

Analysis of RMZs in Sample DNR Logging Tracts in the Northern Highland-American Legion State Forest

Based on compliance or non-compliance with the DNR's mandatory water-quality best management practices (BMPs) and NHAL Master Plan standards

Notes: The DNR's mandatory BMPs call for a minimum RMZ buffer of 100 feet deep with minimum residual basal area of 60 sf per acre, of evenly distributed trees greater than 5" DBH. The BMPs call for deepening the buffer when certain conditions are present, including steep and/or continuous slopes. Many of the lakes in our sample feature steep and/or continuous slopes where the RMZs should have been extended and were not. The NHAL Master Plan standards include numerous RMZ management policies and objectives for aesthetics and wildlife habitat.

****GPS coordinates added 6/5/21.** * Coordinates noted are for the most egregiously violated sections of RMZ. They are approximate, based on DNR and Google mapping. In most cases, there are violations of BMPs and master plan guidelines beyond the range of these coordinates as well. *See separate document for Whitney Lake GPS coordinates.

9 out of 15 tracts fail to meet BMPs and Master Plan standards (as of May 24, 2021) = 60% of sample

#	Lake, tract number or name GPS coordinates for most egregious violations (or sites with RMZs that suggest solutions)	Unit or area referenced	Depth of no-cut zone from redline to OHWM	Approx. avg. basal area of residual trees btwn the no-cut zone and 100 feet back from the OHWM	Evenly distributed trees?	BMPs met?	LOGGED?	Notes on factors related to BMPs and standards, including topography, special features, and tree species and age
1	Whitney Lake Tract 11-19	Unit A. 1+ mile of shoreline to be cut	35-75 ft; 100+ ft in 5-6 small areas	32 sf BA	No	No	Majority of shore not yet cut, but north shore w/aspen clear-cut, leaving	Violates BMPs and NHAL standards. Multiple visits 4/20-5/21. There was an aspen clear-cut with a 40-50-foot, thinly populated buffer on the north end. Residual BA behind the buffer is zero. The pending logging on the rest of the shore in question will be very aggressive, a near seed-tree cut with meager buffer in many places – similar to cuts that have already occurred on Upper Gresham/Unit A and

							very thin buffer at OHWM	<p>Trout Lake/west shore. No adjustment in buffers was made for a series of hills at north end of west shore, where residual BA will be 20-40 sf. Part of this area is an oak stand. The majority of the shoreline and inland areas are a mix of species. Overall, more than a mile of shoreline will be heavily logged, which is 1/3 of Whitney's total shoreline. Whitney is largely a wild lake, with 87% of its shoreline state-owned, undeveloped land.</p> <p>BMPs will not be attainable in the future unless the buffers are deepened to meet or surpass minimum standards now.</p> <p>*Note: Tract C194H is in presale stage and will be the next area to be logged along the Whitney shoreline, once designed and sold. Combined with tract 11-19, more than half of Whitney's shoreline will be logged, and more cutting likely to come in other sections.</p>
2	Upper Gresham Lake Tract 21-19 46.07051143200019, - 89.72387442619194 To 46.06862078308689, - 89.72423920661464	Unit A on east shore	30-40-50 ft	Zero	No	No	Yes-Unit A	Violates BMPs and NHAL standards. Visited 5/9/21. Unit A was cut the week of May 3. This was one of the worst logged tracts we have seen to date. A flagrant violation of BMPs. The no-cut zone is 30-50 feet deep – 40 feet deep in many places. It is populated by balsams, mature birch, some pines and few bigger trees – mostly smaller trees. Residual BA in the rest of the RMZ and beyond is zero. This was a clear-cut.
3	Jag Lake Tract 9-18	NE and SE areas marked for logging	NE: 40-50 ft SE: 80-100+ ft	Appears to be at least 60 sf	Yes	Yes	No (as of May 15, 2021)	Complies with BMPs and NHAL standards. Visits 8/6 and 9/27/20: NE section: Red pines to be thinned near water, with trees cut 40-50 feet from OHWM. Overstory harvest behind. Appears to comply with minimum density. SE section: No-cut zone varies and is close to the minimum. Area behind buffer will be heavily cut/overstory removal.
4	Street Lake Tract 9-18	West shore	38-60-90 ft	30-40 sf with	No	No	No (as of 9/27/20)	Violates BMPs and NHAL standards. Visits 8/14 and 9/27/20. Many areas of no-cut zone were 38, 40, 50,

	46.095777916249226, -89.70737322337146 To 46.09644750894773, -89.70450862438886			some areas to 60-70 sf				60 feet deep. One area had no-cut zone ~85 feet deep on slope. Shoreline was flooded in spots, but no-cut zone was 60-70 feet deep from what appeared to be normal OHWM. Residual BA varied from 30-40 to 60-70 sf. Some tall trees in buffer; many small pines. Many oaks and tall pines to remain, but site still violates BMPs. This is a small lake, so the cut will be very noticeable.
5	Edith Lake Tract 9-18	West shore	Northern section (~20%) of shoreline: 80-100 ft Rest of shoreline is 100-150 ft	0-10 sf behind the buffer	Yes	Yes (see notes)	No (as of May 15, 2021)	Complies with BMPs and NHAL standards. The northern 500 ft or so of this shoreline (~20% of the shoreline) was questionable. The no-cut buffer is ~100 feet deep but should have been deeper due to the steep, continuous slope.
6	Little John Lake LittleJohnJuniorOak 46.02018416686116, -89.64767581100844 To 46.01686041889759, -89.64856925840296	West shore	45-75 ft	~30 sf	No	No	No, as of 10/20/20	Violates BMPs and NHAL standards. On west shore, no-cut zones were 42-76 feet. Basal area behind the buffer is currently ~30 sf, so the pending cut will reduce it even more. Oaks on hills are 33 sf BA now and will be heavily cut. Removal of tall trees during last logging is quite evident, so BA after next logging will be very low and highly visible.
7	Trout Lake 23-19 46.048437918869745, -89.67376682322413 And 46.04986015310986, -89.672994347094 And 46.051721660953554, -89.67623445531757	RMZs of harvest area on west shore	50-75 feet in some places, 100-300 feet in length	Zero to 10-20 sf BA	No	No	Yes (before 4/25/21)	Violates BMPs and NHAL standards. Aside from Upper Gresham and Jute lakes, this was the worst harvest site yet seen. Visited April 25, 2021. Cut April 2021. Not clear if any oaks were cut after oak wilt restrictions began April 15. Was the annihilation of the oak stand. While the no-cut zone in some areas may have been ~100 feet deep as measured along the ground, that shoreline consisted of steep and/or continuous slopes, so the buffer should have been deeper. Shoreline/viewshed shortened with nearly entire removal of all tall trees from top of steep slopes that were ~40 feet back from water horizontally. Few to no leave trees in rest of 100 ft RMZ; skid road ran right behind no-cut buffer. Heavy logging to 100 feet back and far beyond. Heavy

								logging clearly visible from Cathedral Point and the campsites.
8	<p>Escanaba Lake *Could not locate tract map*</p> <p>See video for map of lake.</p> <p>46.062700710289306, -89.59511840826073 To 46.06106291239767, -89.59320867560567</p>	<p>West shore</p>	<p>40-60 feet</p> <p>100+ ft on one steep slope</p>	<p>Zero to 10-30 sf BA</p>	No	No	Yes (likely 2019-2020)	<p>Violates BMPs and NHAL standards. **Notes revised after 5/23 visit.** Visited 5/8/21 and 5/23/21. No tract map on DNR website. Tract was logged 1-2 years ago. Escanaba is a wild lake that is part of a State Natural Area. The logged portion is the only stretch that is not in the SNA. Lake is surrounded by a trail system that 100s/1000s of people use year-round. No-cut zones at the lakeshore were ~40-50 feet deep in many places and 100+ feet deep on a steep slope covered in balsam. Trees at the shoreline were mostly small and short: balsams, birch, some pines and oaks/maples. The cut behind the no-cut zone was heavy at zero to 10-30 sf BA in the worst places. There was a skid road immediately behind the no-cut zone for much of its length. The northernmost 600 feet had the worst no-cut zone with very low BA behind the thin buffer. The narrow no-cut zone and a shelterwood harvest behind it means that when the area is logged again in coming years, what is there will be markedly inadequate for appropriate RMZ management. Logging was also very heavy for much of the trail system west of the lake. Several trail users told us about the cut before the visit.</p>
9	<p>Big Muskellunge Lake LittleJohnJuniorOak and 11-21</p> <p>46.019423236970304, -89.62944726504443 To 46.0168751897139, -89.62985496077977 And</p>	<p>Unit 134-4 on west shore</p> <p>Unit C on southeast shore</p>	<p>50-70 ft on west shore</p> <p>75-100 ft on SE shore</p>	<p>Zero-30 sf BA</p> <p>30-40 sf BA</p>	No	No	No (as of 4/25/21)	<p>Violates BMPs and NHAL standards. On the west shore, the trees in the RMZ of unit 134-4 show older paint marks from logging in 2010. If the DNR uses the same marks (which is common), the no-cut zone will be 50-70 ft deep and residual BA will be 0-30 sf. Current BA is 33 sf and the next cut will be an overstory removal. This will leave zero BA. Afterward, complying with BMPs will be impossible. Even now, the DNR would have to set the no-cut zone much farther back because the BA is so low. BMPs were violated 11 years ago in previous sale. A prescribed burn (mentioned in the cutting</p>

	46.01542975398912, - 89.63034848719624							<p>description) will do little or nothing to deal with the extensive maple growth now present. It is a maple thicket.</p> <p>Setting the no-cut zone deeper now, however, will allow younger trees to grow to 5" DBH relatively soon to restore the RMZ. This RMZ is savable <u>before</u> it is sold again.</p> <p>On the SE shore in Unit C, the redline behind the no-cut zone is 75-80 feet in from the OHWM. It is 100 feet deep in some places. There are some mature trees in the buffer, but lots of shorter, smaller trees, including balsam. The area behind this no-cut zone will be heavily cut, with residual BA of 30-40 sf. It is a violation, due to the lack of even tree distribution and the absence of consistent residual BA of at least 60 sf in a 100-foot RMZ buffer. The standards do not allow a claim that there are enough trees in a shallow buffer to make up for a lack of width.</p> <p>Before this tract is sold, there is still an opportunity to deepen the no-cut zone to comply with standards.</p>
10	White Sand Lake C95H 46.095099336801525, -89.60172832617009 To 46.09515885721414, - 89.59138572909437	North shore	>150 feet deep	30 sf or less	Yes, in buffer	Yes	No (as of 1/21)	<p>Complies with BMPs and NHAL standards. Visits Aug. 15, 2020, and January 2021. This is an example of the DNR meeting BMPs in an RMZ where they have set the no-cut zone deep enough to meet the site's conditions. The no-cut zone includes a very steep slope up to a plateau that had an oak shelterwood harvest a few years ago. The next cut will be an overstory harvest. However, with the adequately deep buffer and the very dense population of trees in the buffer – including many coniferous and deciduous species at various heights and maturity levels (tall oaks predominate) – the buffer is adequate and meets standards and BMPs, surpassing minimums as the situation warrants.</p>

11	Jute Lake JuteLakeOak 46.1517298141194, - 89.51428256607487 To 46.15052575025668, - 89.51213679904671	South shore	No RMZ buffer marked. Fringe of trees at shoreline is 18-25 feet deep	10-30 sf	No	No	No (as of March 2021)	Violates BMPs and NHAL standards. Visited in March 2021. One of the most egregious cuts we saw. South shore heavily logged a few years ago. No RMZ buffer was marked nor observed. A fringe of trees was left standing at the water, 18-25 feet deep. BA behind there was 10-30 sf. There are many sprouted maple stumps. The tract map for the next sale says that BMPs will be applied, but this will be impossible, given current conditions.
12	Oswego Lake 10-20 46.138489942679136, -89.60318505442373 To 46.13866092900061, - 89.60183322119597	North shore, eastern end	No buffer marked in areas; 60-65 feet deep in other areas	40-50 sf and 20-30 sf	No	No	No (as of 4/11/21)	Violates BMPs and NHAL standards. Visited April 11, 2021. The current sale includes one-third of the lake's north shore. There was no buffer marked along much of the shore, where a road runs a few yards inland along the water. Residual BA of the road is zero, and between the road and 100 ft in from the OHWM the residual BA will be 40-50 sf. Current BA from the road to the shoreline is zero to less than 10. In parts of this area, trees are marked for cutting ~50 feet from the OHWM. Where there is a redline marked close to a curve in the road, the no-cut zone is 60-65 ft deep. Residual BA will be 20-30 sf between the redline and 100 feet back from the OHWM. Tree population is already patchy and will be much more so after the cut.
13	Ballard Lake 6-18 46.068515486538146, -89.49929190374264 To 46.06329317656868, - 89.51275007686716 and inland approx. to 46.06584628255152, - 89.51043884603239	North shore	Up to 150 ft deep	40-90 sf. Avg is ~60 sf	Yes	Yes (see notes)	No (as of 5/2/21)	Complies with BMPs. While there were select areas that did not comply with buffer depth, the overall RMZ in this tract complied with the minimum BMPs to a tree but no more. By just meeting the BMPs, aesthetics will still be noticeably impacted, which calls into question compliance with the Master Plan. In the oak and aspen stand high up on a bluff (which dominates much of the north shoreline), the cut will be heavy, which will affect wildlife habitat and aesthetics. The DNR should have green-marked some large trees, which would not have significantly impacted the timber sale.

								This RMZ design was notable because it used a graduated approach. Behind the no-cut buffer at the water, there is a thinning zone 150-200 ft deep. Much heavier cutting begins behind the thinning zone. This approach keeps the heavy cut from devastating the RMZ and viewshed on Ballard, unlike the DNR's planned heavy cuts on lakes including Whitney, or on lakes where such heavy cuts have already occurred, such as Trout, Upper Gresham and Jute.
14	Bird Lake 6-21	North/NE shore	100-180 feet deep	0-20 sf	Yes, in buffer.	Yes	No (as of 4/20/21)	Complies with BMPs and NHAL standards. Visited 4/20/21. Meets BMPs due to a buffer that meets or surpasses the minimum standard. Cut is very heavy behind the buffer.
15	Clear Lake 27-20	Parts of south shore	100-150 feet deep	0-20 sf	Yes, in buffer.	Yes	No (as of 4/21)	Complies with BMPs and NHAL standards. Visited 4/21. Meets BMPs due to a buffer that meets or surpasses the minimum standard. Overstory removal behind the buffer will be extensive.