

North Dakota Nursery News

*A Newsletter of Information Relevant to the North Dakota Nursery Industry
A Publication of the NDDA, Division of Plant Protection*

Volume 6, Issue 1

January 22, 2003

Numerous New Exotic Pest Detection's in North America

The past century saw many exotic pest invasions into the United States. Dutch Elm Disease, Chestnut Blight, and the European Gypsy Moth are three of the most notable introductions that have caused severe damage to American forests. Increased global trade and massive importation and distribution of new products to new areas has contributed to increased pest introductions. Solid wood packing material has been implicated in the introduction of various wood boring insects as have bonsai nursery stock. Conditions of entry of such material have been tightened in recent years but not before the introduction of several potentially serious pests including Asian Longhorned Beetle, Citrus Longhorned Beetle, Japanese Cedar Longhorned Beetle, Brown Spruce Longhorned Beetle, Emerald Ash Borer, and Red Haired Bark Beetle.

Two of these pests are of particular concern to North Dakota -the Asian Longhorned beetle which we have discussed in previous issues and the Emerald Ash Borer (EAB). Both are under quarantine and eradication programs elsewhere in the country. EAB was discovered earlier this year in the Detroit, MI area and now infests

Continued on page 2

New Plant Disease Alert Sudden Oak Death

Sudden Oak Death is caused by the fungal pathogen *Phytophthora ramorum*. Since its appearance in 1995, Sudden Oak Death has killed tens of thousands of trees in Northern California, including coast live oaks, black oaks, and tanoaks. It also infects numerous rhododendron species, buckeye, madrone, manzanita, bigleaf maple, bay laurel, and evergreen huckleberry. Limited testing suggests that northern red oak and pin oak are highly susceptible to *P. ramorum*. Current distribution of this pathogen is limited to California and Oregon where it is under federal quarantine. In California, Sudden Oak Death has been identified in 10 counties: Alameda, Marin, Mendocino, Monterey, Napa, San Mateo, Santa Clara, Santa Cruz, Solano, and Sonoma. In Oregon, it has been confirmed in the southwestern corner of the state, in the town of Brookings.

Symptoms vary on different hosts, and different symptoms occur on different plant structures. On the oaks, cankers form on the stem, which eventually begin to bleed and ooze a dark reddish-brown thick sap.

continued on page 3

INSIDE THIS ISSUE

2	Upcoming Meetings & Workshops
3	Blacknot and the Lesser Peach Tree Borer
3	Japanese Beetle Update
4	Community Forestry Grants
5	New Pest Alert - Emerald Ash Borer
6	Saltcedar – North Dakota's Newest Noxious Weed



1. Leaf symptoms exhibited on Rhododendron leaves.
2. Bleeding ooze from canker on an infected oak.
3. Area in California with known infections.

more than 500,000 acres. This exotic pest is native to northern China and is known to infest Ash, Elm and Walnut. With the major forest type in North Dakota being the Elm-Ash forest and ash being such an important component of urban forests and other plantings, the emerald ash borer could spell real trouble should it spread into our region.

To learn more about these new pests, visit the USDA website at:
<http://www.ceris.purdue.edu/napis/pests/index.html>.

If you suspect Asian Longhorned beetle, Emerald Ash borer or other suspicious longhorned beetles, please contact the ND Department of Agriculture.



Emerald Ash Borer



Asian Longhorned Beetle



Cedar Longhorned Beetle



Citrus Longhorned beetle



Upcoming Meetings and Workshops

1. ND Nursery and Greenhouse Assn. Convention and Trade show. Annual meeting. January 26-28, 2003. Holiday Inn. Fargo, ND. call (701) 886-7673.
2. North Dakota Urban & Community Forestry Assn. @ The Seven Seas. Mandan, ND. Feb 19-20, 2003.
3. ISA Certification Testing – ND. Feb 18, 2003. 5:00-8:30pm. For Info call (701) 222-6561.
4. Minnesota Green Expo. Minnesota, MN. January 8-10, 2003. For Info call (651) 633-4987.
5. American Nursery & Landscape Association – Management Clinic, Building your Business. January 30-Feb 2, 2003. Louisville, Kentucky. (202) 789-2900.
6. National Arborist Association - Winter Management Conference. Westin Rio Mar Beach. Rio Grande, Puerto Rico. February 4-9, 2003. (800) 733-2622.

Noxious and New Invasive Weed Control

Dean Cline, NDDA Noxious Weed Division

The Noxious Weeds Division of Plant Industries has programs that reimburse counties for certain noxious weed and new invasive weed control activities. Many county weed boards in turn have cost share programs available for landowners.

State noxious weeds include absinth wormwood, Canada thistle, Dalmatian toadflax, diffuse knapweed, Russian knapweed, spotted knapweed, field bindweed, leafy spurge, musk thistle, purple loosestrife, saltcedar, and yellow starthistle.

New invasive weeds include black henbane, Dalmatian toadflax, yellow toadflax, hoary cress, diffuse knapweed, Russian knapweed, spotted knapweed, St. Johnswort (*Hypericum perforatum*), saltcedar and purple loosestrife.

Contact your county weed board or the NDDA Noxious Weed Division (800 242-7535) for additional information.

Gypsy Moth Update

During the 2002 trapping season, 356 gypsy moth traps were placed in 35 North Dakota counties. No gypsy moths were caught.

Black Knot on Prunus and the Lesser Peach Tree Borer

The chokecherry is the target of many pests in North Dakota, including X-disease, *eriophyid* mites, blackknot, and the lesser peach tree borer. In an effort to understand what insect pests were frequenting the black knot swellings caused by the fungus *Apiosporina morbosa*, swellings and healthy wood from Fargo were pruned, bagged and monitored. Numerous lesser peach tree borers emerged from the swellings. Females are known to lay large numbers of eggs around wounds and it is clear that blackknot swellings provide an ideal location. Increasing levels of blackknot in recent years has created favorable conditions for the lesser peach tree borer.

Larvae of the lesser peach tree borer are cambial feeders, and can girdle the stem. Larvae feed only on living tissue, and do not bore into the wood. In addition to chokecherry, other known hosts include peach, plum and cherry.



Black knot on Prunus

Black knot is widespread in North Dakota, found on wild chokecherry, Canada red cherry, and mayday.

Black knot and lesser peach tree borer may become problems for nursery growers and can result in uncertifiable stock. Control recommendations for blackknot can be found in NDSU Extension circular PP-689.



Lesser Peach Tree Borer

Sudden Oak Death

Continued from page 1

This bleeding canker typically occurs on the lower portion of tree trunk. Other oak symptoms include leaves turning from green to pale-green, to brown within a few weeks and crown dieback. When the pathogen infects other non-oak species, such as the *Rhododendron*, symptoms exhibited are leaf spots and twig dieback.

Transportation of infected hosts may spread the disease. Prevention is currently aimed at stopping the movement of infected leaves, wood and soil out of infected areas. Plant material and soil should not be moved from coastal areas. Any wood already moved elsewhere should be burned. Visitors to coastal forests should clean their tires, shoes and animal's feet thoroughly before leaving the area. Ornamental plants, such as rhododendrons, that may be hosts should not be moved from infected counties unless certified to be free of the pathogen. Early detection will be key to successful eradication. Currently there is a limited national survey that is aimed at looking at the movement of nursery stock in the US, several states are currently involved in this survey.

To learn more about this disease visit the website: www.suddenoakdeath.org. The symptoms exhibited on oak are similar to other oak troubles, such as oak wilt, oak decline and attack by red oak borer, to compare these disorders visit the website: www.na.fs.fed.us/SOD . ♣

Japanese Beetle Update

No Japanese beetles were trapped in our trapping program in 2002. The Bismarck area was trapped more intensively in 2002 following two single beetle catches in 2001.

Urban areas considered to be at potential risk for introduction are trapped annually to satisfy our obligations under the Domestic Japanese Beetle Harmonization Plan. This is necessary in order to allow North Dakota nursery growers to ship their product to other states or Canada.

Community Forestry Grants Available From The ND Forest Service

The North Dakota Forest Service (NDFS) is pleased to announce the availability of approximately \$175,000 for community forestry grants. The purpose of the grants is to enhance the community forest through maintenance or through planting. All grants are to be used on publicly owned or controlled land (examples, city parks, schools, boulevards, etc.). The grants are all cost share or challenge grants. The community must match the grant with a percent of the total cost of the project. The percentage depends on the grant applied for. We have three grants available. They are America the Beautiful (ATB), Community Transportation Enhancement (CTE) and the Community Family Forest (CFF) for planting in the fall of 2003 or spring of 2004.

The purpose of the ATB Grant Program is to stimulate the development of effective urban and community forestry projects. Activities that lead to the development of a local forestry program or contribute to the effectiveness of existing programs are encouraged. The grant provides financial assistance to communities for the purpose of stimulating the development of necessary and effective community forestry projects. Types of projects eligible for funding include: Attending tree care and related forestry educational programs, Developing and presenting tree planting and care workshops for homeowners and other interested parties, Developing a self-guided tree tour of your community that identifies tree and shrub species, Developing a demonstration tree maintenance project, Developing a community arboretum, Planting a community windbreak, living snow fence, recreation area protection, boulevard plantings, pocket parks, etc. Tree planting projects have a maximum grant award of \$5,000. The cost share is 50 percent or more of the total cost; the community can use in-kind labor, service or material as part of, or their entire match. We are looking for new or unique ideas to solve a community's need.

The purpose of the CTE Grant Program is to enhance community transportation corridors through the planting of trees and shrubs. Transportation Enhancements are projects that increase, or make greater, the value, beauty, and/or reputation of the local, regional and/or state transportation network. The community must match at least 20 percent of the total project. The Match must be a cash match. Projects must be located along state or county highways within or adjacent to communities, or primary city transportation routes. Types of projects eligible for funding include: plantings along walking/bike trails, boulevards along transportation corridor, entrance plantings, developing pocket parks in vacant lots, and other projects that meet the needs of the community.

The CFF Grant is funded by the Trees For North Dakota Trust Fund. The Trust Fund is supported by voluntary contributions received from North Dakota individual income tax returns and other private donations. The cost share is 50 percent of the total cost of the project in cash or in-kind labor services or materials. A variety of "Community Family Forests" projects are eligible for funding. Among the many eligible community projects are: Memorials, beautification, recreational area protection, park plantings, arboretums, outdoor classrooms, community windbreaks or living snow fences. Projects must be located on public owned or controlled property.

Many communities have utilized the grants to complete projects that they may not have otherwise considered doing. The grants often act as a catalyst to get a project started and with this success many communities continue to plant with or without grant funds. Often a community does not know where to start in developing a project. The NDFS works with these communities in developing a project but cannot reach everyone. That is where a local nursery can get involved. Communities trust the local businessmen and are at times more comfortable working with you. The grant dollars maybe a tool for you to use to get the community thinking about tree planting. Grant applications will be available around the first of February; the deadline to submit an application is April 11, 2003. ♣

Joel Nichols, NDFS

Contact Information:

Jackson Bird or Joel Nichols
Bismarck

Phone # (701)-328-9944

E-mail: W.Bird@ndsu.nodak.edu

E-mail: Joel.Nichols@ndsu.nodak.edu

Gerri Marchus

Carrington

Phone # (701) 652-2951

E-mail: gmarchus@ndsuext.nodak.edu

Sharon Bartels

Lisbon

Phone# (701) 683-4323

E-mail Sharon.Bartels@ndsu.nodak.edu

New Pest Alert - Emerald Ash Borer

A new exotic beetle from Asia was discovered feeding on ash (*Fraxinus spp.*) trees in southeastern Michigan. It was identified in July 2002 as *Agrilus planipennis* Fairmaire (Coleoptera: Buprestidae). Larvae feed in the phloem and outer sapwood, producing galleries that eventually girdle and kill branches and entire trees. Evidence suggests that *A. planipennis* has been established in Michigan for at least five years. Surveys to determine the extent of the infested area are underway.



Fig. 1 - Adult



Fig. 2 - Larva



Fig. 3 - Exit Hole



Fig. 4 - Infested Ash Trees

Adults are larger and a brighter green than any of the native North American species of *Agrilus* (Figure 1). Larvae reach a length of 32 mm, are cream-colored and dorso-ventrally flattened (Figure 2). The Emerald Ash Borer appears to have a one year life cycle in southern Michigan but could require two years to complete a generation in colder regions. Adult emergence begins in mid to late May, peaks in early to mid June, and continues into late June. The adults are active during the day, particularly when conditions are warm and sunny. Most beetles remain in protected locations in bark crevices or on foliage during rain, heavy cloud cover, high winds or temperatures above 32C (90F). Chinese literature indicates that beetles usually fly within 2 meters of the ground.

Adult males live an average of 13 days and females live about 21 to 22 days. Females can mate multiple times and oviposition begins 7 to 9 days after the initial mating. Females lay 65 to 90 eggs during their lifetime. Eggs are deposited individually on the bark surface or in bark crevices on the trunk or branches. In southeastern Michigan, the oviposition period likely extends into mid to late July.

Eggs hatch in 7 to 10 days. After hatching, first instar larvae chew through the bark and into the cambial region. Larvae feed on phloem and the outer sapwood for several weeks. The S-shaped feeding gallery winds back and forth, becoming progressively wider as the larva grows. Galleries are packed with fine frass. Individual galleries usually extend over an area that is 20 to 30 cm in length, though the length of the affected area can range from 10 to 50 cm. In some areas, woodpeckers feed heavily on larvae.

The insect overwinters as a full-grown larva in a shallow chamber excavated in the sapwood. Pupation begins in late April or early May. Newly enclosed adults may remain in the pupal chamber for 1 to 2 weeks before emerging head-first through a D-shaped exit hole that is 3-4 mm in diameter (Figure 3). The emerald ash borer is indigenous to Asia. It's reported in *Fraxinus chinensis* and *F. rhynchophylla* forests. In Michigan, this borer has been observed only on ash trees. It has killed green ash (*F. pennsylvanica*), white ash (*F. americana*) and black ash (*F. nigra*), as well as several horticultural varieties of ash.

Infestations of emerald ash borer can be difficult to detect until canopy dieback begins. Evidence of infestation includes D-shaped exit holes on branches and the trunk. Callus tissue produced by the tree in response to larval feeding may cause vertical splits 5-10 cm in length to occur in the bark above the gallery. Distinct, frass-filled larval tunnels etch the outer sapwood and phloem of the trunk and branches. An elliptical area of discolored sapwood, likely a result of secondary infection by fungal pathogens, sometimes surrounds larval feeding galleries in live trees. Infested branches in the canopy die when they are girdled by the serpentine tunnels excavated by feeding larvae. Many trees appear to lose about 30 to 50 percent of the canopy in one year and the tree is often killed after 2-3 years of infestation (Figure 4). Frequently a profusion of epicormic shoots arises at the margin of live and dead tissue on the trunk. When trees die, dense root sprouting occurs.

Emerald ash borer killed trees of various size and condition in Michigan. Larvae successfully developed on trees as small as 5 cm in diameter, but pole-sized and sawtimber-sized trees were also killed. Stress likely contributes to vulnerability of ash trees and recent summer droughts may have contributed to high emerald ash borer populations in southeastern Michigan. However, emerald ash borer attacked and killed apparently vigorous trees in woodlots and urban trees under regular irrigation and fertilization regimes. ♣

This article is a abbreviated reproduction of the USDA PEST ALERT publication NA-PR-07-02.
Authors: Deborah McCullough and David Roberts.

Saltcedar Becomes the State's Newest Noxious Weed

Dean Cline, Noxious Weed Division

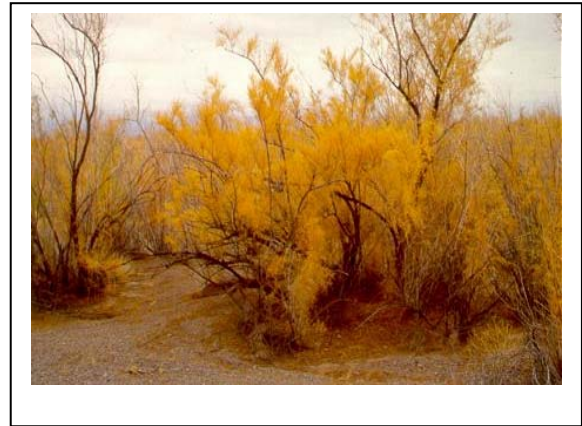
Saltcedar is a small, shrubby, deciduous tree native to Eurasia. This plant has many common names, i.e., tamarisk, showy tamarisk, and autumn glow.

Saltcedar was first introduced as an ornamental and was also used for stream bank stabilization. It is very wide spread, being found from southern New Mexico to the Canadian border. Recently saltcedar has been found in North Dakota along the Yellowstone and Missouri Rivers, Lake Sakakawea, and in the southeast corner of the state. Saltcedar has the ability to create a monoculture. The leaves are high in salt, thus wildlife do not use that plant as part of its needed habitat. As the picture illustrates, the monotypic stands of saltcedar increase bare ground and subsequently, erosion.

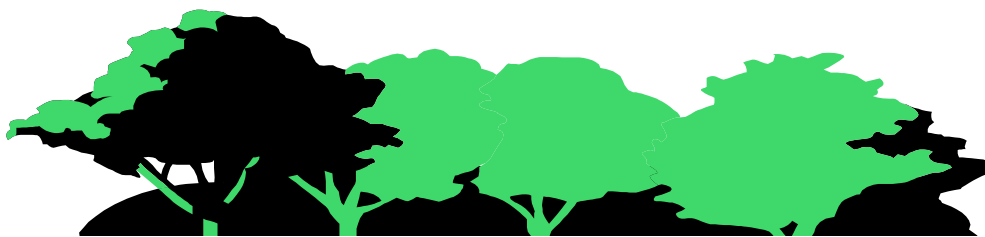
Saltcedar usually grows 5 to 20 feet tall and uses large amounts of water. A mature plant can use as much as 200 gallons of water per day. Recent studies have estimated that one acre of saltcedar will transpire 8 million gallons of water per year in northern climates such as North Dakota.

Saltcedar was officially listed as a state noxious weed on September 1, 2002. There are 12 noxious weeds in North Dakota and it is the duty of every person to

control their spread, including dissemination of seeds or any other propagating plant part (NDCC 63).



Saltcedar on Yellowstone River in North Dakota



North Dakota Nursery News
North Dakota Department of Agriculture
Division of Plant Protection
600 East Blvd., 6th Floor
Bismarck, North Dakota 58505-0020

David R. Nelson, (Bismarck)
State Entomologist (701) 328-4765
E-mail - danelson@state.nd.us
Fax (701) 328-2240

Phillip A. Mason, (Fargo) Editor
Plant Protection Specialist (701) 239-7295
E-mail - pmason@ndsuxext.nodak.edu
Fax (701) 231-8557

