

CAPS Survey Report

Year:	2015
State:	Louisiana
Cooperative Agreement Name:	Pine and Oak Commodity Survey
Cooperative Agreement Number:	15 – 8422 – 1301 - CA
Project Funding Period:	July 1, 2015 through December 31, 2015
Project Report:	CAPS Survey Report
Project Document Date:	February 16, 2015
Cooperators Project Coordinator:	State Survey Coordinator (SSC)
Name:	J. Brett Laird
Agency:	Louisiana Department of Agriculture and Forestry
Address:	5825 Florida Blvd. Suite 3002
City/ Address/ Zip:	Baton Rouge, Louisiana 70806
Telephone:	985-543-4024
E-mail:	brett_1@ldaf.state.la.us

Quarterly Report	<input type="checkbox"/>
Semi-Annual Accomplishment Report	<input type="checkbox"/>
Annual Accomplishment Report	<input checked="" type="checkbox"/>

- A. Write a brief narrative of work accomplished. Compare actual accomplishments to objectives established as indicated in the work plan. When the output can be quantified, a computation of cost per unit is required when useful.

The Louisiana Department of Agriculture and Forestry (LDAF) entered into a Cooperative Agreement with the United States Department of Agriculture (USDA), Animal Plant Health Inspection Service (APHIS), Plant Protection and Quarantine (PPQ) in 2015 to conduct a trap and visual survey for 15 Pine and Oak Pests. LDAF conducted this survey according to survey guidelines set forth by the USDA, APHIS, PPQ in 2015. LDAF's Agriculture and Environmental Science (AES) division is divided into 7 districts across the state and 4 of those districts were utilized to conduct this survey. There were 14 locations in 12 parishes selected by Karen Jenkins (PSS, Louisiana) and Brett Laird (SSC, Louisiana) based on high risk pathways. The number of locations has decreased from 15 to 14 due to the 7.8% reduction in funds in 2013. Two Lindgren funnel traps and one cross vane panel trap was deployed at each location. A visual inspection was also conducted at each trap location each time the traps are serviced. Traps were deployed in the first week of July, 2015. Traps were serviced once a month and were picked up at the end of November, 2015. Trap collections were shipped to Karen Jenkins (PSS, Louisiana) for the initial screening and then transported to Eric White (identifier, PPQ, Louisiana) for final determination of pests.

Targeted Pests:

Survey Method:

Black Spruce Beetle	Cross Vane Panel Trap
Brown Spruce Beetle	Cross Vane Panel Trap
City Longhorn Beetle	Visual
Needle Blight of Pine	Visual
European Spruce Bark Beetle	Lindgren Funnel Trap
Japanese Oak Wilt	Visual
Mediterranean Pine Engraver	Lindgren Funnel Trap
Mountain Oak Longhorn Beetle	Visual
Needle Blight of Pine	Visual
Pine Witches' Broom	Visual
Redbay Ambrosia Beetle	Lindgren Funnel Trap
Sakhalin Pine Sawyer	Visual
Sixtoothed Bark Beetle	Lindgren Funnel Trap
Small White Marmorated LH Beetle	Visual
Tremex Woodwasp	Visual

Outreach efforts were accomplished by LDAF AES inspectors to property owners and concerned stakeholders at each trap location. Louisiana State University (LSU) county agents and United States Forest Service (USFS) personnel were informed of LDAF's activities pertaining to this survey during the prior CAPS committee meeting in order for them to field any calls from concerned stakeholders. LDAF inspectors have placed

“Hungry Pests” brochures and “Don’t Move Firewood” rack cards at the 13 Louisiana Welcome centers across the state.

LDAF has already hosted several meetings with other agencies and concerned stakeholders in regards to our find of Emerald Ash Borer (EAB) ~ *Agilus planipennis* in February, 2015. LDAF conducted its own survey for EAB involving United States Forest Service (USFS), Natural Resource Conservation Service (NRCS) and LDAF Forestry Division, who employed Delta 21 to deploy and monitor traps. LDAF attended a meeting in Little Rock, Arkansas with USDA APHIS PPQ, state Agriculture and industry leaders in regards to EAB.

Funding Amount	Total Number of Traps	Cost Per Unit
Proposed = \$15,977	Proposed = 42	Proposed= n/a
Actual = \$15,977	Actual = 42	Actual = n/a

1. Survey methodology (trapping protocol):

	Common Name	Scientific Name
Pest:	Black Spruce Beetle	<i>Tetropium castaneum</i>
	Brown Spruce Beetle	<i>Tetropium fuscum</i>
	City Longhorn Beetle	<i>Aeolesthes sarta</i>
	Needle Blight of Pine	<i>Mycosphaerella gibsonii</i>
	European Spruce Bark Beetle	<i>Ips typographus</i>
	Japanese Oak Wilt	<i>Raffaelea quercivora</i>
	Mediterranean Pine Engraver	<i>Orthotomicus erosus</i>
	Mountain Oak Longhorn Beetle	<i>Massicus raddei</i>
	Needle Blight of Pine	<i>Mycosphaerella gibsonii</i>
	Pine Witches’ Broom	<i>Xyleborus glabratus</i>
	Redbay Ambrosia Beetle	<i>Monochamus saltuarius</i>
	Sakhalin Pine Sawyer	<i>Ips sexdentatus</i>
	Sixtoothed Bark Beetle	<i>Monochamus sutor</i>
	Small White Marmorated LH Beetle	
	Tremex Woodwasp	<i>Tremex fuscicomis</i>

	Proposed	Actual
Sites (Locations):	14	14
Traps:	42	42

Number of Counties:	12
Counties:	Avoyelles, Bossier, DeSoto, East Carroll, Grant, Jackson, Madison, Morehouse, Natchitoches, Richland, Tangipahoa, West Feliciana

2. Survey dates:

	Proposed	Actual
Survey Dates:	July 1, 2015 through December 31, 2015	July 1, 2015 through December 31, 2015

3. Benefits and results of survey:

	Positive	Negative	Total Number
Traps	0	42	42

4. Database submissions:

All survey data was entered into the NAPIS database at the conclusion of the survey by Brett Laird (SSC, Louisiana). All survey data was entered into the IPHIS database at the conclusion of the survey by Karen Jenkins (PSS, Louisiana).

B. If appropriate, explain why objectives were not met.

All objectives were met or exceeded during this survey.

C. Where appropriate, explain any cost overruns or unobligated funds in excess of \$1,000.

A cost overrun of \$ 367.00 was incurred by LDAF for the operation of this survey.

2015 Pine and Oak Commodity Map:



*****The following is the Pine and Oak Commodity Survey Laboratory Report prepared by Karen Jenkins (USDA APHIS PPQ); the Pest Survey Specialist (PSS) for Louisiana.**

In 2015, Four hundred Brown Paper- two sticky side Delta traps with *Gypsy Moth String Lure* were placed and monitored across the state of **Louisiana** from March through October for Asian Gypsy Moth (Lepidoptera:Erebidae:Lymantriinae: *Lymantria dispar asiatica*). The Asian Gypsy Moth replaced the Exotic Pine Sawfly

(Hymenoptera:Tentredinoidea:Diprionidae:Diprioninae:*Diprion pini*) in the survey. The native Lymantriid (Tussock) Moths that are found in **Louisiana** are: *Dasychira atrivenosa*, *D. basiflava*, *D. manto*, *D. matheri*, *D. meridionalis*, *D. tephra* and *Orgyia deficiente*, *O. detrital*, *O. leucostigma*.

Trap sites this year focused on Saw Mills, Paper Mills, Chip Mills, Christmas Tree Plantations, Pallets Manufacturing- Solid Wood Packing Material establishments in association with Military Bases, airports handling foreign and out of state garbage, the Port of Lake Providence, truck stops along Intrastate Highways and nurseries' that import high risk woody plant material from other states and Canada are targeted. This is the second half of the two year rotation, for the **CAPS: Louisiana Pine and Oak Commodity Survey**.

Louisiana's Forest consists of a 50%-50% mix of hardwoods and softwoods. The Loblolly Pine (*Pinus taeda*), is the primary species of pine found in Louisiana' forest. Louisiana has both the Red Oak Group and the White Oak Group. The Red Oak Group consists of *Quercus falcata*, *Q. imbricaria*, *Q. laurifolia*, *Q. nigra*, *Q. pagoda*, *Q. phellos*, *Q. shumardii*, *Q. velutina*. The White Oak Group consists of *Quercus alba*, *Q. macrocarpa*, *Q. michauxii*, *Q. stellata*, *Q. virginiana*.

The CAPS: Pine and Oak Commodity Survey started in 2009. No target insect species have been found to date.

Forest Insects are some of the most dramatically destructive invasive species that has been introduced into the forest and urbane landscape of the United States. Asian Longhorn Beetle (Introduced from China found in NY: 1996), Emerald Ash Borer (Introduced from Asia, found in MI: 2002)- found in Northwestern (Bossier, Webster, Claiborne) **Louisiana** in 2015, Gypsy Moth (Introduced from Europe/Asia, found in Boston, MA: 1869), Japanese Beetles (Introduced from Japan, found in NJ: 1916), Red Bay Ambrosia Beetles (Introduced from Asia, found in GA: 2002)- found in Northern (Claiborne, Lincoln, Union) **Louisiana** in 2014. Pine Shoot Beetles (Introduced from Europe, found in OH: 1992) are major National Domestic Forest Insect Pest Programs in the United States under surveillance. **CAPS:Pine and Oak Commodity Survey**, insects and diseases are causing significant damage to United States of America Forest Resources. Louisiana's lumber industry, tourist industry, and aesthetic beauty, the continued threat of exotic wood borers does significant damage annually. Forestry is the state's leading plant commodity enterprise with a production value of \$965,972,338 dollars in 2014.

The **2015 CAPS: Pine and Oak Commodity Survey** is an expanded version of the USFS: Exotic Wood Borer and Bark Beetle (EWBBB) Survey. The Forest Health Response Program is in place for lumber exports. The program aids in justifying the NAPPO standards' of domestic monitoring of exotic insects and diseases.

Part I of the survey targets' two primary Insect Beetle (Coleoptera) Orders- Longhorn Beetles and Weevils/Scolyids (Chrysomeloidea and Curculionoidea), one Exotic Wood wasp (Hymenoptera:Siricidae) and Asian Gypsy Moth (Lepidoptera: Erebidae: Lymantriinae: *Lymantria dispar asiatica*).

Part II of the survey consists of three target diseases'. One Phytoplasma- Pine Witches' Broom: Candidatus Phytoplasma pini 16SrXXI-A (Acholeplasmatales:Acholeplasmataceae), and two fungi. Needle Blight of Pine: *Mycosphaerella gibsonii*/ *Pseudocercospora pini-densiflorae*

(*Incertae sedis: Davidiellaceae*) and Laurel Wilt: *Raffaelea lauricola* (*Ophiostomatales: Ophiostomataceae*).

2015 CAPS: Pine and Oak Commodity Survey.

Target Insects:

1. City Longhorn Beetle (Cerambycidae: Cerambycinae: *Aeolesthes sarta*).
2. Mountain Oak Longhorn Beetle (*Massicus raddei*).
3. Sakhalin Pine Sawyer Beetle (Lamiinae: Monochamini: *Monochamus saltuarius*).
4. Small White Marmorated Longhorn Beetle (*Monochamus sutor*).
5. Black Spruce Longhorn Beetle (Cerambycidae: Spondylidinae: Asemini: *Tetropium castaneum*).
6. Brown Spruce Longhorn Beetle (*Tetropium fuscum*).
7. Six-toothed Bark Beetle (Curculionidae: Scolytinae: Scolytini: Ipsinae: *Ips sexdentatus*).
8. European Spruce Bark Beetle: (*Ips typographus*).
9. Mediterranean Pine Engraver: (*Orthotomcus erosus*).
10. European Oak Bark Beetle: (Scolytina: *Scolytus intricatus*).
11. Asian Gypsy Moth: (Lepidoptera: Erebidae: Lymantriinae: *Lymantria dispar asiatica*).
12. Exotic Termex Wood wasp (Hymenoptera: Symphyta: Siricoidea: Siricidae: Tremicinae: *Tremex fuscicornis*).

Target Diseases:

1. Needle Blight of Pine: *Mycosphaerella gibsonii*/ *Pseudocercospora pini-densiflorae*
2. Pine Witches' Broom: *Candidatus Phytoplasma pini* 16SrXXI-A
3. Laurel Wilt: *Raffaelea lauricola*

The Orders with other species (Coleoptera, Hemiptera, Hymenoptera and Lepidoptera) insects are state of Louisiana concerned monitored insects.

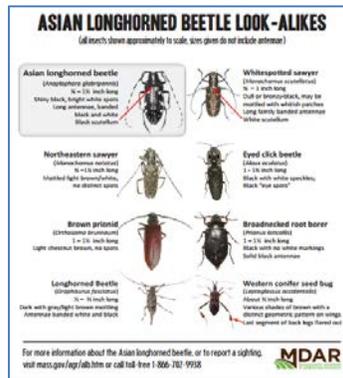
The survey is conducted using Lindgren Funnel (8) Traps and Cross Vane Panel Traps. Traps and lures were serviced according to CAPS Approved Methods in the CAPS Resource and Collaboration Website: 2015 Guidelines. The wet cup (anti-freeze solution) collection method was used for both trap designs and placed 30 meters (98 feet) apart. Six toothed Bark Beetle, European Spruce Bark Beetle and Mediterranean Pine Engraver were trapped using fourteen Lindgren Funnel Traps baited with *Ips sp.* (3) Lure. Red bay Ambrosia Beetles were trapped using fourteen Lindgren Funnel Traps baited with *Manuka Oil* Lure. Black Spruce Long horn Beetle and Brown Spruce Longhorn Beetles were trapped using fourteen Cross Vane Panel Traps baited with Spruce Blend Lure, Geranyl Acetol Lure and Ethanol Lure. None of the above named target pests were found in the **CAPS FY 2015: Pine and Oak Commodity Survey**.

Lindgren Funnel Traps and Cross Vane Panel Traps, have passive flight intercept capabilities, and the resulting trap catches include many native wood boring beetles, and a wide range of non- target families. Some of the insects that have been found are of state concern. Forest insects of federal and state concern are screened out for identification and can be found on the LDAF Website (Ag. & Environmental Sciences: Horticulture & Quarantine Programs: Plant Pest Quarantine Programs)  Plant Pest Fact Sheets. Presently, there are fifty- eight fact sheets listed.

Lindgren Funnel Traps do capture small beetles in the insect Order: Coleoptera. Superfamilies of Coleoptera: Buprestoidea, Curclionoidea, Elateroidea and Scarbaeidea, were found. The larger Coleopterans (Buprestoidea, Chrysomeloidea and Scarbaeidea) and Hemiptereans' (Auchenorrhyncha and Pentatomoidea) are captured by the Cross Vane Panel Trap. NAPIS justified reportable insects found in the **2015 CAPS: Pine and Oak Commodity Survey** has been added to the database.

In 2015, twenty- eight Lindgren (8) Funnel Traps and fourteen Cross Vane Panel Traps were placed and monitored across the state of **Louisiana** from July to November. Four-hundred Brown Paper Delta Traps were used for the Asian/European Gypsy Moth Survey section of the **CAPS: Pine and Oak Commodity Survey**.

Trap sites focus on high risk pathway analysis. Visual site survey was done for the following five Long horn Beetles (*Aleoesthes sarta*, *Massicus raddei*, *Monochamus saltuarius*, *M. sutor*); one Scolyd Beetle (*Scolytus intricatus*) and one Exotic Tremex Wood wasp (*Tremex fuscicornis*). Visual site survey was done monthly for Needle Blight of Pine (Ascomycota: Dothideomycetes: Davidiellaceae: *Mycosphaerella gibsonii*), Pine Witches' Broom (Candidatus Phytoplasma pini 16SrXXI-A) and Laurel Wilt (Ascomycota: Sordariomycetes: Ophiostomatales: Ophiostomataceae: *Raffaelea lauricola*) in conjunction with lure change. No adult beetles or Needle Blight of Pine, Pine Witches' Broom of Pine or Laurel Wilt target pests were found during the visual survey.



Gross Farm Value per Parish Inspected

Avoyelles 35/64=>\$4,179,487	Jackson 6/64=>\$47,195,969	Richland 47/64=>\$867,783
Bossier	Livingston	Tangipahoa

19/64=>\$19,761,039	17/64=>\$20,317,201	24/64=>\$13,003,755
DeSoto 13/64=>\$31,832,716	Madison 32/64=>\$5,333,783	West Feliciana 34/64=>\$4,809,467
East Carroll 39/64=>\$2,764,517	Morehouse 29/64=>\$962,535	Ø
Grant 21/64=>\$18,151,750	Natchitoches 9/64=>\$42,545,569	

Louisiana Summary: Agriculture & Natural Resources: 2014 (LSU- AgCenter Publication).

The twenty- eight Lindgren Funnel and fourteen Cross Vane Panel Traps yielded three hundred and seventy- one justifiable NAPIS insect samples (three- thousand three- hundred and twenty- five insects). The insect samples were identified by Eric White: USDA, APHIS, PPQ- Entomology Identifier in New Orleans, LA.

Twenty vials of native beetles, true bugs and miscellaneous domestic insects were added to the New Orleans, LA; Insect Collection this year. Twelve miscellaneous insects were randomly selected and sent to SEL: Riverdale Lab for identification. **A total of 104 NAPIS justified reportable insects have been added to the database since 2009 to the present, as a result of the CAPS: Pine and Oak Commodity Survey.** ΩΩΩ



Emerald Ash Borer (Buprestoidea: Buprestidae: Agrilinae: Agrilini: *Agrilus planipennis*), Golden Spotted Oak Borer (*Agrilus coxalis*) and Oak Splendor Beetle (*Agrilus biguttatus*), were not found as a hitchhiker in the Lindgren Funnel or Cross Vane Panel Trap in the **2015 CAPS: Pine and Oak Commodity Survey**. EAB is being carefully monitored due to its expanded range in Southern Arkansas (ten counties) and Louisiana (three counties). EAB and its relatives are not known to vector plant pathogens and organisms. Emerald Ash Borer was confirmed in Webster Parish February 11, 2015. The first year of the delimiting survey is completed, under the National EAB Survey. EAB was found in and confirmed in Bossier, Webster and Claiborne Parishes' on June 19, 2015.

The EAB season has started in Southern Arkansas. EAB active larvae were intercepted on January 25, 2016 and confirmed on February 02, 2016, El Dorado, Union County, AK.

Damage caused by invasive secondary pests in **Louisiana Forest**, speeds' up host destruction. NAPIS justified reportable insects were found in the **2015 CAPS: Pine and Oak Commodity Survey**.

Native Louisiana Metallic Wood Boring Species:

Subfamily Agrilinae	Tribe Agrilini	Genus Agrilus	Species bilineatus
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Agrilinae	Agrilini	Agrilus	macer
Agrilinae	Trachyini	Brachys	ovatus
Buprestinae	Buprestini	Buprestis	lineata
Buprestinae	Buprestini	Buprestis	maculipennis
Buprestinae	Buprestini	Buprestis	rufipes
Buprestinae	Chrysobothrini	Chrysobothris	femorata
Chrysochroinae	Chrysochroini	Chalcopora	virginiensis
Chrysochroinae	Dicercini	Dicerca	lurida
Polycestinae	Haplostethini	Mastogenius	crenatus

NAPIS Justified Buprestidae is highlighted in purple.

Asian Longhorn Beetle (Chrysomeloidea: Cerambycidae: Lamiinae: Monochamini: *Anoplophora glabripennis*) and Velvet Longhorn Beetle (Chrysomeloidea: Cerambycidae: Hesperophanini: *Trichoferus campestris*), plus the six target Longhorn Beetle pests were not found in the **2015 CAPS- Pine and Oak Commodity Survey**.

Asian Longhorn Beetle: *Anoplophora glabripennis*, is slowly expanding its range; New York (1996), Illinois (1998), New Jersey (2002), Massachusetts (2008) and Ohio (2011) from Eastern China (SWPM). Numerous Monochamini species of Longhorn Beetles are found in Louisiana. Asian Longhorn Beetle will survive in Louisiana due to abundant host plants and climate. *Monocamus carolinensis*, native Monchamini Beetle that is found throughout the south eastern half of United States.

ALB



Velvet Longhorn Beetle (Cerambycinae: Hesperophanini: *Trichoferus campestris*) arrived in Northeastern Illinois in 2009, from Asia and Russia. The beetle has started to expand its range in the states of: Minnesota, New Jersey, New York and Utah. The exotic beetle attacks Forest and Fruit Trees. Louisiana has a gross farm value investment of \$1 million dollars in peaches (Lincoln, Ouachita and Union Parish) that could be damaged by the beetle. *Tylonotus bimaculatus*, native Hesperophanini is found in Alabama and Florida and is headed to Louisiana. Velvet Longhorn Beetle (Hesperophanini) will survive in Louisiana, due to fact that its native relative is found in Florida.

Velvet Longhorn Beetle



Trichoferus campestris

Bamboo Longhorn Beetle (Lamiinae: Pteropliini: *Niphona fuscata*) was found in the Dollar General Warehouse in Fulton, Missouri on March 26, 2015, bamboo stakes from China. Several parishes' (St. Landry, St. Tammany, Tangipahoa, Washington) in Louisiana deal in ornamental bamboo. Louisiana already has a native species of Lamiinae: Pteropliini: *Ataxia crypta*, found in East Baton Rouge (1980), Bossier, Cameron, Jefferson, Natchitoches, Pointe Coupee and Vernon Parishes'. Bamboo Longhorn Beetle: *Niphona fuscata*, could become established in **Louisiana. CAPS- Pine and Oak Commodity Survey**, is an early detection and surveillance warning program that finds the insect early in its life cycle before it becomes established in the state of Louisiana.

Bamboo Longhorn Beetle

***Niphona fuscata***

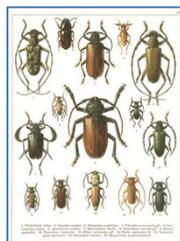
Longhorn Beetles are known vectors of plant pathogens (wood decay fungi) and organisms (pine nematodes).

Native Louisiana Longhorn Beetle Species:

Subfamily	Tribe	Genus	Old Name	Species
Cerambycinae	Bothriospilini	Knulliana		<i>cincta</i>
Cerambycinae	Clytini	Neoclytus		<i>acuminatus</i>
Cerambycinae	Clytini	Neoclytus		<i>mucronatus</i>
Cerambycinae	Clytini	Neoclytus		<i>scutellaris</i>
Cerambycinae	Clytini	Xylotrechus		<i>colonus</i>
Cerambycinae	Clytini	Xylotrechus		<i>sagittatus</i>
Cerambycinae	Curiini	Curius		<i>dentatus</i>
Cerambycinae	Eburiini	Eburia		<i>quadriginata</i>
Cerambycinae	Elaphidiini	Anelaphus		<i>parallelus</i>
Cerambycinae	Elaphidiini	Elaphidion		<i>mucronatum</i>
Cerambycinae	Elaphidiini	Parelaphidion		<i>aspersum</i>
Cerambycinae	Trachyderini	Ancylocera		<i>bicolor</i>
Cerambycinae	Trachyderini	Tragidion		<i>coquus</i>
Disteniinae	Distiniini	Elytrimitatrix	Distenia	<i>undata</i>
Lamiinae	Acanthocinini	Acanthocinus		<i>nodosus</i>
Lamiinae	Acanthocinini	Acanthocinus		<i>obsoletus</i>
Lamiinae	Acanthocinini	Astylidius	Leptostylus	<i>parvus</i>
Lamiinae	Acanthocinini	Astylopsis	Leptostylus	<i>arcuata</i>
Lamiinae	Acanthocinini	Astylopsis	Leptostylus	<i>collaris</i>
Lamiinae	Acanthocinini	Astylopsis	Leptostylus	<i>fascipennis</i>
Lamiinae	Acanthocinini	Graphisurus	Urographis	<i>despectus</i>
Lamiinae	Acanthocinini	Graphisurus	Urographis	<i>fasciatus</i>
Lamiinae	Acanthocinini	Graphisurus	Urographis	<i>triangulifer</i>

Lamiinae	Acanthocinini	Leptostylus		asperatus
Lamiinae	Acanthocinini	Leptostylus		transversus
Lamiinae	Acanthocinini	Lepturges		angulatus
Lamiinae	Acanthocinini	Lepturges		confluens
Lamiinae	Acanthocinini	Liopinus		mimeticus
Lamiinae	Acanthocinini	Styloleptus		biustus
Lamiinae	Acanthoderini	Aegomorphus		modestus
Lamiinae	Acanthoderini	Aegomorphus		quadrigibbus
Lamiinae	Desmiphorini	Eupogonius	Desmiphora	tomentosus
Lamiinae	Monochamini	Monochamus		carolinensis
Lamiinae	Monochamini	Monochamus		titillator
Lamiinae	Pogonocherini	Ecyrus		dasycerus
Lamiinae	Pogonocherini	Lypsimena		fuscata
Lamiinae	Pteropliini	Ataxia		crypta
Lamiinae	Pteropliini	Ataxia		falli
Lamiinae	Pteropliini	Ataxia		hubbardi
Lepturinae	Lepturini	Typocerus		zebra
Lepturinae	Lepturini	Xestoleptura		octonotata
Parandrinae	Parandrini	Neandra		brunnea
Prioninae	Macrotomini	Mallodon		dasystemus
Prioninae	Macrotomini	Stenodontes		chevrolati
Prioninae	Prionini	Neopolyarthron	Prionus	debilis
Prioninae	Prionini	Orthosoma		Brunneum

NAPIS Justified Cerambycidae is highlighted in purple.



Forest Bark Beetles

Native species
Capable of carrying and transmitting
LW pathogen in the greenhouse



Invasive species Primary vector of LW



Exotic Bark Pine Weevils' (Curculionoidea: Curculionidae: Molytinae: Hylobiini: *Hylobius abietis* and Molytinae: Pissodini: *Orthorhinus cylindrirostris* and *Pissodes castaneus*). Oak Ambrosia Beetles' (Curculionoidea: Curculionidae: Platypodina: Platypodini: Platypodina: *Megaplatypus mutatus* and *Platypus quercivorus*), (Curculionoidea: Curculionidae: Pine Shoot Beetle and Lesser Pine Shoot Beetle (Curculionoidea: Curculionidae: Scolytinae Hylesinini: Tomicina: *Tomicus* spp. of) and Six-toothed Bark Beetle (Curculionoidea: Curculionidae: Scolytinae Scolytini: Ipina: *Ips sexdentatus*), European Spruce Bark Beetle (Curculionoidea: Curculionidae: Scolytinae Scolytini: Ipina: *Ips typographus*), Mediterranean Pine Engraver (Curculionoidea: Curculionidae: Scolytinae Scolytini: Ipina: *Orthotomicus erosus*), Six-toothed Spruce Bark Beetle (Curculionoidea: Curculionidae: Scolytinae Scolytini: Ipina: *Pityogenes chalcographus*), Walnut Twig Beetle (Curculionoidea: Curculionidae: Scolytinae Scolytini: Pityophthorina: *Pityophthorus juglandis*) and European Oak Bark Beetle (Curculionoidea: Curculionidae: Scolytinae Scolytini: Scolytina: *Scolytus intricatus*), were not found in the **2015 CAPS: Pine and Oak Commodity Survey**. The Ambrosia Bark Beetles and Weevils are monitored due to their ability to vector plant pathogens and organisms. Native Ambrosia Bark Beetles and Weevils are added to NAPIS annually.

Xyleborinus octiesdentatus



Xyleborinus octiesdentatus (Curculionoidea: Curculionidae: Scolyinae: Scolytini: Xyleborina), an ambrosia beetle native to Asia, was reported for the first time (2010) in North America based on specimens from Alabama and Louisiana. The U.S. range of *Xyleborinus octiesdentatus*, has spread to five locations in South Carolina (2011) and nine locations in Mississippi (2013). Kistatchie National Forest (Winn Parish), Louisiana. Kistatchie National Forest is under rotational surveillance by LDAF: AES- Monroe District Inspectors. *Xyleborinus gracilis* and *X. saxeseni* has been found but not *Xyleborinus octiesdentatus* by LDAF: AES Inspectors in the **2015- CAPS: Pine and Oak Commodity Survey**.

Xyleborus glabratus

Xyleborus glabratus (Curculionoidea: Curculionidae: Scolyinae: Scolytini: Xyleborina), an ambrosia beetle native to Asia was reported for the first time (GA- 2002) in North America. Red Bay Ambrosia Beetle (*Xyleborus glabratus*) was detected by USFS, in Bernice, Union Parish (September 2014), Louisiana. Samples were confirmed by USDA, APHIS, PPQ (Riverdale, MD). Laurel Wilt (*Raffaelea lauricola*), was confirmed on *Sassafras albidum* sample in November 2014, by USFS (GA). Red Bay Ambrosia Beetle/Laurel Wilt Delimiting Survey was conducted in 2014. Three parishes (Claiborne, Lincoln, and Union) are confirmed positive for the beetle. Red Bay Ambrosia Beetle, is a cooperative target pest with USFS- Pineville, Louisiana for **2015 CAPS- Pine and Oak Commodity Survey**. Red bay Ambrosia Beetle: *Xyleborus glabratus*, was found in Warren, Bradley Co, Arkansas (12/10/2015), in *Sassafras*. The U.S. established range for Red Bay Ambrosia Beetle is: six locations in South Carolina (2004), eight locations in Georgia (2002), fourteen locations in Florida (2005), one location in Alabama (2010), three locations in Mississippi (2010) and one location in North Carolina (2011).

Scolytus multistriatus, *Xyleborus affinis*, *X. celsus*, *X. ferrugineus*, *X. impressus*, and *X. pubescens* has been found but not *Scolytus intricatus* or *Xyleborus glabratus* by LDAF: AES Inspectors in the **2009- 2015 CAPS: Pine and Oak Commodity Survey**.

Native Louisiana Ambrosia Bark Beetles and Weevils Species:

Subfamily	Tribe	Genus	Old Name	Species
Apioninae		Fallapion		sp.
Brentinae		<i>Arrhenodes</i>		<i>minutus</i>
Baridinae	Madarini	Madarellus		undulatus
Conoderinae	Lechriopini	Eulechriops		spp. of
Cossoninae	Cossonini	Cossonus		corticola
Cossoninae	Rhyncolini	Rhyncolus		discors
Cossoninae	Rhyncolini	Tomolips		quercicola
Cryptorhynchinae	Gasterocercini	Cophes		fallax
Curculioninae	Anthonomini	Anthonomus		albopilosus
Curculioninae	Curculionini	<i>Curculio</i>		<i>caryae</i>
Curculioninae	Curculionini	<i>Curculio</i>		<i>nucum</i>
Curculioninae	Tychiini	Tychius		stephensi
Dryophthorinae	Dryophthorini	<i>Dryophthorus</i>		<i>americanus</i>
Entiminae	Eudiagogini	Eudiagogus		rosenschoeldi
Entiminae	Eustylini	Achrastenus		spp. of
Entiminae	Sitonini	Sitona		lineatus
Entiminae	Tanymecini	Tanymecus		confusus
Molytinae	Conotrachelini	<i>Conotrachelus</i>		<i>nenuphar</i>
Molytinae	Conotrachelini	Epacelles		inflatus
Molytinae	Hylobiini	<i>Hylobius</i>		<i>pales</i>
Molytinae	Hylobiini	<i>Pachylobius</i>		<i>picivorus</i>
Molytinae	Lymantini	<i>Pissodes</i>		<i>nemorensis</i>
Molytinae	Lymantini	<i>Pissodes</i>		<i>strobi</i>

Molytinae	Molytini	Odontopus		calceatus
Molytinae	Sternechini	Sternechus		armatus
Platypodinae	Platypodini	Euplatypus	Platypus	compositus
Platypodinae	Platypodini	Myoplatypus	Platypus	flavicornis
Platypodinae	Platypodini	Oxoplatypus	Platypus	quadridentatus
Platypodinae	Platypodini	Platypus		transversus
Scolytinae	Hylesinini	Cnesinus		strigicollis
Scolytinae	Hylesinini	Hylastes		porculus
Scolytinae	Hylesinini	Hylastes		salebrosus
Scolytinae	Hylesinini	Hylastes		tenius
Scolytinae	Hylesinini	Hylurgops		rugipennis
Scolytinae	Hylesinini	Hylesinus		aculeatus
Scolytinae	Hylesinini	Dendroctonus		terebrans
Scolytinae	Hylesinini	Dendroctonus		valens
Scolytinae	Scolytini	Gnathotrichus		materiarius
Scolytinae	Scolytini	Monarthrum		fasciatum
Scolytinae	Scolytini	Monarthrum		mali
Scolytinae	Scolytini	Coccotrypes		distinctus
Scolytinae	Scolytini	Ips		avulsus
Scolytinae	Scolytini	Ips		calligraphus
Scolytinae	Scolytini	Ips		grandicollis
Scolytinae	Scolytini	Orthotomicus		caelatus
Scolytinae	Scolytini	Hylocurus		binodatus
Scolytinae	Scolytini	Pseudothysanoes		dislocatus
Scolytinae	Scolytini	Pityophthorus		pulicarius
Scolytinae	Scolytini	Scolytus		multistriatus
Scolytinae	Scolytini	Ambrosiodmus		leconte
Scolytinae	Scolytini	Ambrosiodmus		obliquus
Scolytinae	Scolytini	Ambrosiodmus		rubricollis
Scolytinae	Scolytini	Anisandrus	Xyleborus	sayi
Scolytinae	Scolytini	Cnestus	Xylosandrus	mutilatus
Scolytinae	Scolytini	Dryoxylon		onoharaense
Scolytinae	Scolytini	Euwallacea	Xyleborus	validus
Scolytinae	Scolytini	Xyleborinus	Xyleborus	saxeseni
Scolytinae	Scolytini	Xyleborus		affinis
Scolytinae	Scolytini	Xyleborus		celsus
Scolytinae	Scolytini	Xyleborus		ferrugineus
Scolytinae	Scolytini	Xyleborus		impersus
Scolytinae	Scolytini	Xyleborus		pubescens
Scolytinae	Scolytini	Xyleborus		volvulus
Scolytinae	Scolytini	Xylosandrus		compactus
Scolytinae	Scolytini	Xylosandrus		crassiusculus

NAPIS Justified Curculionoidea is highlighted in purple.

JB



Japanese Beetle: (Scarabaeoidea: Scarabaeidae: Rutelinae: Anomalini: *Popillia japonica*), was not found as a hitchhiker in the **2015 CAPS: Pine and Oak Commodity Survey** . Japanese

Beetle, has been found in previous years by LDAF personnel. *Deltochilum gibbosum* and *Phileurus truncatus*, is the only NAPIS Justified Scarabidae's found in Louisiana.

Spotted Lantern fly



Lycorma delicatula

The Spotted Lantern fly (Hemiptera: Auchenorrhyncha: Fulgoroidea: Fuluridae: Aphaeninae: *Lycorma delicatula*), from China arrive in a container of stone (September 2014) into the Port of Philadelphia, PA. The Spotted Lantern fly has become established on Tree of Heaven (*Ailanthus altissima*), in a residential area surrounding the Stone importer establishment. The Spotted Lantern fly has spread into three counties in Pennsylvania and one county in New York. The Spotted Lantern fly moved into New York on firewood and/or as egg masses on an RV. The host material for this exotic insect is fruit crops (Grapes, apples and peaches) and lumber (Black Walnut).

Calyptoproctus marmoratus, *Cyrpoptus belfragi* and *C. reineckei* (Hemiptera: Auchenorrhyncha: Fulgoroidea: Fuluridae: Poiocerinae: Calyptoproctinae), are native Louisiana species.

Family	Subfamily	Tribe	Genus	Species
Acanaloniidae			Acanalonia	conica
Acanaloniidae			Acanalonia	latifrons
Dictyopharidae	Dictyopharinae	Nersiini	Rhynchomitra	microrhina
Cicadellidae	Cicadellinae	Proconiini	Homalodesca	vitripennis
Cicadellidae	Cicadellinae	Proconiini	Oncometopia	orbona
Cicadellidae	lassinae	lassini	Stragania	robusta
Cicadellidae	Idiocerinae		Idiocerus	sp.
Cicadellidae			Zabrosa	spp.
Flatidae	Flatinae	Nephesini	Metcalfa	pruinosa
Flatidae	Flatinae	Nephesini	Ormenoides	venusta
Membracidae	Membracinae	Membracini	Enchenopa	binotata
Membracidae			Tortistilus	inermis
Tropiduchidae	Tambiniinae	Tangiini	Pelitopis	rotulata

NAPIS justified Hemiptera: Auchenorrhyncha is highlighted in purple.

**BMS
R**



**Kudzu
Bug**



Kudzu Bug (Pentatomoidea: Plataspididae: *Megacocta cribraria*), found in Madison and Tensas Parishes Louisiana (2013) by LSU- Ag Center personnel. The Kudzu Bug has not been found as a hitchhiker in the **Pine and Oak Commodity Survey**. Kudzu Bug was found in Ashley, Co; AR July 2015 by U of AR- Co. Ext. Service. Five other counties (Mississippi, Lee, St. Francis Poinsett and Phillips) eastern side of AR along the Mississippi River have been found this year.



2013	Louisiana Parishes': 2014	2015
East Carroll	Concordia	Avoyelles
Madison	West Feliciana	Bienville
Tensas	East Feliciana	Claiborne
Franklin	East Baton Rouge	Lafayette
	Saint Helena	Morehouse
	Tangipahoa	Ouachita
	Saint Tammany	Pointe Coupee
	k	Webster
	Kudzubug.org	

The Brown Marmorated Stink Bug (Pentatomoidea: Pentatominae: Cappaeini: *Halyomorpha halys*), in the Port of Allentown, Pennsylvania, from China (1998). It has been found in 42 out of 50 states and two Canadian provinces but not Louisiana. University of Arkansas- Fayetteville Campus found BMSB on December 19, 2013 was confirmed on March 21, 2014.

Native Louisiana True Bugs Species:

Family	Subfamily	Tribe	Genus	Species
Cynidae	Cydninae	Cydnini	Pangaeus	bilineatus
Pentatomide	Asopinae		Alceorrhynchus	grandis
Pentatomide	Asopinae		Euthyrhynchus	floridanus
Pentatomide	Asopinae		Podisus	maculiventris
Pentatomide	Asopinae		Strietrus	anchorago
Pentatomide	Essinae	Edessini	Edessa	florida
Pentatomide	Pentatominae	Carpocorini	Euschistus	trisigmus
Pentatomide	Pentatominae	Carpocorini	Mormidea	sp. of
Pentatomide	Pentatominae	Carpocorini	Oebalus	pugnax
Pentatomide	Pentatominae	Halyini	Brochymena	arborea
Pentatomide	Pentatominae	Halyini	Brochymena	quadripustulata
Pentatomide	Pentatominae	Halyini	Brochymena	sulcata
Pentatomide	Pentatominae	Nezarini	Nezara	viridula
Pentatomide	Pentatominae	Pentatomini	Banasa	calva
Pentatomide	Pentatominae	Pentatomini	Banasa	euchlora
Pentatomide	Pentatominae	Piezodorini	Piezodorus	guldinii
Reduviidae	Harpactorinae		Arilus	cristatus

Reduviidae
Scutelleridae
Scutelleridae
Scutelleridae
Thyreocoridae

Harpactorinae
Pachycorinae
Pachycorinae
Pachycorinae

Pselliopus
Diolcus
Homaemus
Tetyra
Cydnoides

cinctus
chrysorrhoeus
aneifrons
bipunctata
ciliatus

NAPIS Justified Hemiptera: Heteroptera is highlighted in purple.

Asian Giant Hornet



Vespa mandannia

Exotic Asian Giant Hornet, (Hymenoptera: Acyleata: Vespoidea: Vespidae: Vespinae: *Vespa mandarinia*), hitchhiked via maritime container into France in 2004. Exotic Asian Giant Hornet, has been intercepted in several ports of entry throughout the United States on passenger flights from Asia and Europe. Exotic Asian Hornet, due to its aggressive behavior it has displaced the native honey bee population outside its native range. Forty- two deaths' in China last year was a direct result of Asian Giant Hornet stings.

Red Paper Wasp- *Polistes annularis* (Hymenoptera: Acyleata: Vespoidea: Vespidae: Polistinae: Polistini), is the common native Louisiana species.

EXOTIC WOOD WASP



C38.2. *T. fuscicornis* female

Tremex fuscicornis

Exotic Sirex Wood wasp (Hymenoptera: Symphyta: Siricoidea: Siricidae: Siricinae: *Sirex noctillo*) and Exotic Tremex Wood wasp (Hymenoptera: Symphyta: Siricoidea: Siricidae: Tremicinae: *Tremex fuscicornis*), were not found in the **2015- CAPS: Pine and Oak Commodity Survey**. Exotic Sirex Wood wasp (*Sirex noctillo*), was found in 2004 in the Great Lakes Area of the U.S. and of limited distribution. Exotic Tremex Wood wasp (*Tremex fuscicornis*), is not known to be present in U.S. **Firewood Issue: Three insects (EAB, ALB and Sirex Wood wasp) have been confirmed at this time to be moved by firewood.**

It attacks healthy trees upon establishment. Wood is impossible to use as lumber due to heavy adult infestation. Major ecological disruptions and loss of biodiversity will occur due to large

amount of host plants being killed by exotic wood wasps. Not known to transmit any human or animal pathogens.

Native Louisiana Wood wasps Species:

Family	Sub-Family	GENUS	SPECIES
Siricidae	Siricinae	SIREX	EDWARDSII
Siricidae	Siricinae	SIREX	NIGRICORNIS
Siricidae	Tremicinae	TREMEX	COLUMBA
Siricidae	Siricinae	UROCERUS	GRESSONI

The native insects of *Louisiana* are found in the same **Genus** as the target insects. Louisiana's Pine Forest Community climate in the target insects' native range is similar. Therefore, the exotic insects would have a high rate of establishment if introduced into Louisiana Pine Forest Community. However, since there is an abundance of native insects in the same sub-family/tribe the exotic insects would have to successfully compete with the indigenous insect complex. The adult exotic insects are similar in appearance to the indigenous insect species. Consequently, infestations would be difficult to detect, especially at low levels. Attempts to contain or eradicate infestations would be logistically difficult. A continuation of the **CAPS: Pine and Oak Commodity Survey** is necessary for early detection. Eric White: USDA, APHIS, PPQ Identifier has become very familiar with the native beetles, true bugs and wasps in the state of *Louisiana*, due to five year history of the program. The state of *Louisiana* has a better than average chance of an identification being made a quarantine significant insect due to the **CAPS: Pine and Oak Commodity Survey**.

In addition to the target (Genus and Species) of insects surveyed; the Order: Coleoptera: Sub-orders: Archostemata, Myxophaga, Adepaga and Polyphaga recorded thirty families were screened out initially before they were taken to Eric White in New Orleans, LA. In addition to the Order: Coleoptera, the Order: Hemiptera: Sub-order: Achenorrhyncha and Heteroptera, recorded eight families that were taken to Eric White: USDA, APHIS, PPQ Identifier, New Orleans, Louisiana.

Outreach

Joint CAPS Conference on EAB and Forest Pests (March 10, 2015), with LDAF: AES Officers, LDAF: Forest Health Officers, USDA, APHIS, PPQ Officers, LSU Ag Center Extension Personnel, USFS Officers and NCRS Officers.

LDAF inspectors have placed "Hungry Pests" and "Don't Move Firewood" brochures in racks at the thirteen Louisiana Welcome Centers across the state of Louisiana to the public in an ongoing effort of public awareness throughout the year.

Submitted By: Karen E. Jenkins
Pest Survey Specialist- AR/LA

For: Eric A. White
February 29, 2016



