department of Natural Resources

525 Lake Avenue S., Suite 415

Duluth, MN 55802

Phone: 218-302-3248

Email: brooke.haworth@state.mn.us



From: [Kristen Schmitt](#)
To: [Clark Christenson](#); [Jim Shoberg](#)
Subject: Public comment on Forest Stand Revival through pine and aspen thinning in Duluth
Date: Friday, February 19, 2021 1:20:00 PM

Dear Jim and Clark,

Please accept my comment on the proposed Forest Stand Revival plan below, as a part of the public comment period for this project. Many thanks for your work on this.

Best wishes,
Kristen Schmitt

Comment on Forest Stand Revival through pine and aspen thinning in Duluth:

I would like to express my strong support for the actions in this plan designed to improve forest health, increase forest diversity, and allow for tree regeneration at the selected sites. I believe these actions are necessary to help Duluth's forests persist into the future and respond to potential stressors over time.

I would also like to request that the plan include dedicated, adequate funding and specified timeframes for monitoring and follow-up actions on tree seeding, planting or natural regeneration efforts. Depending on the specifics of the plan, follow-up actions may need to include re-fencing or repair of deer browse protection, removal of fencing once desired regeneration is achieved, or other actions to ensure regeneration of desired species following seeding.

For some context, I live in West Duluth and there are many tree planting projects in the area that seem to have suffered from a lack of dedicated resources for follow up. In many cases, deer browse protection has been damaged or removed by weather and/or residents. In other cases, tree fencing has remained onsite after vegetation is no longer at risk from browse. I certainly appreciate the difficulty in coordinating multi-year restoration and monitoring efforts! However planning in advance for monitoring and follow up would be helpful in order to fully and efficiently realize project goals. I realize that this project includes plans mainly for seeding as opposed to planting, so follow-up actions may look quite different to the situation described in West Duluth.

Thank you for your work and for considering my comment.

Kristen Schmitt
(Fairmount neighborhood, Duluth)

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Kristen Schmitt
Northern Institute of Applied Climate Science
Northern Forests Climate Hub

From: [Tom and Brandy](#)
To: [Clark Christenson](#)
Subject: Re: Duluth tree harvest
Date: Friday, February 19, 2021 10:36:26 AM
Attachments: [image001.png](#)

Thanks for the reply. This plan sounds great. I'll let my neighbors know of my support for this plan as the initial cutting could strike some as shocking.

Let me know if there's anything I can do to help.

-T

On Fri, Feb 19, 2021 at 7:30 AM Clark Christenson <cchristenson@duluthmn.gov> wrote:

Tom,

First of all, thank you for your work controlling buckthorn on your small piece of territory. It is rather thick in there and I think there is opportunity to turn a very scrubby landscape into an actual forest.

Overall the prescription is to remove about 1/3rd of the pine in both stands 1 and 3. Stand 2 will probably have more like 40% of the trees removed. Of course, buckthorn treatment will be undertaken in all of these areas before the canopy is opened.

About stands 1 and 3. Stand 1 is about 30 years old which is the point that red pine plantations are typically reaching the point of merchantability and becoming overstocked. The goal is to thin it so the remaining trees have room to grow. Avoiding thinning it results in trees that are very tall with small diameters which is a good recipe for wind damage. So we want to be ahead of that. In stand 3 we will be removing Scot's pine, white pine, some aspen and birch. The goal in removing pine is to eradicate the Scot's pine (invasive) and those white pine that are doing the poorest. That will give the healthiest white pine more room to grow and when trees have excess resources they usually respond by producing a healthy crop of seed (or cones). The goal is to expand the influence of white pine and red oak on this site at the expense of Scot's pine, birch and aspen.

In brief, that is what we are doing. Feel free to call if you want more clarification.

Clark Christenson | City Forester | **City of Duluth** | 110 North 42nd Avenue West, Duluth, MN 55807 | 218-730-4328 | cchristenson@duluthmn.gov

From: Tom and Brandy
Sent: Thursday, February 18, 2021 1:10 PM
To: Clark Christenson
Subject: Re: Duluth tree harvest

Thanks, Clark.

I'll put March 3 on my calendar.

In the meantime, can you give me a little better idea of what you mean by "thinning"? Specifically, about what percent of the white pines in zone 3 will be taken? and what percent of red pines in 1 will be taken?

I marked my house with a * below and marked a zone in red that I've volunteered possibly 100 hours removing buckthorn as part of the R2ED team. I get a sense that the buckthorn in zone 2 works its way down hill - so I can really get behind your work there. I have no formal forestry training and am ready to get behind informed efforts to manage invasive species and learn more about forestry in the process.

-Tom

image.png



On Thu, Feb 18, 2021 at 7:38 AM Clark Christenson <cchristenson@duluthmn.gov> wrote:

Tom,

You can find the presentation that I gave here:

<https://duluthmn.gov/media/WebSubscriptions/196/20210204-196-12464.pdf>

There is one more public meeting and that is the Natural Resources Commission where they will be discussing the plan and voting on a recommendation. That meeting is on March 3rd. You can find the link for it here:

<https://duluthmn.gov/boards-commissions/natural-resources-commission/>

The plan does include thinning the stand north of Enger Tower and the small plantation west of it along Skyline. The small plantation area also includes thinning the nearby aspen and ash forest. Of importance in this area are the presence of two invasive species. Scot's pine around Enger Tower and buckthorn in the stands west of the park. We want to eliminate the Scot's pine and greatly reduce the presence of buckthorn. I think those goals are realistic.

If you have any questions feel free to call or email.

Clark Christenson | City Forester | **City of Duluth** | 110 North 42nd Avenue West, Duluth, MN 55807 | 218-730-4328 | cchristenson@duluthmn.gov

From: Tom and Brandy

Sent: Wednesday, February 17, 2021 2:41 PM

To: Clark Christenson <cchristenson@DuluthMN.gov>

Subject: Duluth tree harvest

Clark,

I'm wondering whether there is more information on the upcoming tree harvest in Duluth parks that I read about in a recent DNT article.

It appears that I have missed a public Q&A session.

Of primary concern for me is the stand of pines on the north slope of Enger Tower's hill and the pines near Forgotten Park. These are segments in my daily walk.

Are there more public events upcoming? or more specific details published elsewhere?

Thanks,

-Tom

From: [Jim Shoberg](#)
To: ["Michelle Wegler"](#)
Cc: [Clark Christenson](#); [Diane Desotelle](#)
Subject: RE: Trees
Date: Monday, February 22, 2021 9:34:57 PM

Thank you Michelle for your comments,

We are actively working with the Arrowhead Bow Hunters Alliance to focus on reducing deer herd populations in problem areas. We are also concerned with the deer browse issue but are confident with some of the protective measures that can be done such as bud capping and fencing. Seeding also works really well especially when it is at an extremely high density.

Thank You,

Jim

From: Michelle Wegler
Sent: Wednesday, February 17, 2021 4:07 PM
To: Jim Shoberg
Subject: Trees

Thank you for your presentation last week about the city trees. I was unable to stay for the full presentation, but Cheryl sent me the link.

I did have comments to add. I'm very concerned about deer density and it's potential to prevent diverse and healthy forests on Duluth. Density has increased exponentially in the 40 years I have lived in Duluth. Currently, in a wooded plot behind my house on 36 Ave E and 1st St the regulars we have include a doe with a fawn, a doe with twins, a doe with triplets, an injured doe with a fawn, a six point buck, an eight point buck, and a very large 6 pointer. We lost many trees in the blow down and have to fence any new trees we plant. The deer come through and eat anything sticking out of the snow. We have one naturally seeded Scott pine, some seedling balsam that have been left alone, but no white pine or cedars. I'm pretty skeptical that with the deer population only increasing will there be diverse forest regeneration without serious deer control.

I also noted that a wild seeded red oak was mentioned in a survey-let's include red oak on the desirable list!

Thank you for consideration.
Michelle Wegler

From: [Diane Desotelle](#)
To: [Jim Shoberg](#); [Clark Christenson](#)
Subject: FW: 2020 Forest Revitalization Plan Questions
Date: Tuesday, February 23, 2021 12:54:56 PM

Jim/Clark

Did you or are you responding to this?

Diane

From: Dave Cizmas

Sent: Monday, February 22, 2021 1:41 PM

To: Jim Filby Williams ; Jim Shoberg ; cchristensen@duluthmn.gov; Diane Desotelle

Cc: tjaard breeuwer

Subject: 2020 Forest Revitalization Plan Questions

I am very happy to see a plan developed to start to address the stands of timber that are overmature and/or in a state of decline throughout the City of Duluth. I've read through the presentation and have a few questions.

The first question is about the Red Pine plantations in Hartley and Lester.

The small crown size, small diameter to height ratio and current stand mortality indicate that the Red Pine in these stands will not release or put on growth in response to a thinning.

Additionally, thinning these stand will increase the chance for wind throw.

-What is the plan to mitigate the increased mortality and potential for a large blowdown event as well as the safety issues that presents in the thinned stands?

My second question has to do with implementation of the plan.

Red Pine sawtimber and pole logs are the most valuable wood products that are harvested in the Northlands forests. I was very disappointed to learn that the 2016 Hartley timber sale was essentially given to the logger for no cost. When Hartley was harvested in 2016, a couple local loggers showed interest in purchasing the timber sale, but were not given an opportunity to bid on the sale. They were willing to deal with the added complexities of harvesting in a city park due to the positive exposure for their companies and marketing potential that could have resulted from the harvest.

-How are you going to make sure all eligible contractors are aware of and are given opportunity to bid on this (these) timber sale(s).

My final question has to do with the reforestation efforts.

The large number of deer, bear and rabbits in Duluth have me concerned about the ability to successfully revegetate the managed areas with the desired species. I have noticed a very high mortality rate in other plantings throughout the city.

-How do you propose to limit browse in the managed stands? How are you going to measure success in the planted/seeded areas?

Thank you for your time, and I look forward to having sound forest management taking place in the City of Duluth.

Dave Cizmas

Duluth resident

TO: City of Duluth Natural Resources Commission
CC: Clark Christensen, City of Duluth Forester
FROM: Louise Levy, Levy Tree Care
ISA Certified Arborist MN4406-A
ISA Tree Risk Assessor Qualified
MN & WI Certified Commercial Pesticide Applicator
MN Nursery and Landscape Association Certified Professional, Grower Specialty
TCIA Certified Treecare Safety Professional #1557
ASCA Tree and Plant Appraisal Qualified
DATE: 27 Feb 2021
RE: 2021 City of Duluth Forest Thinning Proposal



General Impressions:

I am solidly in favor of the City Forester's proposal to thin and/or remove trees in the areas identified in his proposal. His plan demonstrates a solid understanding of the principals of ecological silviculture¹², ecological forest management³ and native plant communities. This knowledge of and approach to caring for forested land reflects his and the City's commitment to using the most up-to-date information and practices.

Thinning or eliminating the rest of the plantations, never managed after being planted, which are identified in the City Forester's report is a good move ecologically and a terrific opportunity to educate people about good forest management. There is one area, the red pine plantation at Hartley just north of Rock Knob, that I would prefer to see left as is, as an educational tool and a showcase for how unmanaged plantations differ from managed plantations and "deteriorate" over time.

General Comments:

- Monocultures are not inherently bad.
- Greater diversity is not inherently better than less diversity.
- Applying forest management principles such as stand density, desirable basal area, understory recruitment, and growth rates to naturally regenerated conifer stands is inappropriate, particularly if these stands are not being managed for timber production.
- Timing: plan the number of entries based on best practices for ecological silviculture and forest management rather than what you think the public will tolerate. Look at this as an

¹ See publications by Dr. Brian Palik. <https://www.nrs.fs.fed.us/people/Palik>.

² Ecological Silviculture : Foundations and Applications. Palik et al.
<https://foreststewardsguild.org/enews/ecological-silviculture-foundations-and-applications/>

³ Ecological Forest Management. Franklin et al. 2018.

opportunity to educate people instead of pandering/deferring to expected conflict. We/they can handle it!

- UMN Cloquet Forestry Center: Consider visiting the UMN research forest in Cloquet to see before and after, real time “real life” examples of red pine thinning undertaken with similar concerns about public perception/reaction. Call or email forest manager Kyle Gill to set up a tour. (218) 726-6412 or kggill@umn.edu.

Specific Comments:

Zoo and Spirit Mountain stands

- White pine and northern white cedar stands that regenerate naturally, i.e. are not of plantation origin, we would expect to be quite shaded. They are also, because of the shade, unlikely to have much understory vegetation or tree regeneration that contains a wide range of sizes/ages. As long as there is a seedling/sapling bank of a handful of white pine and northern white cedar, both shade tolerant species, ready to take advantage of canopy openings created by tree mortality or windthrow, I see no need for any human intervention in these stands. The recruitment and retention⁴ of new white pine and cedar, as well as planting or seeding eastern hemlock, should occur in areas adjacent to those stands.
 - o Zoo stands labeled with the number 1.
 - o Spirit Mountain Complex stands labeled with the numbers 2 and 3.

Thinning Activities

- Protecting existing white cedar and white pine: In areas where hardwoods are to be eliminated (e.g. aspen overstory) protecting the root systems of existing white cedar and white pine is of utmost importance to their survival post-thinning. This must be included in the RFP specifications. I recommend leaving a 20ft radius buffer around every cedar and white pine in these areas. You may think this is an excessively large buffer, but note that their root systems certainly extend beyond this proposed buffer, having grown with no soil compacting activities or impediments to expansion other than naturally occurring clay layers, bedrock or water flowages.
- In the red pine plantations in which trees will be left for the future stand development, leave the largest trees, regardless of condition, and remove the smallest.
- Consider hand felling of trees in areas with the most sensitive soils and erosion-prone topography, e.g. in Spirit Mountain Complex stand 3, which is a mix of cedar, white pine, spruce and aspen.

⁴ This especially includes protection from animal damage such as deer herbivory.

Comments: Duluth City Forestry Lands - Knowlton Creek/Spirit Mountain

Reformatted from: email to Martha Minchak, DNR

Date: 12/21/2020

From: Brooke Haworth, DNR Regional Plant Ecologist

Map A
West Duluth - Spirit Mountain
White pine and cedar stand



- No NPC mapping available for that stand
- I was there in May 2020, before green-up in the ground layer. Based on this site visit and document review, I have these thoughts:
- This particular occurrence of northern white cedar covertime is some different from what I see in other Duluth stream and ravine corridors and hillsides. We do see a lot of cedar on the sides of the steeper stream-formed ravines in many of the City parks – Stewart, Chester, Tischler, and Amity Creeks and the Lester River. It's my observation that cedar transitions and then disappears as we move into the uplands around those areas – either because of changing ecological factors or because it was cut out and never came back. But here we have a place where the cedar persists outside of the Knowlton Creek ravine into a more upland area.
- It's my **guess** that this is MHn45b – White cedar-Yellow Birch Forest, or some transitional variation. I have attached the NPC factsheet from the DNR NPC guide for LMF.
 - Note that DNR places a conservation status rank of S2 – imperiled on this NPC type. This is also considered G1-G2, meaning a global status of critically imperiled or imperiled. Both of these come from NatureServe methodology.
- There is a lot more of this NPC type farther north, but there are occurrences of this in the Magney-Snively area as well as in Jay Cooke SP in Carlton County. Here's a blurb from Bruce Carlson's Ecological Evaluation for the Magney-Snively area that describes this southerly distribution:

Almost all of the native plant communities in Magney-Snively are within their expected geographic range in Minnesota. The one exception is an occurrence of white cedar – yellow birch forest (MHn45b, see below) occurrence along Stewart Creek (Figure 4). The distribution of this forest type in Minnesota is centered in Lake and Cook counties. However, Jay Cooke State Park contains at least one documented occurrence of this forest type located approximately 6 miles southwest of the Magney-Snively occurrence. MCBS surveys in Jay Cooke and the North Shore Highlands suggest that MHn45b is a rare native plant community type (ranked S2) with limited distribution.
- We have NPC condition ranking scoresheets developed by MBS. Based on those criteria, the condition rank of this area is probably pretty low. This is because of the impact of high use over the years – trails, hiking, deer, equipment entries, past management practices that did not favor retention of NPC features.

- A management plan that favored restoration, protection, and enhancement of NPC characteristics would be a great idea for a conservation group.
- To help support that effort, I recommend:
 - Perform an NPC identification protocol and condition ranking.
 - Perform a full site assessment to identify specific management needs:
 - plant community transitions, to find where different species mixes would be most appropriately enhanced
 - existing areas that need some type of restoration (rutting from equipment entry, trees along bike paths that are damaged)
 - areas that need brush control, invasive species control, fence maintenance, etc.
 - Pay particular attention to hydrology of this site.
 - Soil and hydrology conditions are challenging for large equipment entry.
 - The soils are soft and shallow over bedrock, with hydrologic seeping both across the surface and just under the surface, likely year round. It will be important to watch seasonal changes in hydrology and persistent wet areas in order to protect these sensitive soils.
 - The seeping nature of hydrology on this hillside is probably the most important feature that has fostered this mature cedar community. The constant flow of hydrology, bringing nutrients and moisture to the tree roots, is one of the ecological factors most important to cedar stands.

Subject: Duluth City Forestry Lands – Forest Stand Revitalization Stakeholder Comment

To: Jim Shoberg, Senior Parks Planner, City of Duluth

From: Brooke Haworth, DNR Regional Plant Ecologist, Division of EWR

Date: February 10, 2021

General Comments

- In this urban forest, we see years of different types of management on smaller lots. The natural forest mosaic that changes with slope and aspect has been re-worked and impacted over time, and each site has responded differently. The stands do have in common that they are often located in areas with close changes in slope and aspect, where natural plant communities transition within short distances, and also grade into each other.
- These planned thinnings present the opportunity to treat acres with a finer hand than we usually do in larger managed forest settings, by treating smaller areas and also treating different parts of each stand differently. For this first treatment, I encourage you to consider both the ecological transitions within each plantation area and the different conditions of their respective siting to help plan future goals. Promoting ingrowth of mixed species over time will help with passive conversions away from pine plantations where that is the goal, and can point the way to future management that would help move this along.
- Winter harvest recommended at all sites because of sensitive MHn community soils, riparian areas, and frequent occurrences of sub-surface drainage over bedrock.
- Consider this as an opportunity for public education, to highlight ecological forestry management in the context of managing City lands.
- Is there any possibility that a horse-and-hand operator may be available for some work here? That could help buy some public support, and also provide a good educational opportunity.

Amity Creek Pine

Forest Types

1. Red pine plantation, never thinned (2.2, 1.3, .5, 2.3)

NPC: FFn57, FDn43, MHn44

- On the highest and driest portions, a traditional red pine thinning would be appropriate. Introducing and promoting white pine also could be done. Encourage any red oak regeneration. But it would be a good idea to determine NPC type and subtype if possible, to help guide the direction of future overstory species. This could be FDn43b (Aspen-Birch Forest), which has more aspen, birch, balsam fir and white spruce than red or white pine. A gradual transition over time could be a goal.
- Where other more mesic NPCs have been identified within these plantations, it seems more appropriate to transition parts of these stands away from pine toward mesic hardwood communities more quickly.
- It is possible that the lower reaches would more naturally return to MHn44 species, with aspen dominating in early growth stages. Planting and encouraging white spruce and paper birch could diversify these areas and help move those components along, as they become more prevalent in later growth stages.

- If FFn57 is found here - complete removal of the pine would be appropriate, with plantings of silver maple, bur oak, basswood, willow, and let some aspen come in (but not dominate). Black and green ash are important species in this NPC, but I don't know what the City policy is for planting ash right now.

Hawk Ridge Pine

Forest Types

1. Red pine, never thinned (3.5)
2. Scot's pine (12.2)
3. White spruce (5.0)

NPC: FDn43,ROn23, MHn44

- Removing all of the non-native Scots pine is a good idea, although that's hard to do without damaging the advance regeneration of white spruce.
- The red pine looks quite unthrifty – poor canopy development in the photos. The Canada bluejoint in the photo points toward FDn43b2 – Aspen-Birch Forest, Hardwood Subtype. This has more aspen and birch with only scattered conifers. Also the red osier dogwood indicates subsurface water flow, which is wetter and not conducive to productive pine. As pine is removed, allow aspen-birch-spruce to develop, and supplement with birch and spruce plantings.
- Looks like there is a steep drop to the RMZ. Different management is called for here, with less intense management that should start above the shoulder to reduce the potential for slumping soils. There will be a thin riparian corridor of a floodplain NPC along the creek. Forested stream riparian areas often have more shrubs: alder, willow, dogwood, gooseberry, boxelder, chokecherry, young elm or ash (hard to promote these days, but also hate to lose them on the landscape – consider plantings?). You can consider plantings of floodplain tree species (silver maple, bur oak). I don't know that a conifer corridor, often favored by wildlife and fisheries managers, is what the landscape would naturally tend toward here.

Hartley Pine

Forest Types

1. Red pine, previously thinned (8.3)
2. Red pine, never thinned (1.3)
3. Red pine, previously thinned (4.7)

NPC: MHn35

- It appears the goal is to move these toward hardwood species found in MHn35 (Northern Mesic Hardwood Forest). From the landscape setting and also other hardwood areas in Hartley, I agree this is a good goal for these sites.
- But it could be difficult to do a softer conversion here, since pine has excluded hardwoods and acidic needle fall has influenced the usual hardwood seedbed conditions.
- You might consider a final harvest in the smaller site 2, which is surrounded by hardwoods that could provide a seed source and some shading on edges; plantings of birch, sugar maple, red oak would be needed, and competition control would be important around seedlings.

- The larger stands 1 and 3 could be thinned heavily to allow diversity to develop; also remove a couple outer rings to reduce the overall size and allow light to penetrate farther in.

Enger Pine

Forest Types

1. Red pine plantation, (1.7)
2. Aspen and ash (4.9)
3. White pine (5.0)

NPC: MHn35, MHn44

- The management you have described looks good to me – no further suggestions.

Golf Course Pine

Forest Types

1. Red pine plantation, (4.1 total)
2. Aspen (8.6 total)

NPC: FDn32, FDn43, MHn44, ROn23

- Thinning in red pine: encourage hardwood diversity, especially red oak
- What about a few small gaps in the pine, to plant oak and encourage hardwoods? This could jumpstart a conversion from plantation pine to a more natural expression of FDn32 - Northern Poor Dry-Mesic Mixed Woodland. A woodland has a more open character with mixed species, so this would be a good goal for stand trajectory.
- In the aspen block 2 – attempt to keep harvest away from the drainage that runs south, which is the headwaters of an un-named public stream that joins Buckingham Creek to the south. It may be intermittent, but probably runs during snowmelt and heavy rains? Harvest could scarify soils that could contribute unwanted sediment to the waterway.

Zoo Pine and Aspen

Forest Types

1. White pine (1.9)
2. Red pine (2.6)
3. Aspen and birch (18)

NPC: MHn35, FDn33(?), MHn44

- Consider white pine plantings for conifer buffer between houses and snowmobile trail. Not particularly suited for MHn35, but with deer protection, may establish and do a good job of screening.
- Consider whether all of the aspen needs thinning – use strategic thinning. MHn44 aspen will do a good job of thinning itself through its stand development, which also allows hardwood and conifer to develop over time.
- The buckthorn treatments look very good – I would expect that to also help natural species diversity. Consider continuing this as an understory management tool.
- Gradually phase out the red pine in stand 2, replacing with white pine or allow to revert to MHn44.

Spirit Mountain Complex

Forest Types

1. Hardwoods (3.5)
2. Cedar, etc. (5.8)
3. Cedar, white pine, spruce, aspen (7.1)
4. Aspen (3.1)

NPC:MHn35, MHn45

- Please see comments submitted 3Feb2021.

From: [Jim Barott](#)
To: [Clark Christenson](#)
Cc: [Jim Shoberg](#)
Subject: Re: Proposed thinning of plantations in the Duluth Parks
Date: Wednesday, February 24, 2021 4:40:11 PM

Clark and Jim, here is my response to Clark's comments.

1) My comment about maximum sustained yield in pine plantations in Duluth parks was really intended for a broader audience, not knowing who is seeing my comments. From my experience some foresters and silviculturists get stuck on following the recommendations no matter what the context or the objective.

3) I am sad to see, with the lack of fire and the introduction of invasive species, how rock outcrops have become a shadow of their former selves. I cannot speak so much to the rock outcrops around here, but further north jack pine seemed rather common on the outcrops, but without fire or proper logging (crushing the jack pine branches on the soil surface), jack pine is fading from that plant community. The fire-dependent ground flora is also fading away. White pine, on the other hand, seems to be doing well on the rock outcrops, if there is a seed source.

4) Hearing that you want to continue an aspen-birch type (FDn43b?) raised an eyebrow because our parks, in my opinion, already have a lot of aspen. Hearing your comment - I wish we could plant white pine there, but the site does not fit the recommendation, raised my other eyebrow. FDn43 does allow white pine, so the overall site should work. Of course aspen regen is going to be an issue, but if you thin the aspen or create small gaps, the regen problem should not be as severe.

Thank you for the opportunity to comment,
Jim Barott

On Fri, Feb 12, 2021 at 7:52 AM Clark Christenson <cchristenson@duluthmn.gov> wrote:

Jim,

As always, I appreciate your thoughts and comments. They are most helpful in this process.

I agree with most of what you have said but will offer several clarifying remarks:

1. If my presentation came across as an opportunity to achieve maximum sustained yield that was not the intention. The goal is a more diverse and, depending on the definition, "natural" park. We don't expect the immediate aftermath of logging to look natural but it does set things so we can have a more natural look in the future.

2. Clay soils, the bane of every gardener's and several forester's existence. We do need to watch that, especially on Hawk Ridge. I think most sites are non-clay soils or they have so much rock mixed in that compaction isn't a problem.

3. Jack pine is a great idea for some of these tough sites and I'll have to include that in the plans.

4. It's certainly becoming a reality to me that plant communities don't place nice all the time. Especially when you want to put a label on them.

Thanks again and I look forward to our future conversations!

Clark Christenson | City Forester | **City of Duluth** | 110 North 42nd Avenue West, Duluth, MN 55807 | 218-730-4328 | cchristenson@duluthmn.gov

From: Jim Barott

Sent: Thursday, February 11, 2021 10:33 PM

To: Clark Christenson ; Jim Shoberg

Subject: Proposed thinning of plantations in the Duluth Parks

Feb. 11, 2021

Jim and Clark

I attended your presentation this evening about thinning pine and aspen in the area of the pine plantations in Duluth parks. Well done. Cheryl as the host was also very helpful.

Comments:

- I'm not opposed to logging, but the goal should be to have it look like a natural forest. Thinning to achieve maximum sustained yield should not be the goal in a park. Stumps should be cut as close as possible to the ground.
- I like your idea of scarifying and seeding whenever possible, if it can be done without rutting the soil and with minimal compaction, especially where the soils are clayey.
- Logging on the clayey soils should be conducted in the winter, during frozen soil conditions. If logging must be done during the summer, or dry fall, much oversight will be needed.
- Consider seeding jack pine with red oak and white pine on the rock outcrop near the Enger golf course. Full disclosure: I have not been there.
- I support bow hunting deer to reduce their impact on the vegetation, especially their impact on regeneration of seedlings.
- I support the thinning of aspen, due to the overabundance of aspen in many of the Duluth Parks.
- The Minnesota NPC Field Guide is a useful tool, but it is just a tool, not a Bible. Plant communities don't always fit in nice neat boxes.

Jim Barott

8206 E. Spirit Cove Drive

Duluth, MN 55807