



Caron Environmental Consulting

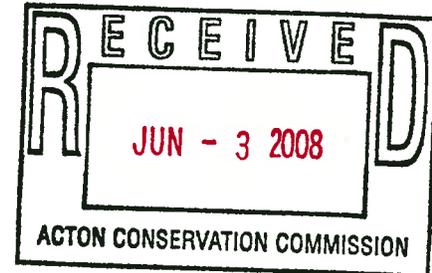
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Wetlands • Forestry • Permitting • Habitat Studies

May 20, 2008

Acton Conservation Commission
472 Main Street
Acton, MA 01720

Re: Review of Wetland Impacts
70 Newtown Road



Dear Commission Members:

As requested, we have conducted a preliminary review of recent buffer zone disturbance at 70 Newtown Road. A preliminary inspection was conducted on February 22, 2008 with Tom Tidman and two Commission members. A more detailed inspection was conducted after snowmelt on April 15, 2008. Several Commission members, Tom Tidman, the Commission counsel and the property owner's counsel were present.

An area of forest has been cleared adjacent to an existing house. The area that was cleared appears to be about 3200 square feet in area. Twenty-three living and one dead tree were cut. The area of clearing was between the prior limit of clearing near the garage and the adjacent edge of wetlands. The adjacent wetland is a forested wetland that contains an intermittent stream channel.

It is our understanding that no Order of Conditions was in effect for this work under either the Wetlands Protection Act or the Acton Wetlands Bylaw. The work is clearly within an area subject to the jurisdiction of both statutes. Under the Act, landowners do have an exemption for tree removal when the harvested forest products are for their use, within certain limitations. It does not appear that this work qualifies for that exemption as the harvested trees were removed from the site and were not removed for the landowners' use. It does not appear that this exemption exists under the bylaw.

During our site inspection, we determined the diameter and species of each stump, and sketched each stump's approximate location. Under the Bylaw, it appears that any penalty assessed by the Commission would be based on the circumference of the cut trees. The total stump circumference of the twenty-three live trees that were cut is 1,095 inches. A table detailing the stump measurements is attached.

The removal of trees adjacent to a wetland can have several impacts on the wetland. The degree of impact can vary considerably depending upon a large number of variables. The impacts can also be of varying duration.

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Decreased shade in the wetland could result in a drying of the wetland due to increased insolation. In addition, the increased sunlight could trigger changes in plant growth or species composition, impacting the wetland. In this instance, this impact should be minimal as the clearing is to the north of the wetland, so the only increase in light will be in the form of indirect sunlight.

The removal of the upland buffer can significantly increase the chance that trees in the wetland will be subject to windthrow. Trees in wetlands are shallow rooted and the saturated soil provides far less support than upland soils. The increased threat of windthrow is the most significant impact of the clearing at this location. Fortunately, the site is in a relatively low area which should minimize this threat, however, the windthrow potential has been significantly increased.

The erosion potential due to the clearing is minimal. It does not appear that there was any soil disturbance and the area is relatively flat.

While the clearing certainly has had an impact on wildlife habitat, it would be difficult to describe it as a negative impact. Wooded, the area likely provided habitat for forest edge species as well as some overstory specialists such as black-throated green warblers and squirrels. The cleared area will still provide good habitat, just for a different suite of species, such as song sparrows, common yellowthroats, catbirds and small mammals.

Extensive tree removal can have temporary impacts on hydrology. The impacts are typically short-lived and not severe. Trees transpire large quantities of water resulting in a lower surface water table. If enough trees are removed, the water table can be raised by a few inches. In this instance the area cleared is relatively small, so any impact should also be small. It is unlikely that the water table would change by more than a couple of inches, and the change could be smaller.

In summary, short-term impacts from the clearing do exist, but do not appear to be extensive. The most serious impact could be windthrow in the adjacent wetland. The extent, if any, of this impact will depend on weather conditions, and will lessen as time goes by.

The most serious impact of the clearing could be long-term, if the area is not allowed to revert naturally for forest. If the area were to remain cleared with only low brush and herbaceous vegetation, many of the impacts described above would continue and could be magnified. In

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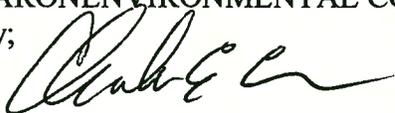
addition, if the area were to be converted to lawn or another landscaped conditions, the impacts on the wetland could be significant.

Our initial recommendations and suggestions are as follows:

- The area should be allowed to revert naturally to forest, without any additional manipulation of the vegetation. It does not appear that replanting is necessary or practical.
- The Commission should consider what measures could be used to ensure that this area remains undisturbed in the future. These measures could include, but are not limited to, signage, an explicit deed restriction, the establishment of a vegetated barrier within the previous limits of disturbance or the creation of another type of barrier. We recommend that at a minimum that a row of shrub plantings be established along the outside edge of the clearing, following the stone wall along the driveway and the edge of grass near the septic system. The purpose of these plantings would be to create a clear demarcation of the limits of maintained lawn/landscaping. We recommend that thirty-two shrubs be planting with approximately a four foot spacing. We recommend that the property owners select the species to be planted. If they choose shrubs that they like it is more likely that they will remain in place long-term. The only strict requirement on the selection process that we recommend is that they all must be native species.
- The Commission could require an after-the-fact Notice of Intent filing under both the Bylaw and the Act.
- The Commission could assess a monetary penalty under the Bylaw.

If you have any questions in regards to this matter, please feel free to contact us.

Very truly yours,
CARONENVIRONMENTAL CONSULTING,
By;



Charles E. Caron

Table 1: Species, Stump Diameters and Stump Circumferences of trees removed at 70 Newtown Road, Acton, MA

Tree#	Species	Stump Diam. (In.)	Stump Circumference (In.)
1	White Pine	24.6	77.3
2	White Pine (dead)	16.8	
3	White Pine	22.8	71.6
4	White Pine	9.6	30.2
5	Black Birch	7.2	22.6
6	White Pine	28.2	88.6
7	White Pine	16.2	50.9
8	Black Birch	5.4	17.0
9	White Pine	16.2	50.9
10	White Pine	14.4	45.2
11	White Pine	7.2	22.6
12	Black Birch	8.0	25.1
13	White Pine	22.8	71.6
14	White Pine	19.2	60.3
15	Black Birch	6.0	18.8
16	White Pine	15.6	49.0
17	White Pine	10.2	32.0
18	White Pine	22.8	71.6
19	White Pine	10.8	33.9
20	Black Birch	6.6	20.7
21	Black Birch	8.4	26.4
22	Oak (likely Black)	30.6	96.1
23	White Pine	28.8	90.5
24	White Pine	26.4	82.9
	Total		1095.4

Figure 1: View of Cleared Area of Septic System Mound, April 15, 2008

