**Great Plains Tree Pest Council Meeting Notes**

**Fargo, ND, July 9-11, 2013**

**Meeting Minutes:**

**Welcome and Opening Comments:** Aaron Bergdahl, GPTPC chairperson

**Participants:**

Rachel Allison, Nebraska Forest Service

John Ball, South Dakota State University/South Dakota Department of Agriculture

Aaron Bergdahl, North Dakota Forest Service

Dale Bergdahl, University of Vermont, Retired

James Blodgett, USDA Forest Service, Rapid City, SD

Tom Claeys, North Dakota Forest Service

Sam DeMarais, City of Fargo Park District

Gregg DeNitto, US Forest Service, Region 1

Charles Elhard, North Dakota Department of Agriculture

Gerald Fauske, North Dakota State University, Entomology

Brian Garbisch, South Dakota Resource Conservation and Forestry

Jeff Haberman, City of Fargo Park District

Greg Josten, South Dakota Resource Conservation and Forestry

Mike Kangas, North Dakota Forest Service

Steve Katovich, USDA Forest Service, St. Paul, MN

Kasia Kinzer, North Dakota State University, Plant Pathology Dept.

Jared LeBoldus, North Dakota State University, Plant Pathology Dept.

Esther McGinnis, North Dakota State University, Plant Sciences Dept.

Alec Miller, North Dakota Forest Service

Randy Nelson, University of Minnesota Extension, Clay County

Nicole Opbroek, Kansas Forest Service, Kansas State University

Laurie Stepanek, Nebraska Forest Service

Jim Walla, Northern Tree Specialties

Scott Liudahl, Fargo City Forestry

**Special Presentations:**

1. Flooding effects on riparian trees in North Dakota, Jared LeBoldus, NDSU Plant Pathology

Relatively little is known about flooding effects on trees. General findings have been that riparian species are tolerant of flooding under normal conditions, tolerance varies among species within each tolerance level, and timing of floods can be important. Following historic floods in 2011, a project was started to 1) determine the short term impact, 2) establish permanent sample plots, and 3) monitor the long term impact of flooding. Two riparian sites in Minot, one in Bismarck, and one south of Bismarck were selected. Data recorded included species, dbh, survival, and % ground cover by species. Examples of results by species included that Russian-olive had the lowest overall survival, highest survival by diameter class in green ash was the 12.5-20 cm group, and highest survival of cottonwood was in the youngest and oldest trees. Examples of results by site included that Minot area regeneration was mostly herbaceous broadleaves, followed by grass, Russian-olive and green ash, woody plant regeneration typically consisted of the same species as the overstory, and Bismarck area regeneration was dominated by herbaceous broadleaves and grass species. Siltation varied substantially by location, ranging from 0 to 35 cm deep. Locations with higher siltation had higher mortality.

Major conclusions included that mortality was concentrated in small dbh classes, siltation had the greatest impact, and effects of flooding varied by species and was variable among sites. The next steps will be to repeat the survey methods used in year one, core trees to look at growth rate, assess crown health, and add a new study location in Williston area.

1. National Elm Trial status, prepared by Bill Jacobi, Colorado State Univ. and coordinator of the National Elm Trial, presented in Bill’s unplanned absence by Jim Walla, Northern Tree Specialties.

The National Elm Trial (NET) plan developed in what was then NCR-193, which deals primarily with insect pests and diseases of woody plants. The concept is to promote the use of elms in urban forests to increase tree diversity. The objective was to evaluate elm cultivars that are reported to be resistant to Dutch elm disease to determine their adaptability to local climates, growth characteristics, and resistance to abiotic stresses, insects and diseases other than DED. The first plantings were made with 14 elm cultivars provided by J. Frank Schmidt and Son Company in 2005 at 18 sites in 17states. Additional cultivars have been added at all sites, and even more cultivars have been added at some sites as room allowed.

A website <http://bspm.agsci.colostate.edu/people-button/facultiy/willian-jacobi/national-elm-trial/> (or just search National Elm Trial) is available to provide information about the NET and elms in general. Information about cultivar growth and insect and disease occurrence by location will be reported on that site. Results from some individual sites is being published or provided on-line by some cooperators. The layout of each planting will be available so others can see how the various cultivars are performing in their areas.

1. History of trees in the Northern Plains through tree ring analysis, Joe Zeleznik, NDSU Natural Resource Sciences.

A review of tree ring studies in the Northern Plains was provided. The people involved, when their studies were done, the emphasis of their studies, notable results, and strengths and weaknesses of the various approaches were described. There is a comprehensive resource for tree ring analysis information at <http://web.utk.edu/~grissino/>. The earliest tree ring analysis in the Great Plains was done in Nebraska by Harry Weekly, looking primarily at length of droughts, and with the first publication in 1940. George Will published “Tree ring studies in North Dakota” in 1946, and was noted for creating a master chronology dating to 1406. Studies in the 1950s to the 1990s dealt with drought and flooding. The majority of the flooding work came from Canadian researchers studying the Red River of the North. Dr. Zeleznik has done several studies, including fire intervals in ponderosa pine in southwestern ND, analyzing and reporting the oldest bur oak ever recorded (450 years old from southeast ND, the second oldest is from SD), assessing tree ages and growth patterns in green ash in Theodore Roosevelt National Park in southwest ND (oldest tree assessed was 125 years old), and an oak savannah study in ND and MN (71% of oaks established in 1890s to the 1910s, little relationship between dbh and age). Other recent studies in the Northern Plains were a study in northeast SD, where several periods of wet cycles were found, and the major dry stretches were in the 1750s and 1930s, and a deglaciation study by Missouri researchers, who found materials 10,000 years old.

1. Exotic bark beetle trapping: new findings, and exotic wood boring bark beetles, Gerald Fauske, NDSU Entomology.

Results of Cooperative Agricultural Pest Surveys (CAPS) for bark beetles and wood boring beetles in ND from 2007-2012 were reported. Multiple insect groups were found among the more than 11,000 specimens trapped. Methods play a large role in what is caught. Lindgren and canopy traps were used. The canopy traps were shredded by wind, so only Lindgren traps are used now. Lures are improving, or at least being added. Lures for target insects were used to trap for wood boring beetles, and those lures also attract similar native species. Site of collection is proving important, with new species being found in every geographic area of ND. The CAPS project has found two species that are not native to ND based on known distribution or host range. Introductions are spot occurrences and may not occur in survey areas. The results show there is much to learn.

The history of bark beetle surveying in ND was presented. There were seven studies from 1890-2006. Prior to CAPS, 15 species of bark beetles were known in ND. In the CAPS study, 37 bark beetle species were identified, 22 of which are new state records. The banded elm bark beetle was found in the first year of the survey. Only 4 European elm bark beetles were found in 2007-2012, so it has been displaced by BEBB. Five ash bark beetles are now known in ND, including one new state record identified in the CAPS surveys. No records were found of the genera *Ips*, *Dryocoetes*, and *Pityophthorus* in ND, but species were found in the CAPS surveys.

**Project Update:**

Diseases of Trees in the Great Plains handbook, Aaron Bergdahl, NDFS. Working plan for publication date is the field season of 2014. The Thursday portion of this meeting will be used to address/settle remaining questions about the process and product. It will include discussion of handbook authorship, organization, and editing. The finances are in pretty good shape. The USDA Forest Service National Agroforestry Center has funds for printing. The Rocky Mountain Research Station will provide editing and layout. The USDA Forest Service would like in-kind contributions from the states, but none in forthcoming. Many articles are done or nearly done.

**Special presentations (cont.):**

1. Emerald ash borer: A cautionary tale, John Ball, South Dakota State University/South Dakota Department of Agriculture.

A cautionary tale is a tale told in folklore to warn its readers of danger. That danger relates specifically to emerald ash borer in relation to information from similar plant-pest systems and to the pattern of introduced pests affecting North American forests.

North American birch species co-evolved with bronze birch borer (BBB), so there is resistance in those birches. Where there is no evolutionary history, there is no resistance. If there is evolutionary history, increased stress reduces resistance to the pest. If no history, there is little relationship between stress and resistance. Appears to be similar with ash species and EAB. In China, EAB generally attacks weakened trees on the forest edge. There are 43 ash species native to Asia, Europe, and North America. Most North American ash have very little or no resistance to EAB (an exception is blue ash, which is hardy in SD).

EAB represents a continuing problem of devastating pests in our forests. A common thread is that those situations include forest genera that occur over multiple continents. A problem that has evolved with species of a genus on one continent is eventually introduced onto other continents where species of the same genus have no resistance. We have lost chestnut, elms, and ash, among others. More genera will be lost if we do not start diversifying our plant genera. Global host distribution indicates that oaks, lindens, and maples are at risk. There are genera that have limited host ranges that have much less potential for similar problems. They include Kentucky coffeetree (*Gymnocladus dioicus*), common hoptree (*Ptelea trifoliata*), and amur maackia (*Maackia amerensis*). Such genera should be explored and utilized.

A new book, “Trees for the Northern Plains,” will soon be out. It covers woody plants of 270 different species of trees that Dr. Ball found from South Dakota to Saskatchewan that have potential, e.g., new species that should be exploited and individual specimens that could be developed. It includes ornamental, windbreak, fruit and nut trees.

**“What’s wrong with my tree” Challenge:**

Specimens of various insect pest and disease problems were displayed with a set a questions about each. Meeting participants were encouraged to go through the material and answer the questions. Set up in an educational and fun format.

**Field trip**

The day was completed with a tour of the Fargo forestry elm management program, led by Fargo City Forester Scott Liudahl. Topics included observation of elm-lined streets, removal of large trees with Dutch elm disease, replacement program, DED along the Red River corridor, and waste wood treatment and utilization.

**July 10**

**State reports:**

Aaron Bergdahl, North Dakota Forest Service

-Emerald ash borer: Activities involved first detector training, EAB awareness week, and using (3Z)-lactone pheromone for trapping.

-Japanese beetle: Found at 6 sites across ND last year. There is an elevated concern partly because lindens are important in ND and are highly susceptible.

-Linden leaf blight: found at one site in ND a few years ago. It is an aesthetic issue because symptoms develop late in the year. It is present in many sites in MN.

-Bur oak blight: Participated in a search in southeast ND in 2012 with Doug McNew, Iowa State U. and Joe Zeleznik. BOB not found in ND, but was found in nearby Becker Co., MN.

-Boring insects: Bronze birch borer is common, esp. on European birches. Two-lined chestnut borer is common, esp. in eastern ND. Dying oaks in Fargo had both two-lined chestnut borer and Armillaria root rot.

-Leaf galls: Get a lot of calls about galls caused by eriophyid mites, including requests for treatments.

-Fireblight: Prevalent in ND. Seems most common where people have pears.

-Herbicide-related symptoms and damage: Results in majority of sick tree calls. Typical recommendation in ag areas is to contact state depts. of ag. and their insurance/attorney.

-Spruce needlecast: Currently common. Stigmina needlecast is prevalent. New NDSU Extension publication coming out (The old and the new: Two needle diseases of spruce in North Dakota, bulletin F-1680).

-Dutch elm disease: There was a recent NDSU Extension publication (Dutch elm disease in North Dakota: A new look, bulletin PP1635).

-The NDSU Extension bulletin “Insect pests and diseases of woody trees and shrubs in North Dakota” is being revised/updated.

-Forest health surveys: Planned for Red River corridor and the Sheyenne National Grasslands (With Forest Resources Team, Grand Rapids, MN).

Jim Walla, Northern Tree Specialties

The herbicide Imprelis was applied to sports turf and lawns nationwide for broadleaf weed control in spring 2011 and then recalled. Following a request for assistance in assessing Imprelis damage to tree at a site in northwest MN, available information was reviewed regarding the types of damage being caused and whether initially symptomatic trees are recovering. The most science-based information available is through Purdue University Extension (Patton et al), with a good summary update for spring 2013 through Wisconsin Extension (Cregg). Selected statements from those sources: 2012: Some trees that did not have symptoms in 2011 developed them in 2012. Trees damaged in 2011 still had Imprelis in branch tips of both dead trees and plant leaf tissues of damaged trees. Imprelis level in soil in May 2012 was 3% of the June 2011 level, still high enough to advise not planting. 2013: Growth anomalies continue to appear. Current soil concentration generally less than 1% of initial concentration. Imprelis-affected trees still contain significant residue, so waste materials from such trees should be burned or landfilled, not mulched. Indiana OSIC confirmed Imprelis injury in 14 conifer and broadleaf tree and shrub species. The active ingredient, aminocyclopyrachlor, is apparently being considered for use in right-of-way and brush control situations.

The assessed site in northwest MN consisted primarily of Colorado and white spruce, green ash, and several shrub species. Typical damage on spruce is death of the top and drooping side branches. On lightly affected spruce and ash, there was an increased number of buds and shortened shoots n 2012. In the future, spruce with that symptom will appear to have been sheared. Spruce and ash had greatly reduced growth in 2012. Ash grew normally in 2013, but spruce shoots had proliferated and grew all directions, which will seriously distort the tree form. Some trees did not have drooping shoots, but ends of 2011 shoots died after hardening off and there was no growth in 2012. In 2013, adventitious shoots grew on some of those branches. In 3-4 years, there will be bare branches back to adventitious shoots. Some dead twig tips that did not droop had gall-like swelling at the base of the dieback, which will likely be indicative of past Imprelis damage. Branches in heavy shade had few or no new shoots. Such may be diagnosed as shading-out, but because the new shoots grew normally in 2010 and did not grow or develop adventitious shoots in 2011 or after, it appears that Imprelis did more serious damage on the more heavily shaded branches.

**Business meeting:**

Site of the 2014 meeting will likely be Colorado. Bob Cain, current secretary, will become chairperson. Mark Harrell was nominated to be secretary and unanimously elected. North Platte, NE was mentioned as possible 2015 meeting site.

**“What’s wrong with my tree” Challenge:** First Place was John Ball, who selected the top prize of a wooden bowtie created by Aaron Bergdahl. In a convoluted way, the joke that developed from that prize is that wooden bowties are the next hot tool for controlling mountain pine beetle!

Jim Walla placed second and received a black walnut bottle stopper with a North Dakota quarter on the top and Charles Elhard placed third and selected an oak bottle stopper.

**State reports (Cont.)**

Jim Blodgett, US Forest Service, Rapid City, South Dakota

-Shared copies of “Field guide to diseases and insects of the Rocky Mountain Region”

-Recent research has involved *Armillaria* in aspen. Found three species. *A. ostoyae* is most common, but causes little damage. *A. gallica* is causing the most damage. *Ganoderma* is also pretty common in aspen.

John Ball, SDSU/SDDA, significant issues and unusual observations included:

-Ponderosa pine has received the most inquiries, due to mountain pine beetle.

 -reports are coming in of dead ponderosa pine in eastern SD; wonders about herbicides.

-Meyer spruce questions have been coming in.

 -commonly mis-identified as Colorado spruce or dragon spruce.

 -apparently mis-labeled when sold.

 -some of the trees are now 15+ years old.

-Many problems are drought-related, e.g., borers, bark beetles.

-Incredibly pleased with first-detector program.

 -they are finding and cautiously reporting suspicious trees

 -all have been banded ash borer so far, but the detectors are seeing what they should be.

-Mountain pine beetle is taking a lot of time to deal with.

 -good practice for when EAB arrives.

 -thinning is key to management; cutting and chunking helps afer infestation.

-Mountain pine beetle Working Group in the Black Hills is involved in MPB suppression effort. Combination of federal, state, and industry – everyone involved.

-Wooden bowtiesT were noted as a promising new MPB suppression tool. Franchises may be available (see “What’s wrong with my tree” Challenge awards, above).

-Drought has been a major issue, following 18 months of incredible drought.

-Flooding

 -surprised that all flooded hackberries died, in contrast to reports that it is flood tolerant.

 -hybrid elms died in flooded areas.

Laurie Stepanek, Nebraska Forest Service:

-A report from Harrell, Stepanek, and Allison was distributed

-Several NE Forest Service publications were distributed.

 -Managing Ips Beetles in Pine

 -Diplodia Blight (Tip Blight) of Pines

 -Emerald Ash Borer: Guidelines for Homeowners

 -Emerald Ash Borer: Treatment Options

 - Emerald Ash Borer: Frequently Asked Questions

-An additional publication will be available soon (Emerald ash borer – Guide for Communities).

-Wildland fires burned a half million acres, the highest amount in years.

-Thousand cankers disease work includes street-side surveys, beetle trapping, and inclusion in the tree pest detector program.

-Seeing a lot of Cytospora canker of spruce and pine wilt of Scots pine.

-*Diplodia* on pines continuing to increase.

-Zimmerman pine moth is stable. Astro (permethrin) is used for control. It is applied in April in NE and SD to the tree trunk.

Rachel Allison, Nebraska Forest Service

-Mountain pine beetle had been seen earlier, probably arriving in 2008 and 2009.

 -the years of concern were 2010 and 2011, mostly in the Wildcat Hills

 -not found in Wildcat Hills in 2012.

-One site north and west of Crawford had multiple insects involved (MPB, Zimmerman pine moth, *Ips*).

 -did about 50 pesticide applications in 2011, 45 in 2012, and 17 in 2013.

 -planning to switch cost-share program from MPB to *Ips*.

Nicole Opbroek, Kansas Forest Service, Kansas State University

-2011, 2012, 2013 drought effects

 -many, many calls.

 -western half of KS still very severe, but a little better in the east.

 -severe top dieback is occurring in many trees.

 -brown trees are being seen in July, and there was early defoliation in 2012.

 -many young and older windbreak, esp. in western areas, have been seriously damaged.

 -many secondary issues, e.g., borers, *Hypoxylon* in oaks.

-Disease issues

 -Cytospora canker of spruce, *Prunus*, etc.

 -pine wilt is going strong in the west.

 -hawthorn rust has been very high in pears.

-General decline has been seen over the past decade in oaks, hackberry, and honeylocust.

 -combination of environmental, site, disease, and insect issues

-Promoting utilization of urban wood due to high removal volumes.

-Developed forest weed watch list.

 -includes Asian bush honeysuckle

 -has project to reduce invasive plants, esp. salt cedar, Asian bush honeysuckle

-Emerald ash borer was confirmed in KS in 2012.

 -on one tree, which was removed.

 -additional samples being evaluated for possible EAB in another county.

 -finding beetles in traps at 2012 positive site in 2013.

-Thousand canker disease work involved beetle trapping in 2012, with no beetles found.

-Granulate ambrosia beetle (*Xylosandrus crassiusculus*) in black walnut

 -symptom is red weeping from trunks, toothpick frass

 -causing massive dieback along the river corridor west of St. Joseph, MO

**Wrap-up notes:**

-Aaron Bergdahl noted that there is again a webpage for GPTPC.

**Field trip**

The day was completed with a tour of the NDSU Horticulture Research Farm west of Fargo, led by Todd West and Greg Morgenson, NDSU Plant Sciences Dept. Topics included observations and discussions of flooding and drought impacts, bronze birch borer resistance, juneberry pests and new juneberry germplasm development, Stigmina needlecast of spruce, poplar disease resistance, and Dothistroma needle blight of pines. There was free time for people to look around at items of their interest, where lots of insects and diseases were observed, photos taken, and juneberries consumed.

**July 11**

Discussion/working group met to work on the update of “Diseases of trees in the Great Plains” book. Minutes were provided separately.

Meeting adjourned.

Respectfully submitted by Jim Walla

(serving as replacement for Bill Jacobi, who would have served as replacement for Bob Cain)