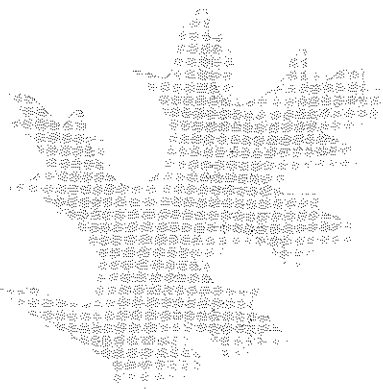


Healthy Forests in Kentucky

NEARLY 12 MILLION ACRES IN KENTUCKY ARE FORESTED, AND THESE FORESTS ARE AN INCREDIBLY IMPORTANT RESOURCE FOR OUR CITIZENS – ECONOMICALLY, ECOLOGICALLY, AND SOCIALLY. MORE THAN 37,000 JOBS ARE DIRECTLY RELATED TO THE FOREST INDUSTRY IN KENTUCKY. WOOD AND WOOD PRODUCTS GENERATE OVER \$8 BILLION ANNUALLY. AN ESTIMATED \$1.5 BILLION IS SPENT ANNUALLY ON FISHING, HUNTING AND WILDLIFE WATCHING IN KENTUCKY – ALL OF WHICH DEPEND ON HEALTHY FORESTS. PROTECTING THE HEALTH OF KENTUCKY’S FORESTS IS VITALLY IMPORTANT, AND REQUIRES MODERN SUSTAINABLE FOREST MANAGEMENT PRACTICES. ONE ASPECT OF SUSTAINABLE MANAGEMENT CALLS FOR PREVENTING THE ESTABLISHMENT OF INVASIVE PEST SPECIES THROUGH MONITORING AND SUPPRESSION.



THREATS TO HEALTHY FORESTS IN KENTUCKY

RECENT RELAXATIONS IN TRADE RESTRICTIONS AND GLOBALIZATION HAVE LED TO INCREASES IN THE IMPORTATION OF EXOTIC PATHOGENS, PLANTS, AND INSECTS. MANY OF THESE EXOTIC SPECIES ARE POTENTIALLY INVASIVE SPECIES THAT CAN ALTER FOREST ECOSYSTEMS AND THREATEN THE HEALTH OF KENTUCKY'S FORESTS.

GOAL: HEALTHY FORESTS IN KENTUCKY

OUR LONG-TERM GOAL IS TO MAINTAIN FORESTS IN KENTUCKY THAT HAVE THE CAPACITY FOR RENEWAL, FOR RECOVERY FROM A WIDE RANGE OF DISTURBANCES, AND FOR RETENTION OF THEIR ECOLOGICAL RESILIENCY, WHILE MEETING SOCIETAL NEEDS FOR USES, PRODUCTS, AND SERVICES.

INVASIVE PESTS THREATENING KENTUCKY'S FORESTS

SUDDEN OAK DEATH – KENTUCKY IS AT HIGH RISK FOR SUDDEN OAK DEATH BECAUSE OF OUR OPTIMAL CLIMATE AND FOREST COMPOSITION (RED OAKS ARE CONSIDERED HIGHLY SUSCEPTIBLE; 72% OF OUR FORESTS ARE THE OAK-HICKORY FOREST TYPE). A PROACTIVE MONITORING PROGRAM FOR SUDDEN OAK DEATH IN FORESTS AND NURSERIES HAS BEEN IN PLACE FOR OVER THREE YEARS, SAMPLING TENS OF THOUSANDS OF PLANTS ([WWW.KYFORESTHEALTH.ORG](http://www.kyforesthealth.org)). THERE HAVE BEEN NO POSITIVE FINDS IN KENTUCKY. **ADDITIONAL INFORMATION ABOUT**

THE TYPES OF SAMPLES TAKEN AND THE RESULTS OF THESE SAMPLES CAN BE FOUND AT WWW.CA.UKY.EDU/KYWOODLANDSMAGAZINE/PAST_ISSUES/2006/JUNE2006/PDFS/PG_11.PDF

EMERALD ASH BORER – THIS EXOTIC INVASIVE INSECT WAS FIRST DISCOVERED IN MICHIGAN IN 2002, AND HAS SINCE EXPANDED ITS RANGE INTO SEVERAL ADJACENT STATES. ACTIVE INFESTATIONS EXIST WITHIN 10 MILES OF KENTUCKY. THIS IS A WOOD BORING INSECT THAT FEEDS ON THE VASCULAR SYSTEM AND KILLS ITS HOSTS, WHICH INCLUDE VIRTUALLY ALL EASTERN ASH SPECIES. IT IS A MAJOR THREAT TO THE ASH IN OUR FORESTS, AND COULD DEVASTATE LANDSCAPE PLANTINGS AND URBAN FORESTS (WWW.KYFORESTHEALTH.ORG). A MONITORING AND EDUCATION PROGRAM HAS BEEN IMPLEMENTED BY STATE AGENCIES. IN 2007, THE STATE PARKS IN KENTUCKY BANNED OUT OF STATE FIREWOOD AS A PROACTIVE MEASURE TO PREVENT THE SPREAD OF THE EMERALD ASH BORER AND SIMILAR EXOTIC PESTS TO STATE CAMPGROUNDS. THE KENTUCKY FOREST HEALTH TASK FORCE IS DEVELOPING A PROACTIVE PLAN FOR EMERALD ASH BORER PREVENTION AND MANAGEMENT. TO REPORT A SUSPECTED INFESTATION OF THE EMERALD ASH BORER IN KENTUCKY - CALL 1-866-322-4512 FOR MORE INFORMATION SEE [HTTP://PEST.CA.UKY.EDU/EXT/EAB/WELCOME.HTML](http://PEST.CA.UKY.EDU/EXT/EAB/WELCOME.HTML)



AN ADULT EMERALD ASH BORER

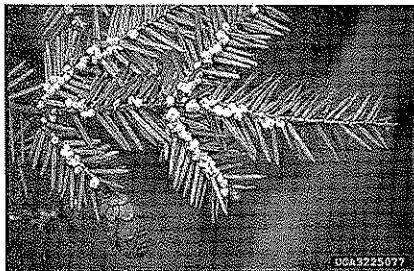


HEMLOCK WOOLLY ADELGID – FIRST DISCOVERED IN KENTUCKY IN MARCH 2006, THIS INSECT HAS KILLED OVER 75% OF THE HEMLOCKS IN NEIGHBORING VIRGINIA’S SHENANDOAH NATIONAL PARK. THE POTENTIAL LOSS OF HEMLOCKS IN EASTERN KENTUCKY WOULD HAVE MAJOR ECOLOGICAL AND ENVIRONMENTAL EFFECTS ON FOREST HEALTH, INCLUDING SOIL EROSION, WATER QUALITY, AND BIODIVERSITY (WWW.KYFORESTHEALTH.ORG). STATE AGENCIES ARE ACTIVELY SURVEYING FOR ADELGID INFESTATIONS. LONG TERM MONITORING TO ASSESS ITS EFFECTS ON FOREST COMPOSITION AND STRUCTURE HAVE BEEN IMPLEMENTED. IN 2007, IN COLLABORATION WITH THE US FOREST SERVICE (1) NEARLY 500 INFESTED TREES WERE TREATED AT PINE MOUNTAIN SETTLEMENT SCHOOL TO REDUCE THE SPREAD OF THE ADELGID, AND (2) APPROXIMATELY 20,000 PREDATORY BEETLES THAT FEED ON THE ADELGID WERE RELEASED IN SEVERAL LOCATIONS IN KENTUCKY. A DETAILED MAP OF ADELGID SURVEYS IN THE STATE IS AT

[HTTP://WWW.UKY.EDU/~SFEI2/HWA.HTM](http://www.uky.edu/~sfei2/hwa.htm)

ADDITIONAL INFORMATION ON THE ADELGID CAN BE FOUND AT

[HTTP://PEST.CA.UKY.EDU/EXT/HWA/WELCOME.HTML](http://pest.ca.uky.edu/EXT/HWA/WELCOME.HTML)



A BRANCH INFESTED BY THE HEMLOCK WOOLLY ADELGID

GYPSY MOTH – THE INVASIVE GYPSY MOTH IS A CONSTANT THREAT TO KENTUCKY’S FORESTS. IN NEIGHBORING WEST VIRGINIA THE GYPSY MOTH HAS CAUSED 20% OAK MORTALITY, RESULTING IN \$20M IN REVENUE LOSSES. THE COMPOSITION OF KENTUCKY’S OAK-DOMINATED FORESTS MAKES THEM

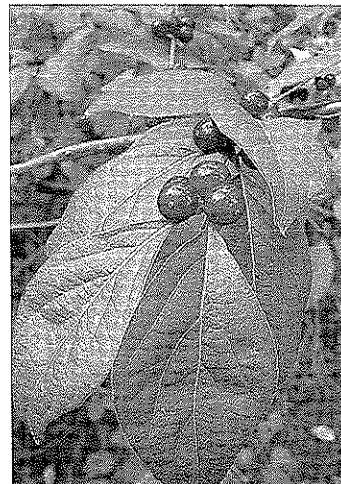


EXTREMELY SUSCEPTIBLE. AN ACTIVE PROGRAM OVER THE PAST TEN YEARS INVOLVING SURVEYING, MONITORING, AND ERADICATION HAVE KEPT THE EFFECTS OF GYPSY MOTH ON KENTUCKY’S URBAN AND RURAL FORESTS TO A MINIMUM. IN 2006, 130 ADULT MALE GYPSY MOTHS WERE COLLECTED IN KENTUCKY. MOST OF THESE INDIVIDUALS WERE FOUND IN TRAPS SET IN THE NORTHEASTERN PORTION OF THE STATE. TO SEE RESULTS OF RECENT GYPSY MOTH SURVEYS VISIT

[HTTP://WWW.UKY.EDU/AG/NURSERYINSPECTION/GYPSYMOTH](http://www.uky.edu/AG/NURSERYINSPECTION/GYPSYMOTH)

NON-NATIVE INVASIVE PLANTS – ASIAN BITTERSWEET, SEVERAL HONEYSUCKLE SPECIES, GARLIC MUSTARD, TREE-OF-HEAVEN, AND KUDZU ARE JUST A FEW OF THE EXOTIC INVASIVE PLANTS CHANGING THE FACE OF KENTUCKY’S FOREST LANDSCAPE. THESE INVADERS COMPROMISE FOREST HEALTH BY REDUCING PRODUCTIVITY AND BIODIVERSITY. INCREASED EDUCATION AND AWARENESS, AND IMPROVED MANAGEMENT PRACTICES ARE ESSENTIAL TO MINIMIZE THE IMPACT OF NON-NATIVE INVASIVE PLANTS. INFORMATION ABOUT INVASIVE PLANTS IN KENTUCKY CAN BE FOUND AT

[HTTP://WWW.NATUREPRESERVES.KY.GOV/INFORESOURCES/FACTSHEETS.HTM](http://www.naturepreserves.ky.gov/inforesources/factsheets.htm)



BUSH HONEYSUCKLE



WE MUST FIND WAYS TO CURTAIL THE EXPLOSIVE GROWTH OF INVASIVE SPECIES AND PROTECT KENTUCKY'S NATURAL HERITAGE FOR FUTURE GENERATIONS

ADDITIONAL SUPPORT REQUIRED FOR COMBINED FEDERAL/STATE/UNIVERSITY PROGRAMS IN MANAGEMENT, RESEARCH AND EDUCATION:

\$10 MILLION TOTAL (\$2 MILLION FOR EACH OF THE NEXT 5 YEARS REPRESENTS LESS THAN 0.2% OF THE ECONOMIC VALUE OF KENTUCKY'S FORESTS)

A \$10M INVESTMENT IN KENTUCKY'S FOREST HEALTH WILL PROVIDE . . .

SURVEYS: SYSTEMATIC AERIAL AND GROUND SURVEYS OF KENTUCKY'S THREATENED RESOURCES, INCLUDING OLD GROWTH HEMLOCKS, OAK, AND ASH (\$2M)

DETECTION: DETECTION SURVEYS FOR INVASIVE SPECIES, INCLUDING SUDDEN OAK DEATH, HEMLOCK WOOLLY ADELGID, EMERALD ASH BORER, GYPSY MOTH, INVASIVE PLANT SPECIES (\$2M)

MANAGEMENT: INCLUDING USE OF BOTH TRADITIONAL AND NOVEL APPROACHES (NATURAL ENEMIES FOR HEMLOCK WOOLLY ADELGID CONTROL, GOATS FOR SUPPRESSION OF INVASIVE PLANTS) (\$2M)

EDUCATION: HUMAN ACTIVITIES INFLUENCE THE SPREAD OF MANY INVASIVE SPECIES; KENTUCKY'S CITIZENS NEED TO BE INFORMED. K-12 PROGRAMS MUST BE DEVELOPED TO EDUCATE OUR YOUNG PEOPLE. ENHANCED EXTENSION ACTIVITIES TO INFORM SPECIAL INTEREST GROUPS (\$2M)

RESTORATION: REPLANTING AND RESTORING NATURAL, URBAN, AND MUNICIPAL AREAS (\$2M)

WE MUST RESPOND TO THESE INVASIVE SPECIES USING A COORDINATED AND INTELLIGENT APPROACH, OR THE COMPOSITION AND INTEGRITY OF KENTUCKY'S FORESTS WILL BE IRREVERSIBLY ALTERED. THE MANY ECONOMIC BENEFITS DERIVED FROM OUR FORESTS WILL BE DRAMATICALLY REDUCED. WE NEED TO ACT NOW TO PREVENT THE LOSS OF OAKS, ASH, AND HEMLOCKS, AND MANY NATIVE WILDFLOWER AND UNDER-STORY PLANT SPECIES FROM KENTUCKY'S FORESTS.



UK

UNIVERSITY OF KENTUCKY

College of Agriculture