



# KENTUCKY HEARTWOOD

Protecting the Beauty and Wellbeing of Kentucky's Native Forests

July 26, 2009

Dear Acting Forest Supervisor Lorenz and other DBNF staff,

Thank you for the opportunity to comment on the Suppression of Hemlock Woolly Adelgid on the Daniel Boone National Forest. We appreciate the Forest Service's willingness to take a hard look at this situation and to take proactive steps to retain some hemlock component on the DBNF.

While we generally support the Forest Service moving forward quickly in order to maximize the effectiveness of the program, we have several concerns that we would like to see adequately addressed in an Environmental Analysis.

## **Distribution**

The spatial distribution of Hemlock Conservation Areas (HCAs) across the forest generally seems good, both in terms of maximizing the conservation of genetic resources as well as the potential for repopulating the forest with hemlocks should biological control prove successful in the long-term.

That said, we are unable to clearly discern from the maps provided the precise locations of these HCAs. We do hope that the Forest Service will make available concomitant with the release of the EA detailed topographic maps of each of the areas. We understand that an extra ninety-four pages of maps is a lot of printing, and would be happy if such maps were made available electronically on the DBNF website.

Of particular interest at this time is the conservation of Tight Hollow. It appears from the maps that Tight Hollow is identified as a HCA, but we cannot tell for certain. We strongly believe that this unique tract of forest should be treated and made a high priority, despite the complications of access to the site. Because of the difficulty of access and the importance of the place, we would be happy to assist in any capacity that we can in the treatment of Tight Hollow.

## **Imidacloprid**

Imidacloprid is a chemical that may have significant, even severe, environmental impacts. We recognize that there is a tradeoff to be made here in the effort to retain hemlocks on the DBNF, but the impacts do need to be *thoroughly* disclosed in an EA. It is not our intent to see this project bound up in "red tape," but such disclosure is necessary for adequate public

input and an informed decision to be made. There are also a good number of independent studies and reports indicating that the safety information and data provided by the chemical's manufacturer, Bayer, has been quite misleading – considerably understating the environmental impacts of the insecticide. We hope that the Forest Service will make sure to use a wide range of credible assessments of imidacloprid's potential impacts in the EA.

Imidacloprid is strongly associated with Colony Collapse Disorder in bees, and is banned for several uses in France, Germany, Italy, and Slovenia, and there is a strong movement urging its ban in the U.K. It has been reported that after the ban of imidacloprid on sunflowers, oilseed rape, and corn France, the sharp decline in bee populations that began around the time of its introduction turned around in some regions of that country. The US Environmental Protection Agency recently announced that it would begin a review of the use of imidacloprid in the United States. Admitting that honeybees are not native to North America, the apparent impacts to these largely beneficial insects are a likely indicator of the effects of imidacloprid on many other less studied or unrecognized beneficial and native insects.

The half-life of imidacloprid in soils has been reported from 48-190 days, and has been shown to be highly toxic to earthworms and other soil invertebrates. While it does have a tendency to adsorb to soil particles, there is a degree of leaching that occurs that can potentially cause great harm to soil invertebrate communities as well as aquatic habitat. This leaching is mitigated through trunk injections, rather than soil injections or drenches. Soil drenching appears to be the worst approach in this regard.

A major concern is that repeated applications (over several year intervals) throughout a stand of hemlocks will cause massive changes in the soil communities that are as much a part of the ecosystem we're trying to retain as the hemlocks themselves. While the decision may ultimately be made to use imidacloprid, we should know what the potential impacts to soil communities might be, and how to minimize those impacts.

Because of the increased risk to soil communities, as well as water resources, from soil applications of imidacloprid, the Forest Service should take another look at trunk injection for at least some sites. While this does increase the risk to individual trees of other injurious insects and fungi, it may be worth considering in order to mitigate the negative impacts of soil applications. While more than two or three trunk injections may lead to an unacceptable risk to the tree, it may be worth losing a percentage of the hemlocks from these wounds in order to retain a more healthy soil community.

And further, the Forest Service needs to consider and disclose for how long these treatments might continue, and the cumulative impacts of repetitive insecticide treatments in these stands. If biological controls do not prove themselves effective, treatment with imidacloprid or other systemic insecticides will only prolong the inevitable while adding significant amounts of toxic chemicals into the ecosystem. On a temporary basis it may well be worth the ecological and financial costs, but this cannot be a long-term solution.

## **Biological Controls**

Introducing non-native species is a dangerous proposition, and one that Kentucky Heartwood endorses very hesitantly. However, weighed against the impacts of losing our hemlocks, we are open to this endeavor. Short of identifying or engineering resistant populations, there appears to be little else that we can do. We have seen some evidence from field trials in North Carolina that after several years, introduced beetles are having a beneficial impact and with some mature hemlocks putting out new tip growth with young, apparently healthy, hemlocks beginning to replace those lost.

It is very important that the Forest Service provide in an EA clear references to field trials in other states, including success and failures – assuming both exist. A short discussion on the matter is not adequate for a proposition as significant as releasing a non-native species into the forests here. While research on these various beetles so far indicates that they are so highly specialized in their appetite for the Hemlock Woolly Adelgid that they will not move on to other native species, we can not be certain and so must move forward with as much caution and disclosure as possible.

## **Research Potential and Needs**

We strongly encourage the Forest Service to reach out to the scientific community and research institutions to use this program for scientific research into the effects of HWA and the various treatments proposed. In particular, comparative studies contrasting untreated areas with treated areas are needed, evaluating not only hemlock survival/mortality, but the composition of associated soil, aquatic, and other associated communities. This project offers a rare chance to conduct such research, and any information gleaned from it may prove an invaluable tool as the ecological changes now underway proceed.

## **Collaboration**

Kentucky Heartwood has many members and volunteers that love to get out in the woods, and are very concerned about the conservation of hemlocks in our forests. We understand that monitoring will be needed to watch for the arrival of HWA in the proposed HCAs, and would be happy to discuss a program where we get members to “adopt” certain HCAs to regularly monitor and report back directly to the DBNF or through us as intermediary. Where allowed, we may also be able to get volunteer support for treatments. Please let us know how we can be of assistance in this regard.

## **Summary**

Kentucky Heartwood, weighing the alternatives, does support the limited use of imidacloprid as a temporary means to save our hemlocks. This support is contingent on the results of the Environmental Analysis in which the Forest Service takes a hard look at

and discloses the impacts of imidacloprid, including a review of whether potential impacts to soil and aquatic communities may make trunk injections on some sites a better option.

We offer our tentative support for the biological control methods as proposed, though we expect that available information from prior releases and test plots be presented in an EA.

Despite our discomfort with the both types of treatment, we understand the dramatic and devastating nature of the situation, and hope that the Forest Service can develop an Environmental Assessment of high quality in a relatively short period of time, and that the project can be implemented in time to achieve a maximum benefit.

For Kentucky Heartwood,

A handwritten signature in black ink that reads "Jim Scheff". The signature is written in a cursive, slightly slanted style.

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