

# IDAHO STATE DEPARTMENT OF AGRICULTURE DIVISION OF PLANT INDUSTRIES



## 2011 SUMMARIES OF PLANT PESTS, INVASIVE SPECIES, NOXIOUS WEEDS, PLANT LAB, NURSERY AND FIELD INSPECTION PROGRAMS WITH SURVEY RESULTS

**INTRODUCTION** - ISDA's Division of Plant Industries derives its statutory authority from multiple sections of Idaho Code, Title 22, including the Plant Pest Act, the Noxious Weed Law, the Nursery and Florist Law, and the Invasive Species Act. These laws give the Division of Plant Industries clear directives to conduct pest surveys and manage invasive species and plant pests with the purpose of protecting Idaho's agricultural industries, which include crops, nursery and ranching, and is valued at over \$4 billion. The Division also cooperates with other agencies, such as the Idaho Department of Lands (IDL), the University of Idaho (UI), the United States Forest Service (USFS), the United States Department of Agriculture (USDA), Plant Protection and Quarantine (PPQ), county governments, Cooperative Weed Management Areas (CWMA), and industry groups to protect all of Idaho's landscapes and environments from invasive species. Finally, the Division of Plant Industries helps accomplish the broader mission of the Department of Agriculture to *serve consumers and agriculture by safeguarding the public, plants, animals and the environment through education and regulation*. This report summarizes the comprehensive and cooperative programs conducted during 2011 to enforce Idaho Statutes and fulfill the broader mission of the Department.



**APPLE MAGGOT (AM) (*Rhagoletis pomonella* Walsh)** - In 1990, ISDA established by Administrative Rule an AM-free regulated area (the "Apple Maggot Free Zone" or AMFZ) that contains the major apple production areas of the state. Every year, ISDA conducts an area-wide survey using yellow panel traps and ammonium carbonate bait for AM. In 2011, 423 AM traps were placed at sites within commercial apple orchards and in home landscape trees in six Idaho counties:

### Summary of trapping for apple maggot in Idaho, 2011

County	Total number of AM traps placed	Positive AM traps	Negative AM traps
Boise	20	6	14
Canyon	116	0	116
Gem	93	10	83
Owyhee	30	0	30
Payette	68	0	68
Washington	103	12	91
<b>TOTAL</b>	<b>430</b>	<b>28</b>	<b>402</b>



2011: Blue squares depict positive AM finds. The red area represents the AMFZ.



In 2011, 430 traps were placed in Boise, Canyon, Gem, Owyhee, Payette and Washington counties in commercial apple orchards and home landscape trees. Positive specimens were determined by the ISDA entomologist by dissection of genitalia. Five of the twelve AM adults found in Washington County were located within the AMFZ, and all 10 of the positive finds in Gem County were located within the AMFZ. All AM located within the AMFZ were found on traps that had been placed in hawthorn trees or in undermanaged or neglected apple trees in non-commercial settings.

**ISDA response:** In response to the positive finds of AM within the AMFZ in 2011, ISDA placed an additional 97 "Attract-and-Kill" Spheres around those sites to reduce AM population. ISDA will contact Orchard Review Boards in Washington and Gem counties in 2012 if further action is needed to manage or remove the problem trees.

In 2012, ISDA plans to continue detection surveys in the six-county area. In Washington and Gem counties, ISDA will deploy supplementary detection traps and add additional red AM “Attract and Kill” Spheres around all locations that were positive in 2011 to control AM populations. See page 27 of this report for a map of 2011 AM survey activity in Idaho.

**WESTERN CHERRY FRUIT FLY (WCFF) (*Rhagoletis indifferens* Curran)** - ISDA conducts an annual trapping program to detect first emergence of WCFF and tracks degree-day accumulation calculations as required by the California Department of Food and Agriculture (CDFA) to comply with their WCFF quarantine, aimed at states wishing to export fresh sweet cherries into or through California. **Adult WCFF were first caught in ISDA sentinel traps on June 7, 2011.** To comply with the California Quarantine Permit statutes, and at the request of the Idaho Cherry Commission, commercial cherry growers were notified by mail during the week of June 7, 2011 that the 1,060 degree day threshold had been reached, and that the time to begin treatments for WCFF was approaching. In addition, electronic notifications were sent out with assistance from the University of Idaho Cooperative Extension Service via the NW Pest Alert Network Web Site (<http://www.pnwpestalet.net/index.php>).



**2007-2011: Degree day accumulations pertaining to the start of pesticide treatments for WCFF**

Site	2011 Forecast for first treatment (recommended at 1,060 degree day)	2010	2009	2008	2007
		Historical 1060 degree day accumulations forecast dates			
Boise	June 15	June 12	June 3	June 17	June 1
Caldwell	June 12	June 12	June 6	June 16	June 3
Nampa	June 17	June 13	June 4	June 16	June 3
Ontario	June 17	June 11	May 31	June 13	May 24
Parma	June 17	June 12	June 1	June 14	June 1
Emmett	June 21	N/A	N/A	N/A	N/A



Degree day calculations used to decide when to begin pesticide treatments for WCFF are determined by use of a degree-day computer model from the Department of Entomology at Oregon State University. Control applications are recommended on or prior to accumulations of 1,060 degree-days according to the publication, “Orchard Pest Management”, published by the Good Fruit Grower, Yakima, WA, in 1993.

**EUROPEAN PINE SHOOT MOTH (EPSM) (*Rhyacionia bouliana* Denis & Schiffmuller)**

- The Idaho EPSM survey is conducted annually to comply with California and Montana’s quarantines by tracking the insect’s movement within the state. In 2011, ISDA staff placed 177 EPSM traps in nurseries and pine tree plantations throughout 12 Idaho counties. **No new confirmed infested counties were reported in 2011.** Recent mild winters and urbanization have contributed to increased EPSM trap densities over recent years, especially in nurseries growing Austrian pines. Finding effective control regimes and complying with Montana and California EPSM quarantines continue to challenge this segment of the Idaho nursery industry. A map of Idaho counties positive for EPSM is located on page 26 of this report.



**GYPSY MOTH (GM) (*Lymantria dispar*(Linnaeus))** (Report provided by Neal Kittelson of the Idaho State Department of Lands, Coeur d’Alene, Idaho) - By November 10, 2011, gypsy moth trappers across the state had placed and removed approximately 4,580 gypsy moth detection traps in Idaho.

By agency, the final trap numbers for 2011 were as follows:

- Idaho Department of Lands (IDL): 2,412
- Idaho Department of Agriculture (ISDA): 1,449 (plus 36 EGM delimit traps in Meridian)
- USFS R-1: 67
- USFS R-4: 583 (plus 33 EGM delimit traps in Rexburg)

During the period between 07/01/11 and 12/31/11, one seasonal employee (a Resource Aide II-Trapper) and the IDL Forest Health Specialist finished the placement and removal of gypsy moth traps for the detection program in northern Idaho. **No gypsy moths were trapped anywhere in Idaho during the 2011 gypsy moth trapping season.**

The second year of delimiting trapping was conducted in Meridian, in which 36 GM traps were placed in a one square mile grid surrounding the 2010 capture site. **No additional moths were captured.** For two consecutive years (2010 and 2011), **no gypsy moths were captured during the delimit survey in Rexburg, ID**, making 2011 the final year for delimiting the site. The Rexburg area has subsequently been returned to the regular trapping rotation.

The annual Idaho Gypsy Moth Report for 2011 was prepared and distributed in December 2011. The IDL Forest Health Specialist delivered a presentation on the Idaho Gypsy Moth Trapping Program at the 2011 National Gypsy Moth Review (November 1-3) in Madison, WI.



IPHIS, APHIS's new Web-based database and field data collection program, was used in the Idaho gypsy moth program in 2011. During its first year of use, there were a few "bugs" to work out in integrating the IPHIS system into Idaho's GM program. The majority of these issues were software-related, which APHIS has either resolved or continues to work on. All problems that Idaho encountered were submitted to the IPHIS technical support staff by the IDL's Forest Health Specialist and ISDA's Pest Survey Coordinator. Some issues with integrating IPHIS into the established GM protocol were resolved by IDL's Forest Health Specialist and ISDA's Pest Survey Coordinator.

A detailed report on the 2011 Gypsy Moth Survey in Idaho may be viewed at the Department of Land's Web site at: <http://www.idl.idaho.gov/bureau/forasst.htm#gm>



**JAPANESE BEETLE (JB) (*Popillia japonica* Newman)** – Quarantines for Japanese beetle are maintained and vigorously enforced by the state governments of Idaho, California, Oregon, Utah and Washington. Both the adult and larval forms of this destructive beetle are known to attack over 400 horticultural and ornamental plants, including sod. Although Japanese beetle is known to occur in most states east of the Mississippi River, its presence in the West remains spotty. Establishment of the beetle in Idaho would seriously affect exports to the above-listed states and British Columbia.

Eastern Idaho is at increased risk for a possible JB infestation due to the amount of nursery stock coming in from infested eastern states. Single specimens of JB were found in Idaho in Ada County in 1992 and in Gooding County in 1997.

In 2011, 321 traps were placed in high-risk areas throughout the state, including nurseries, turf farms and urban landscape sites with significant risk factors such as recent landscaping. In addition, both the Boise Airport and Mountain Home Air Force Base were surveyed; these surveys are performed annually because of the possibility of JB being transported in passenger, cargo and military aircraft originating from infested states.



**In 2011, a single specimen of Japanese beetle was found on a trap near Filer, ID in Twin Falls County, close to a commercial nursery.** The area was immediately delimited by the placement of several more JB traps; in addition, the nursery owner conducted a pesticide treatment for JB throughout the property after the find was confirmed by USDA identifiers. No further specimens were found, but ISDA

will continue to delimit the area with survey traps during the 2012 season. A JB trap distribution map for the state is located on page 23 of this report.



**EMERALD ASH BORER SURVEY (EAB) (*Agrilus planipennis*)** – The emerald ash borer was first identified in North America in southeastern Michigan and the Windsor, Ontario areas in 2002. Since then, it has been found in 15 states in the eastern half of the U.S. and in Quebec, Canada. Larvae of this extremely destructive tree pest feed on tissues beneath the bark of ash trees (*Fraxinus* spp.), effectively girdling and consequently killing the trees. Adult EAB are generally active from mid-May to September.

As part of USDA’s 2011 National Emerald Ash Borer Survey, PPQ installed and monitored a total of 126 purple sticky traps at 39 locations across Idaho. Sites included ports of entry, parks and urban ash plantings. In 2011, manuka oil lures used in the traps was supplemented with Z3 hexanol lures. **No emerald ash borers were captured in Idaho in 2011 or in any previous years.**

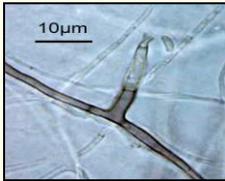
**CORN COMMODITY SURVEY** - Corn is a major agronomic crop in Idaho. The USDA National Agricultural Statistical Service reported 300,000 acres planted in the state in 2009, and the production value for grain corn alone was estimated at \$61.2 million. In addition to grain, Idaho corn is used for silage, processed sweet corn and sweet corn seed (Idaho ranks as the top production state for hybrid sweet corn seed varieties). Idaho sweet corn seed companies export to U.S. and international markets, making phytosanitary issues and data on freedom from exotic insects and pathogens of vital concern to the state’s corn industry.



In 2011, ISDA, in cooperation with the USDA’s Cooperative Agricultural Pest Survey Program (CAPS), conducted surveys for a variety of exotic organisms that could threaten Idaho corn crops. The 2011 Corn Commodity Survey is summarized in the following table:

**Summary of 2011 CAPS Corn Commodity Survey in Idaho**

Organism	Photo	No. of traps/inspections performed in 2011	Results of traps/inspections
<p><b>Old world bollworm (<i>Helicoverpa armigera</i>)</b></p> <p>OWB is an insect pest of marigold, alfalfa, apple and many other plants. It is a native of Africa, Asia, Australia, and Europe.</p> <p>Intercepted repeatedly at ports of entry, surveying has not detected establishment of this pest in the United States.</p>	<p>See page 25 of this report for a map of the 2011 OWB survey activity in Idaho.</p> 	<ul style="list-style-type: none"> <li>• 230 traps were placed by June 15th in the six main corn production counties (Canyon, Cassia, Gooding, Jerome, Twin Falls, and Owyhee).</li> <li>• The traps were checked every 10 days and were removed by September 1, 2011.</li> </ul>	<p><b>All negative</b></p>

Organism	Photo	No. of traps/inspections performed in 2011	Results of traps/inspections
<p><b>European corn borer</b> <b>(<i>Ostrinia nubilalis</i>)</b></p> <p>ECB was first reported in North America in 1917 in MA, where it probably was introduced several years earlier in broom corn from Europe. It has been found on more than 200 host plants, but corn is a preferred host. In addition to corn, crops likely to suffer primary economic damage include barley, beans, millet, oats, Irish potatoes, and sorghum.</p>	<p>See page 24 of this report for a map of 2011 ECB survey activity in Idaho.</p> 	<ul style="list-style-type: none"> <li>• 230 traps were placed by June 15, 2011 in the six main corn production counties (Canyon, Cassia, Gooding, Jerome, Twin Falls, and Owyhee).</li> <li>• The traps were checked every 10 days and were removed by September 1, 2011.</li> </ul>	<p><b>All negative</b></p>
<p><b>Black Maize Beetle</b> <b>(<i>Heteronychus arator</i>)</b></p> <p>Also known as the African black beetle, BMB is a polyphagous, univoltine pest of pasturelands, turf, and agricultural crops in Australia, New Zealand, and Africa. Of economic importance because they attack a wide range of plants like pastures, particularly newly-sown ryegrass and perennial grasses, millets, corn, grape vines, ornamental plants, and newly planted trees.</p>		<ul style="list-style-type: none"> <li>• Visual surveys were conducted from August 9-11, 2011 in the six main corn production counties (Canyon, Cassia, Gooding, Jerome, Twin Falls, and Owyhee).</li> <li>• No. of acres visually inspected: 2,259.</li> </ul>	<p><b>All negative</b></p>
<p><b>Late wilt of corn (<i>Harpophora maydis</i>)</b></p> <p>LWC is a soilborne vascular wilt pathogen that may move with seed. It poses a moderate to severe threat to corn production in Egypt and India where it occurs endemically, with yield losses approaching 40-70% in non-resistant cultivars. Any report of <i>H. maydis</i> in the U.S. could result in a long-term quarantine, crop embargo, and restricted movement of agricultural products and equipment resulting in serious economic impact.</p>		<ul style="list-style-type: none"> <li>• Visual surveys for late wilt were conducted from August 9-11, 2011 in the six main corn production counties (Canyon, Cassia, Gooding, Jerome, Twin Falls, and Owyhee).</li> <li>• No. of acres visually inspected: 2,259.</li> </ul>	<p><b>All negative</b></p>
<p><b>Java Downy Mildew</b> <b>(<i>Peronosclerospora maydis</i>)</b></p> <p>This fungus may develop systemically and cause severe chlorosis in upper leaves, killing young plants, usually those less than 4 weeks old.</p>		<ul style="list-style-type: none"> <li>• Visual surveys for JDM were conducted from August 9-11, 2011 in the six main corn production counties (Canyon, Cassia, Gooding, Jerome, Twin Falls, and Owyhee).</li> <li>• No. of acres visually inspected: 2,259.</li> </ul>	<p><b>All negative</b></p>

Organism	Photo	No. of traps/inspections performed in 2011	Results of traps/inspections
<p><b>Philippine Downy Mildew</b> (<i>Peronosclerospora philippinensis</i>)</p> <p>This is a destructive disease of corn in tropical Asia. It has not yet been found in the U.S. Losses in sweet corn could be severe if it became established.</p>		<ul style="list-style-type: none"> <li>• Visual surveys for PDM were conducted from August 9-11, 2011 in the six main corn production counties (Canyon, Cassia, Gooding, Jerome, Twin Falls, and Owyhee).</li> <li>• No. of acres visually inspected: 2,259.</li> </ul>	<b>All negative</b>
<p><b>Brown Stripe Downy Mildew</b> (<i>Sclerophthora rayssiae</i>)</p> <p>This is a destructive disease of corn in tropical Asia. It has not yet been found in the U.S. Losses in sweet corn could be severe if it became established.</p>		<ul style="list-style-type: none"> <li>• Visual surveys for BSDM were conducted from August 9-11, 2011 in the six main corn production counties (Canyon, Cassia, Gooding, Jerome, Twin Falls, and Owyhee).</li> <li>• No. of acres visually inspected: 2,259.</li> </ul>	<b>All negative</b>

**POTATO CYST NEMATODE (PCN) (*Globodera pallida*)** (Report provided by

Brian Marschman, Idaho State Plant Health Director, USDA APHIS PPQ) - PCN is a pest of both state and national regulatory concern. **In 2011, PPQ confirmed three new PCN-infested fields in Bonneville County, Idaho, bringing the total of infested fields in Idaho to twelve.** All twelve known-infested fields are located within a 3.5-mile radius that spans a portion of northern Bingham County and southern Bonneville County. PPQ regulated 14,174 acres in Bingham and Bonneville counties as a result of the newly detected infested fields, making a total of 15,641 currently regulated acres. Of those total acres, 1,467 are known to be infested; the rest are regulated because of their association with the known-infested fields.



**2011 Survey Statistics for the Potato Cyst Nematode Program (Idaho Falls, Idaho)**

- Number of production fields surveyed: N/A (program does not capture fields).
- Production acres surveyed: 31,002
- Number weed fields surveyed: N/A (program does not capture fields).
- Seed acres surveyed: 121
- Number of counties surveyed: 8
- Fields positive: Three new detections in 2011; a total of 12 fields are now considered infested.

Greenhouse bioassays are underway at the University of Idaho in Moscow, Idaho on three infested fields in the eradication program where no viable nematodes were found as determined by non-vital staining analyses conducted at the PPQ laboratory in Idaho Falls. Cysts collected from these fields were advanced to bioassay, the next step toward determining eradication success. Bioassays assess the nematode's ability to hatch from a cyst, infect a host plant, and reproduce. The entire bioassay process takes at least 18 months to complete; some preliminary bioassay results were received in 2011 and additional results are expected in 2012.



Potato plant on right infected with PCN. Healthy plant is on the left. Image: C. Hogger, www.forestryimages.org

In 2011, PPQ treated seven of the infested fields with methyl bromide; six were treated in the spring and one in the fall. The three fields that triggered bioassays in 2010 did not receive treatment with methyl bromide in 2011 because a non-host grain crop was grown there instead of potatoes. TriCon 80/20 (80%

methyl bromide/20% chloropicrin) was used in 2011 due to new Environmental Protection Agency (EPA) restrictions that prohibit use of the 98/2 product (98% methyl bromide/2% chloropicrin) that was used previously. To increase retention of fumigant in the soil and overall fumigant efficacy, a different tarp material (a totally impermeable film) was used in the fields.

During the late summer and fall of 2011, PPQ treated ten of the infested fields with the nematicide Telone II®. The two most recently detected infested fields did not receive eradication treatments in 2011 due to the late dates of confirmation and lack of funds.

In March, July and December of 2011, PPQ held eradication planning meetings at the program facility with the infested field owners and operators. Stakeholder updates were distributed in May and December. Outreach was also conducted at the Idaho Growers and Shippers Association in Sun Valley, the Potato School in Pocatello, and at three Idaho Potato Commission meetings in Eagle.

**Sampling information**

To date, the USDA’s PCN Program has collected more than 335,400 soil samples in Idaho to ensure Idaho’s freedom from PCN outside of the 12 known infested fields. More than 60,000 samples have been collected from the eradication fields in order to monitor eradication progress and to provide cysts to several institutions for research on PCN. To date, the PCN laboratory in Idaho Falls has screened more than 271,100 soil samples collected in Idaho and approximately 42,500 samples from other potato-producing states. PCN has never been detected in the U.S. outside of Idaho. Since the program’s inception, the viability of 640 cyst samples collected from infested fields has been analyzed before and after fumigation treatments. The average viability of PCN in the treated fields has declined by more than 99% since eradication treatments began.

Since 2009, approximately 50,100 soil samples have been collected in support of the ISDA’s post-regulation survey of fields deregulated by the USDA. In May 2011, ISDA initiated sampling procedures for fields growing potatoes that are destined for export to Mexico. Fields must be sampled at least one week prior to planting and have negative PCN lab results for produce to be eligible for export.

**KARNAL BUNT (KB) (*Tilletia indica*)** - The smut fungus pathogen *Tilletia indica* causes a fungal disease in wheat referred to as karnal bunt. Karnal bunt is known to occur in AZ, NM, CA and TX, where quarantines are in place while efforts are made to eradicate the disease. ISDA has conducted surveys in Idaho for KB since 1996. In 2011, ISDA collected 41 wheat samples from 16 counties in Idaho and tested them for the pathogen. **Results from this year's survey were negative, as have been all survey results prior to this date.**



**2011 Karnal Bunt Survey in Idaho (all samples were negative)**

County	Number of Samples	County	Number of Samples
Ada	1	Idaho	5
Benewah	3	Jerome	2
Bonneville	4	Kootenai	1
Butte	1	Latah	8
Clark	1	Minidoka	4
Franklin	1	Oneida	2
Gem	1	Payette	1
Gooding	1	Twin Falls	5

**DISEASES AND PESTS FOUND DURING 2011 FIELD INSPECTIONS FOR EXPORT CERTIFICATION; NUMBER OF FIELDS AND ACREAGE SUBMITTED FOR INSPECTION UNDER THE IDAHO RULES FOR PHYTOSANITARY; AND POST-ENTRY CERTIFICATION AND RULES GOVERNING THE PLANTING OF BEANS (*Phaseolus*) SPECIES IN IDAHO FOR THE 2011 FIELD SEASON** - In 2011, 41 seed companies submitted a total of 2,549 fields representing 30 crops to ISDA

for inspection. The total number of acres submitted for inspection was 25,193; 51,404 acres were actually inspected since multiple inspections were required for some crop diseases. These totals represent a decrease in the number of companies requesting inspections in 2010 (46). In 2011, the total number of acres requested for inspection was down 22% from the 32,495 submitted in 2010.

### Summary of requests for inspections from Idaho seed companies, 2003-2011

Year	No. of participating firms	No. of crops	No. of fields	Acres submitted	Acres inspected
2003	41	27	3,016	43,433	71,357
2004	44	27	3,355	46,282	79,671
2005	43	28	2,987	42,961	74,905
2006	47	30	2,880	37,859	70,692
2007	48	32	2,439	30,938	58,218
2008	50	32	2,674	34,439	66,114
2009	43	33	3,532	36,541	72,184
2010	46	35	2,520	32,495	62,608
2011	41	30	2,549	25,193	51,404

**Alfalfa seed:** A total of 592.15 acres in 38 fields were submitted for inspection during the 2011 growing season for such organisms as *Cercospora medicaginis*, *Clavibacter michiganensis* subsp. *insidiosus*, *Cuscuta* spp., and *Ditylenchus dipsaci*. Inspectors did not observe *Euphorbia esula*, *Verticillium albo-atrum* V. *dahliae*, or *Xanthomonas campestris* pv. *alfalfae* in any alfalfa field during the 2011 field inspection season.

**Allium (excluding garlic):** In 2011, a total of 1,009.87 acres in 162 fields of chive and onion crops were inspected. All fields inspected were found apparently free from *Peronospora destructor*, *Urocystis cepulae*, *Puccinia asparagi*, *Colletotrichum circinans*, *Ditylenchus dipsaci*, *Sclerotinia* spp. and *Sclerotium cepivorum*. In onions, the pathogen *Botrytis aclada* was found in 50 acres.

**Beans, Dry:** A total of 821.47 acres in 72 fields of dry beans were submitted for inspection in 2011. To meet requirements of IDAPA 02.06.06, Rules Governing the Planting of Bean Seed (*Phaseolus*) Species in Idaho, all fields submitted were inspected for halo blight, common blight, fuscus blight, brown spot, bacterial wilt, and anthracnose, which were not found in 2011. In addition, there were no reported observations of bean common mosaic potyvirus, *Colletotrichum truncatum*, peanut stunt cucumovirus, or tobacco streak ilavirus in fields inspected for these diseases.

**Beans, Garden:** A total of 11,375.86 acres in 674 fields were submitted for inspection in 2011. To meet requirements of IDAPA 02.06.06, Rules Governing the Planting of Bean Seed (*Phaseolus*) Species in Idaho, all fields submitted were also inspected for halo blight, common blight, fuscus blight, brown spot, bacterial wilt, and anthracnose which were not found in 2011. There were no observations of bean yellow mosaic virus, *Colletotrichum truncatum*, pea seed-borne mosaic virus, peanut stunt virus, *Phoma exigua* var. *diversispora*, or tobacco streak virus in fields inspected for these diseases at the growers' requests. Bean common mosaic virus was found in 8 acres of garden beans.

**Beets:** One beet field consisting of 2.5 acres was inspected; no disease symptoms of significance were observed.

**Brassicas:** A total of 147 acres in 7 fields of arugula, mustard, rutabaga and turnip were inspected by request in 2011. Nine acres were found positive for *Alternaria brassicola* and *Sclerotinia* spp. All fields were negative for *Leptosphaeria maculans*, *Xanthomonas campestris* pv. *campestris* and *Pseudomonas syringae* pv. *maculicola*.

**Carrot:** A total of 1,262.47 acres in 386 fields of carrots were inspected in 2011. *Alternaria radicina* was found in 44.8 acres, and *Sclerotinia* spp. was present in 219.45 acres. Incidents of *Alternaria radicina*,

*Pectobacterium carotovorum* pv. *carotovorum* or *Xanthomonas campestris* pv. *carotae* were not observed in 2011.

**Corn:** In 2011, 9,556.16 acres in 719 fields were individually inspected. High plains virus (HPV) was observed in 96.69 acres, 22.5 acres tested positive for maize dwarf mosaic virus (MDMV) and *Fusarium subglutinans* was detected in 0.5 acres. *Ustilago zeae* was reported in 1,914.47 acres. Sugarcane mosaic potyvirus was not observed in any Idaho corn fields in 2011. These statistics include 81 acres in 5 fields submitted for inspection and testing for export to Australia; of these fields, 50 acres in 2 fields met the Australian guidelines. Three fields containing 30 acres failed to meet the Australian standards as they tested positive for various combinations of high plains virus, maize dwarf mosaic virus and wheat streak mosaic virus.

**Garlic:** A total of 4.93 acres in 15 fields were inspected and found free of any disease symptoms of quarantine significance, including *Sclerotium cepivorum* (onion white rot).

**Grain Seeds:** A total of 176.94 acres in 68 fields of barley, grain sorghum, oats, rye, triticale and wheat were inspected. No findings of significance were observed.

**Lettuce:** A total of 252.25 acres in 35 fields of lettuce were inspected in 2011. Lettuce mosaic potyvirus (LMV) was not observed.

**Mint:** A total of 87 acres in 15 fields were inspected in 2011 and found apparently free from *Verticillium dahliae*, mint root borer (*Fumibotys fumalis*), and mint stem borer (*Pseudobaris nigrina*).

**Oregano:** One five-acre field of oregano was submitted, but no inspection took place due to a crop failure.

**Peas:** In 2011, 3,966.8 acres of peas in 297 fields were submitted for individual inspection and 500 acres of peas in 11 fields were submitted for area inspection. In total, 8,111.77 acres were actually inspected due to multiple inspection requirements for certain diseases. Results for *Cladosporium cladosporioides pisicola* were positive in 0.5 acres, *Mycosphaerella pinodes* was found in 50 acres and *Phoma medicaginis* was found in 8 acres. *Ascochyta pisi* was not present in any fields inspected. In addition, no symptoms of pea seed-borne mosaic virus were observed during 2011 inspections.

**Potato:** No potato fields were submitted for inspection in 2011.

**Radish:** In 2011, 223 acres of radishes in 11 fields were submitted for inspection, all of which were apparently free of *Colletotrichum higginsianum*, *Xanthomonas campestris* pv. *campestris*, and *X. campestris* pv. *raphani*.

**Thyme:** One-five acre field of thyme was submitted, but no inspection took place due to a crop failure.

**Tomato:** Two fields with a combined total of 0.11 acres were inspected during 2011. No symptoms of diseases of quarantine significance were observed.

**Vine Crops:** A total of 13.01 acres in 34 fields of cantaloupe, cucumber, pumpkin, squash and watermelon were submitted and inspected in 2011. The pathogens *Pseudomonas syringae* pv. *lachrymans*, *Colletotrichum orbiculare*, *Acidovorax avenae* subsp. *citrulli*, *Xanthomonas cucurbitae* and cucumber mosaic virus were not found.

**NUMBER OF FIELDS AND ACREAGE SUBMITTED FOR INSPECTION UNDER THE IDAHO RULES FOR PHYTOSANITARY AND POST-ENTRY CERTIFICATION AND RULES GOVERNING THE PLANTING OF BEANS (*Phaseolus*) SPECIES IN IDAHO FOR THE 2010 FIELD SEASON – (Garry West, Program Manager, ISDA Division of Plant Industries, Twin Falls, (208) 736-2195, and Emilee Douglas, Program Manager, ISDA Division of Plant Industries, Nampa, (208) 332-8650, provided the following field disease report.)**

**Summary of field inspections conducted by ISDA staff in 2011**

Species	No. of fields	Acres submitted	Acres inspected
Alfalfa	38	592.15	592.15
Arugula	1	2.00	2.00
Barley	50	54.72	54.72
Beans, Dry	72	821.47	1,804.74
Beans, Garden	674	11,375.86	27,566.52
Beets	1	2.5	2.5
Cantaloupe	16	1.54	1.54
Carrot	386	1,258.97	1,262.47
Chive	1	8.00	8.00
Corn	719	4,804.08	9,556.16
Cucumber	12	6.00	6.00
Garlic	15	5.18	4.93
Grain Sorghum	14	119.70	119.70
Lettuce	35	252.25	245.25
Mint	15	87.00	174.00
Mustard	1	9.00	18.00
Oats	1	0.30	.30
Onion	161	1,001.87	1,315.08
Oregano	1	5.0	.00
Peas	297	3,966.80	8,111.77
Peas, Area	11	500.00	0.00
Pumpkin	2	3.0	3.0
Radish	11	223.00	422.00
Rutabaga	1	15.00	15.00
Rye	1	.02	.02
Squash	3	1.87	1.87
Thyme	1	5.00	.00
Tomato	2	.11	.11
Triticale	1	0.20	0.20
Turnip	4	67.00	112.00
Watermelon	1	0.6	0.6
Wheat	1	2.00	2.00
<b>Totals</b>	<b>2,549</b>	<b>25,192.19</b>	<b>51,403.63</b>

**PLANT PATHOLOGY SUMMARY REPORT** - In 2011, the Plant Pathology Laboratory at ISDA received 764 samples for testing. Approximately 1,752 tests were conducted on the samples, with an average turnaround time of 22 days. The number of tests was down considerably from 2010.

The lab tested 181 lots of bean seed for bacteria and fungi. Six lots were infected with at least one of the Plant Pathology Lab's target organisms (see table below). One bean field sample tested positive for a regulated bacterium (see table below). Common mosaic virus, *Sclerotinia* sp. and *Fusarium oxysporum*

were found in beans growing in Idaho in 2011. This year, in addition to regular seed tests, the lab began testing hay destined for China for the fungal pathogen *Verticillium albo-atrum*. In 2011, test results for this pathogen were negative.

The ISDA Plant Pathology Lab received 14 lots of potatoes to test in accordance with the state's Uncertified Seed Potato Rules (IDAPA 02.06.39). None of the lots were positive for bacterial ring rot (*Clavibacter michiganensis pv. sepidonicus*), which would be cause for denial to plant.

The lab tested over 300 field samples for a variety of diseases. Of particular interest was the large number of crops infected with *Sclerotinia* sp., which causes a disease commonly known as white mold. This disease has occurred in Idaho in the past, but in 2011, it was particularly prevalent in several crops (see table below).

The lab participated in three surveys this year. The first was the national Karnal Bunt Survey (see summary report for karnal bunt, page 7). The lab also assisted USDA border agents by testing potatoes entering Idaho for fungi of the genus *Phytophthora*, for which all samples were negative. The ISDA Plant Pathology Lab also conducted a survey in cooperation with the USDA's CAPS program for pests of corn. The pathology lab looked specifically for corn wilt, a disease caused by the fungal pathogen *Harpophora maydis*. All samples were negative for *Harpophora maydis* (see summary report, page 5).

#### ISDA Plant Pathology Lab – Summary of 2011 activities

Crop	Number of Samples	Number of Tests	Positives (Organism)	Turnover Time (days/sample)
<b>Bean</b>				
Seed	181	893	6 ( <i>Pseudomonas syringae pv. Syringae</i> )	30.8
Field	110	160	3 ( <i>Sclerotinia</i> sp.)	20.4
			1 ( <i>Xanthomonas axonopodis spyrarphaseoli</i> )	15.7
			1 ( <i>Fusarium oxysporum</i> )	
<b>Miscellaneous Seed</b>				
Tomato	2	3		
Alfalfa	16	26		
Alfalfa Hay	43	43	1 ( <i>Verticillium dahliae</i> )	
Barley	9	12	1 ( <i>Urocystis</i> sp.)	
Pea	1	2		
Radish	10	18		
Wheat	2	5		
Wheat Straw	50	100	29 ( <i>Urocystis</i> sp.)	
			8 ( <i>Tilletia controversa</i> )	
<b>Potato</b>				
Seed	14	49		
<b>Miscellaneous Field Crops</b>				34.3
Alfalfa	5	8	1 ( <i>Peronospora</i> sp.)	
			1 ( <i>Phoma medicaginis</i> )	
Allium	1	1	1 (onion yellow dwarf virus)	
Aspen	1	2		

Crop	Number of Samples	Number of Tests	Positives (Organism)	Turnover Time (days/sample)
Banana	1	1		
Beet	1	1		
Carrot	52	56	16 ( <i>Sclerotinia</i> spp.) 7 ( <i>Alternaria radicina</i> )	
Corn	123	208	28 ( <i>Ustilago maydis</i> ) 16 (High Plains virus) 1 ( <i>Curvularia</i> sp.) 2 (Maize Dwarf Mosaic Virus) 2 ( <i>Fusarium subglutinans</i> ) 1 ( <i>Rhizoctonia solani</i> )	
Cucumber	1	2		
Grain Sorghum	3	4		
Herb	1	1		
Mint	6	6		
Mustard	1	1	1 ( <i>Sclerotinia</i> sp.) 1 ( <i>Alternaria brassicicola</i> )	
Onion	40	43	7 ( <i>Botrytis allii</i> ) 4 ( <i>Botrytis aclada</i> )	
Pea	20	35	1 ( <i>Phoma medicaginis</i> ) 1 ( <i>Mycosphaerella pinodes</i> )	
Pumpkin	1	2		
Radish	6	7	1 ( <i>Albugo candida</i> )	
Soil	1	1	1 ( <i>Phytophthora</i> sp.)	
Turnip	1	1		
Watermelon	1	1		
<b>Karnal Bunt Survey</b>	41	41		
<b><i>Phytophthora ramorum</i>– trace-forward</b>				
Magnolia	1	1		
Rhododendron	2	2		
<b>Potato (USDA Survey)</b>	16	16		8.0
<b>Totals</b>	<b>764</b>	<b>1,752</b>		<b>Average = 21.84 days</b>

**SUDDEN OAK DEATH (SOD) (*Phytophthora ramorum*)** - *Phytophthora ramorum* is a fungal pathogen that causes the disease Sudden Oak Death (SOD) / Ramorum Blight. This federally regulated pest has been found in nurseries in CA, WA and OR. ISDA routinely monitors our nursery industry for symptoms of SOD and assist the USDA in screening plants that come into Idaho from infected nurseries in CA, WA and OR. In the spring of 2011, plants from a nursery in CA that had recently shipped plants into ID were found infected with *Phytophthora ramorum*. ISDA inspectors conducted a trace-forward search of all facilities that received plants from the infected nursery. Three plants were located and tested for the *Phytophthora ramorum*; **all plants were negative for the fungus.**

**Greenhouses sampled in 2011 for *Phytophthora ramorum*; all results were negative.**

Greenhouse location	Number of samples
Ada County	1
Ada County	2

**SEED LAB SUMMARY** – The Idaho State Seed laboratory (ISSL) received 2,268 samples and completed 2,810 service tests in 2011. Top crops for service testing were grains, beans, alfalfa, wheatgrass, onion, pine, bluegrass, peas, fescues, and *Penstemon*. A total of 152 regulatory enforcements were checked for licensing and adherence to truth in labeling requirements; 74 of these assessments resulted in actions by ISDA inspectors. During 2011, ISDA issued 624 seed dealer licenses, bringing in \$98,700 in revenue. ISSL has been working with transportation departments from Idaho and Washington to develop reporting and testing standards for rolled erosion control products. These products are used to enhance the germination of seed applied to construction-disturbed sites and help to prevent erosion on sloped surfaces. By partnering with these programs, ISSL assists in protecting state and federal dollars invested in roadside restoration.

**CULL ONION INSPECTIONS AND ACTIONS** - The 2011 Cull Onion season began with ISDA inspectors visually monitoring the counties of Owyhee, Canyon, Washington and Gem by vehicle to identify areas of concern before violations occurred. Some of the areas that lead to regulatory visits were results of complaint calls that came into the ISDA. **Cull onion disposal enforcement is handled on a complaint basis only.**

No complaints regarding cull onions were reported in Owyhee and Gem Counties in 2011. Three areas of concern in Canyon County were monitored including two dairies in Caldwell, which were feeding cull onions to livestock, and an onion packing firm in Parma, which was disposing of cull onions in one of their fields by spreading and disking. In these cases, regulatory visits to appropriate personnel resulted in the companies' implementation of proper disposal methods for cull onions, so no formal actions were taken. Three potentially problematic situations in Payette County were also monitored; two involved private landowners and one a frozen food firm. One landowner was feeding sheep cull onions, but stayed in compliance by only feeding as much onions as the sheep could consume in one week. The other landowner was disposing of cull onions on his property in an unacceptable manner. After two regulatory visits, he began to properly dispose of the cull onions and came under compliance. The frozen food firm was observed keeping piles of cull onions in an area on the surrounding property. Six regulatory visits were made before the company came under compliance. All three sites remained in compliance for the duration of the Cull Onion Rule's enforcement period, so no formal actions were taken.

**OTHER REGULATORY INSPECTIONS AND ACTIONS** - ISDA, under the authority of Title 22, Chapters, 4, 5, 23, & 24 of the Idaho Code, and IDAPA defined pest quarantines, conducted 5,938 inspections and consequently took action against various pest threats and other violations. In 2011, there were 1,843 licensed nurseries in the state; of those, 696 were inspected for compliance under statutes of the Idaho Nursery and Florists Law and were examined for the presence of plant pests and noxious weeds. In addition, specific checks were made for compliance with other state laws, quarantines and pests of particular concern. The results of these inspections and regulatory actions are listed below:

**Regulatory inspections and actions conducted by ISDA in 2011**

Quarantine/Pests	No. of inspections	No. of incidents	No. of corrective actions	Stop Sales
Certified Seed Potatoes	108	2	0	2
Onion White Rot	205	13	0	13
European Corn Borer	311	0	0	0
Japanese Beetle	485	0	0	0
Mint Quarantine	217	0	0	0
Crop Management Zone	57	0	0	0

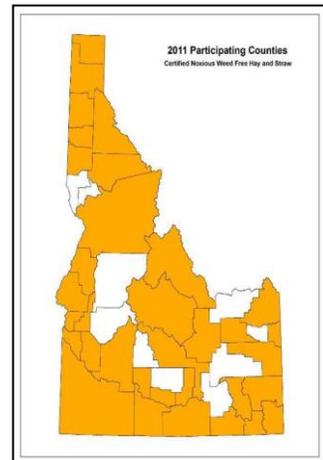
Quarantine/Pests	No. of inspections	No. of incidents	No. of corrective actions	Stop Sales
Grape Quarantine	207	14	0	14
Peach Tree Quarantine	222	0	0	0
Sudden Oak Death	457	0	0	0
Pine Shoot Beetle	346	0	0	0
Gypsy Moth	484	0	0	0
Red Imported Fire Ants	360	0	0	0
Noxious Weeds	506	11	3	1
Idaho Seed Law	228	7	1	6
Nematodes	4	0	0	0
Aphids	596	5	2	0
Late Blight	367	0	0	0
Hops	165	0	0	0
Retail Potatoes	53	0	0	0
General Pests	81	21	2	0
Snails	479	0	0	0
Day Lily Rust	0	0	0	0
<b>Total Inspections</b>	<b>5,938</b>	<b>73</b>	<b>8</b>	<b>36</b>

**ISDA NOXIOUS WEEDS /INVASIVE SPECIES PROGRAMS** - 2011 proved

another productive year in the battle against noxious weeds and invasive species in Idaho. The Noxious Weeds Program at ISDA continued to work with Cooperative Weed Management Areas (CWMA), county governments, Tribes, landowners, and Federal partners to provide leadership, training and support for noxious weed management in the state. A total of 33 CWMA were formed, and they excelled at bringing people together across agency and administrative boundaries to manage the spread of noxious weeds. Their efforts helped protect wild land habitat, ecosystem diversity, recreational opportunities and agriculture in Idaho. ISDA distributed a total of \$1.55 million in 2011 from cost share grants to CWMA for on-the-ground



Dr. Richard Old demonstrates his program to NWFFS inspectors.



integrated weed management. Program applicants provided over \$5.37 million in matching contributions, which allowed for treatment of a total of over 332,131 acres of noxious weeds and for nearly 1.1 million acres to be surveyed and mapped. Education and prevention are essential to the success of Idaho's program; over 1.6 million contacts were made state-wide for noxious weed education and awareness.

Cover page from the Idaho Hay and Forage Association directory and the NWFFS advertisement found inside.

**Noxious Weed-Free Forage and Straw (NWFFS)** - The U.S. Forest Service and Bureau of Land Management (BLM) requires that all forage and straw on their lands be certified as noxious weed-free (NWF) to help manage and control the spread of noxious weeds. ISDA administers this program to facilitate compliance for equine users and re-vegetation managers. In 2011, ISDA trained 77 NWFFS inspectors throughout the state. During NWFFS training, Dr. Richard Old, who

created the XID Plant Identification computer program, conducted six half-day trainings on use of the program. Private landowners and agency partners also attended this event.

Over 14,965 acres of forage and straw were inspected and certified as NWF by trained CWMA's and county cooperators for a farm value of \$6.3 million. NWF products, such as hay bales, forage cubes, twice-compressed forage bales, straw bales, and pellets, have become increasingly more accessible and available to horse and mule recreationalists. Education continues to be a main focus of the NWFFS program.

ISDA's NWFFS program has a comprehensive Web site at:  
<http://www.agri.idaho.gov/Categories/PlantsInsects/NoxiousWeeds/nwffs.php>

ISDA continued to promote the NWF message in the Idaho Hay and Forage Association hay directory, as well as in the Idaho Fish and Game big game regulations. In 2011, a NWFFS educational booth was displayed at the Idaho Hay and Forage Association conference and at the Idaho Horse Expo. In addition, ISDA participated in the South Fork of the Boise River CWMA hay exchange. The exchanges are conducted during big game hunting seasons in the state to educate hunters using pack stock to only use NWF forage. The NWFFS program plays an important role in protecting Idaho's wild places from noxious weed introduction.



An example of ISDA participating in a CWMA sponsored activity. Certified noxious weed free hay was exchanged (no fee) for non-certified hay before big game hunters entered USFS lands.

**Eurasian Watermilfoil (EWM) (*Myriophyllum spicatum*)** - Eurasian watermilfoil is one of the most problematic invasive aquatic plants in North America as it tends to out-compete native vegetation and degrade aquatic habitats by reducing biodiversity. EWM forms dense canopies of growth in water which can make boating and fishing impossible. Dense plant growth degrades water quality and encourages mosquito growth. ISDA initiated an aggressive treatment program in 2006 to prevent further spread of EWM and to eradicate the plant in treated areas.



2011 marks the sixth year of the EWM program in Idaho. Treatment and prevention efforts continue throughout the state, where over 12,500 acres of EWM has been treated since 2006 using herbicides, diver-assisted suction dredging, and benthic barriers. Nearly \$700,000 was allocated in 2011 for treatment, education, survey, and prevention projects. As a result, 626 acres were treated under the program in 2011, which targeted high priority and high use areas. Surveys have demonstrated a significant reduction in EWM populations in treated bodies of water. Surveys have also found that native plant abundance and diversity have increased following EWM treatment, improving habitat for invertebrates, fish and waterfowl. Treatments have also resulted in improved boater access and improved recreational opportunities.

Projects in 2011 included EWM treatment on Lake Pend Oreille, Priest Lake, Hayden Lake, Lake Coeur d'Alene, Payette Lake and Payette Pond. Prevention projects, also supported by milfoil funds, included four watercraft inspection stations in Bonner and Kootenai Counties and two watercraft inspection

stations near Henry's Lake in Fremont County. State-wide, ISDA conducted over 13,000 watercraft inspections utilizing EWM funds in 2011. Of these, over 100 water craft were found contaminated with EWM and were subsequently hot-washed to remove the plant.

Eastern Idaho is one of the largest areas of the nation to remain free of EWM. ISDA, in cooperation with county governments and regional partners, conducts aggressive surveys to facilitate early detection of EWM in the region. A small EWM population was discovered in Buhl in 2010; it was aggressively treated by the land owner. The 2010 find in Buhl was located 80 miles further upstream in the Snake River than the nearest EWM population. Three ISDA surveys in 2011 in the Buhl area did not find any sign of EWM in the pond or in water downstream, but eradication measures were still taken to prevent EWM's spread into the Snake River.

**Hydrilla (*Hydrilla verticillata*)** - The hydrilla eradication project continued in 2011 on the Bruneau River with financial support from BLM and USDA APHIS. Treatment methods included removal by divers, hand removal, and in one spot, treatment with an herbicide. Four seasonal employees were dedicated to the project this season. They surveyed, mapped with GPS, and removed hydrilla from July through October. As a result of their efforts, a 74% reduction in hydrilla occurrence was documented when 2011 data was compared to 2010, denoting significant progress in the eradication of the hydrilla population in Idaho. Similar treatments are planned in 2012.



**Flowering rush (*Butomus umbellatus*)** - Flowering rush is an expanding problem in the Pend Oreille system in northern Idaho. The plant is known to out-compete native vegetation, degrade aquatic habitats, interfere with water flow and disrupt boater access and recreation. Currently no good treatment options are known for this species. Consequently, populations are exploding throughout the region.

The flowering rush project is funded by a grant from the U.S. Army Corps of Engineers (USACE), and ISDA in conjunction with Mississippi State University, Bonner and Boundary Counties, and Albani Falls. USACE managed flowering rush treatment plots in the Clark Fork Delta area of Lake Pend Oreille using herbicides, mechanical methods and fabric barriers. Field treatment plots showed limited efficacy; however, tank studies indicated efficacy of several herbicides.

For more information on control of flowering rush in Idaho, see the final report online at:

[http://www.gri.msstate.edu/publications/docs/2011/11/9327Idaho\\_ARRA\\_Preliminary\\_Report\\_2011\\_GRI5048.pdf](http://www.gri.msstate.edu/publications/docs/2011/11/9327Idaho_ARRA_Preliminary_Report_2011_GRI5048.pdf)

#### **ISDA AND USDA COOPERATIVE RANGELAND GRASSHOPPER AND MORMON CRICKET SUPPRESSION PROGRAM**



– Destruction by grasshoppers and Mormon crickets continues to be one of the most serious pest problems for Idaho rangelands and adjacent croplands. Based on annual surveys conducted by the United States Department of Agriculture (USDA), Animal Plant Health Inspection Service (APHIS), Idaho has experienced very serious pest outbreaks in previous years. The management and the timely control of grasshopper and Mormon cricket populations are high priorities for ISDA and USDA APHIS. Congress addressed this issue with special funding to the impacted states of Idaho, Utah and Nevada.

#### **Background**

Sixty-four percent of Idaho lands is administered by the Federal Government, with 43% of the state's land (21.8 million acres) classified for use as rangeland. The Bureau of Land Management manages 11.8 million acres in Idaho, much of it prime grasshopper/Mormon cricket habitat. A significant area of habitat can be found on federal lands that border private rangeland and irrigated cropland in the state. Cyclical

outbreaks of a combination of Mormon crickets and grasshoppers (primarily involving about six different species) have caused recurring economic problems in the state, particularly in southern Idaho. In recent years, however, significant outbreaks have also occurred in north central and northern Idaho.

### Summary of grasshopper survey results

In 2011, grasshopper outbreaks in Idaho caused light to moderate damage to crops, which varied with location and time of year. Cool wet weather from April to early June kept soil temperatures lower than usual, so emergence of first instar grasshoppers was delayed throughout the state and pest populations did not reach the densities reported in the previous four years. Pest populations were primarily a mixture of migratory grasshoppers (*Melanoplus sanguinipes*), two-striped grasshoppers (*Melanoplus bivittatus*), valley grasshoppers (*Oedaleonotus enigma*), and clear-winged grasshoppers (*Camnula pellucid*). The majority of requests for assistance from private landowners were due to the presence of grasshoppers instead of crickets or katydids. Unfortunately, no significant environmental events occurred in September or October 2011 to reduce the number of grasshoppers mating and ovipositing during the fall, so it is reasonable to expect grasshopper outbreaks to continue in several areas of the state during the 2012 season.

### Summary of Mormon cricket survey results

The number of outbreaks of Mormon crickets (*Anabrus simplex*) continued to decrease in 2011 compared to those in 2010, with the primary outbreaks still occurring in Owyhee and Washington counties. The three-lined shieldback katydid *Stieroxys trilineata* was found for the third consecutive season in the Rathdrum Prairie of Kootenai County; it was also found in Elmore County at four different sites. Both the Rathdrum Prairie and Elmore County sites are located west of the general distribution area of this species as reported in 2003 in Idaho. An infestation of the coulee cricket *Peranabrus scabricollis* was observed in the Joseph Plains area near Canfield in Idaho County, although populations of the insect were not as prevalent in 2011 as they were in 2009 and 2010.

### Summary of ISDA Program

In 2011, ISDA continued to suppress outbreaks of grasshopper, Mormon crickets and related katydids statewide. In 2011, 96 private landowners in 16 counties received 92,150 lbs of bait valued at \$72,300, a nearly 70% decrease from the 234,000 lbs that were distributed in 2010. *Cost-share spray projects were not conducted in 2011 under this program.* In addition, ISDA used bait on 92 acres on impacted state lands in Elmore County. For additional information on the program and treatments, visit the ISDA Web site at [www.agri.idaho.gov](http://www.agri.idaho.gov) and search under the “Plants and Insects” tab for the Grasshopper/Mormon Cricket Program.

### 2011 ground treatments with carbaryl on county roads rights-of-way and state lands

County	Total lbs carbaryl bait applied	Acres Treated
Elmore	900 lbs.	92

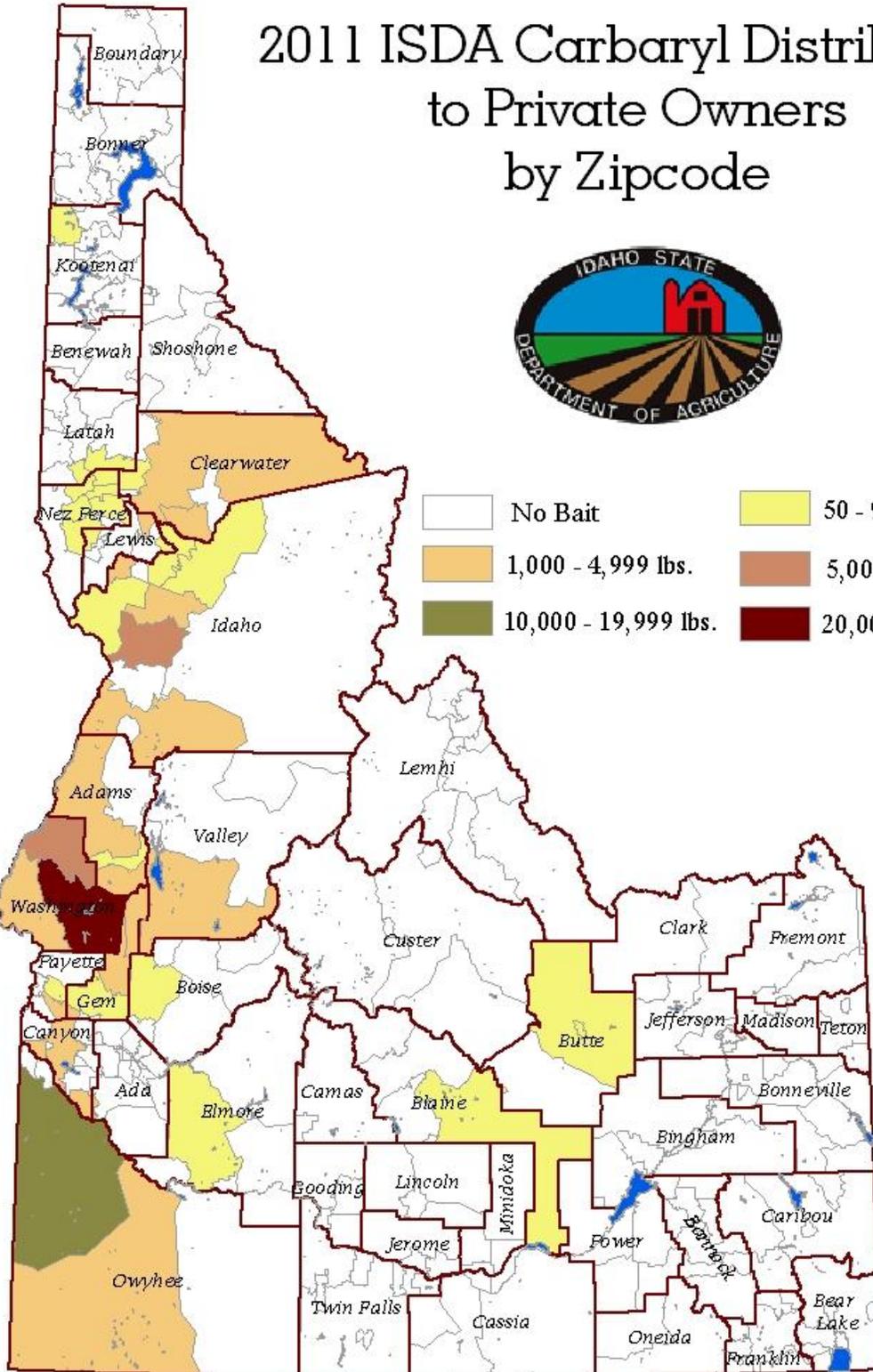
### Multi-year summary of ground treatments with carbaryl on county roads rights-of-way and state lands

Year	Total lbs carbaryl bait applied	Acres treated
2005	12,175	1,218
2006	6,612	661
2007	3,906	340
2008	3,750	194
2009	21,200	1,446
2010	4,300	428
2011	900	92

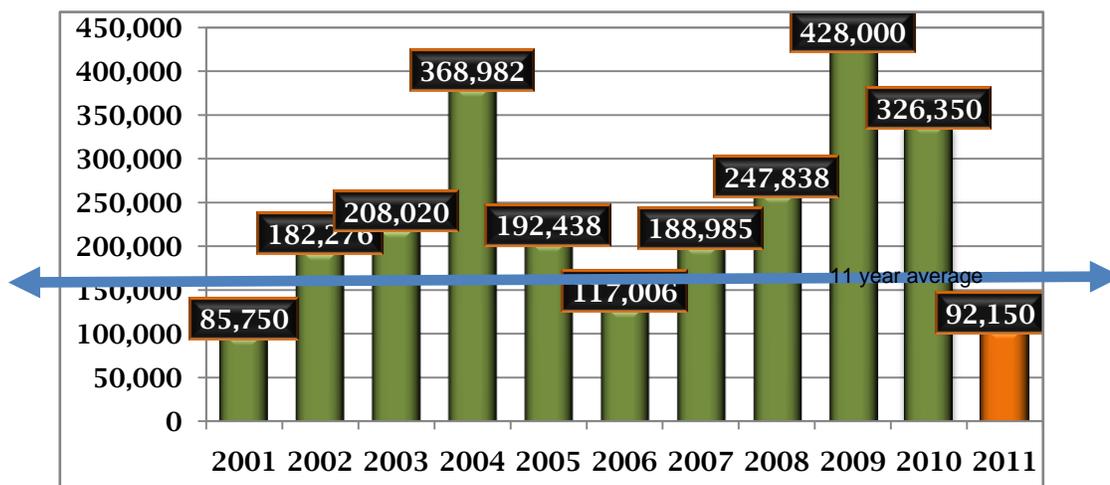
**2011 bait distributions to private landowners for suppression of Mormon crickets and grasshoppers**

<b>Rank</b>	<b>County</b>	<b>Carbaryl bait distributed (lbs)</b>	<b>Number of Distributions</b>
1	Washington	31,000	17
2	Owyhee	19,400	10
3	Idaho	13,100	21
4	Clearwater	6,500	12
5	Adams	5,850	5
6	Valley	3,400	3
7	Payette	2,600	2
8	Nez Perce	2,300	11
9	Gem	2,050	4
10	Boise	1,950	3
11	Canyon	1,650	1
12	Lewis	1,400	1
13	Blaine	450	2
14	Elmore	200	1
	Kootenai	200	1
15	Butte	100	2
<b>Totals</b>	<b>16 Counties</b>	<b>92,150</b>	<b>96</b>

# 2011 ISDA Carbaryl Distribution to Private Owners by Zipcode



**Distribution of carbaryl bait by ISDA's Division of Plant Industries to private land owners for suppression of grasshoppers and Mormon crickets**



**MAJOR COOPERATORS FOR THE Grasshopper/Mormon Cricket Program** - During the 2011 season, the following cooperators provided significant help in bait distributions and overall program delivery:

- University of Idaho, Extension Service, Elmore County
- University of Idaho, Extension Service, Franklin County
- University of Idaho, Extension Service, Nez Perce County
- Randy Rowe Trucking Company, Twin Falls, ID.
- Boise County Road Department, Gardena, ID.
- Midvale Phone Company, Midvale, ID.
- Primeland Cooperative – Grangeville, ID.
- Wilbur Ellis Company – Caldwell, ID
- Wilbur Ellis Company – Spokane, WA

**Program Contacts:**

*ISDA, Plant Industries Division*

- Dick Lawson, Program Specialist, dick.lawson@agri.idaho.gov, 208.332.8620
- Garry West, Program Manager, garry.west@agri.idaho.gov, 208.736.2195
- Mike Cooper, Bureau Chief, mike.cooper@agri.idaho.gov, 208.332.8620
- Breann Hipwell, Technical Records Specialist, breann.hipwell@agri.idaho.gov; 208.332.8650

**2011 PUBLIC OUTREACH AND EDUCATIONAL PRESENTATIONS ON INVASIVE SPECIES, PEST SURVEY AND DETECTION, AND GRASSHOPPER MANAGEMENT PROGRAMS**

**Presentations given in 2011 by ISDA staff**

<b>Date</b>	<b>ISDA Staff</b>	<b>Event</b>	<b>Target Audience</b>
January 18, 2011	Woolf	Water Users state meeting, Water Quality Committee, Boise	Water managers
February 3, 2011	Safford	Jordan Valley CWMA winter seminar	Farmers and ranchers
February 10, 2011	Woolf	Water Users Ditch Rider workshop, Nampa	Water managers
February 17, 2011	Safford	Lower Weiser CWMA educational seminar	Farmers and ranchers
February 19, 2011	Ferriter	Columbia River Basin Team - presentation	Columbia River Basin State, Federal, and Tribal cooperators
March 3, 2011	Woolf	Idaho Noxious Weed Conference, Boise	Weed managers
March 16, 2011	Woolf	Water Users Ditch Rider workshop, Jerome	Water managers
March 17, 2011	Safford	SW Idaho Weed Control Association spring meeting	Public agency weed managers
March 17, 2011	Woolf	Water Users Ditch Rider workshop, Nampa	Water managers
April 12, 2011	Woolf	Watershed Watch, Boise	General public
April 29, 2011	Ferriter	Sheriff Marine Law Enforcement Academy	Sheriff's office, marine deputies
May 5, 2011	Ferriter	Idaho Tourism Conference - presentation	Outfitters, guides, tourism-related industry
May 10, 2011	Ferriter	Marine Deputy Law Enforcement Academy	Law enforcement personnel
May 11, 2011	Ferriter	Watercraft inspection training, Malad	Watercraft inspectors for Bear Lake, Juniper, Malad, Franklin
May 19, 2011	Woolf	Bonner County Water Festival	Fifth-grade students
May 25, 2011	Woolf	Aquatic Plant Treatment in Moving Water Systems, Spokane.	Aquatic weed managers
June 10, 2011	Ferriter	Watercraft inspectors for Bear Lake, Juniper, Malad, Franklin	Columbia River Basin State, Federal, and Tribal cooperators
June 25, 2011	Woolf	Native Plant Society, Sandpoint. Aquatic Plant Identification.	General public
July 10, 2011	Ferriter	Idaho Invasive Species program summary	Pacific Northwest Economic Region
August 16, 2011	Woolf	Priest Lake Invasive Species workshop and survey	General public
September 22, 2011	Woolf	Cocoalla Lake Association Meeting	General public
September 28, 2011	Ferriter	Idaho Invasive Species Council update	Idaho Recreation and Tourism Conference
October 11, 2011	Ferriter	Western Regional Panel annual meeting	17 Western states
October 20, 2011	Ferriter	Columbia River Basin Team, presentation	Columbia River Basin State, Federal, and Tribal cooperators
October 26-27, 2011	Ellis	Western State and Canada Regulatory Conference	Government regulatory officials
November 2, 2011	Ferriter	Northern Nevada, Wildhorse Working Group	Partners in Northern Nevada and Southwestern Idaho
November 4, 2011	Ferriter	Idaho Marine Deputy Academy training	Law enforcement personnel
November 8, 2011	Ellis	Idaho Association of Plant Protection	University and government representatives

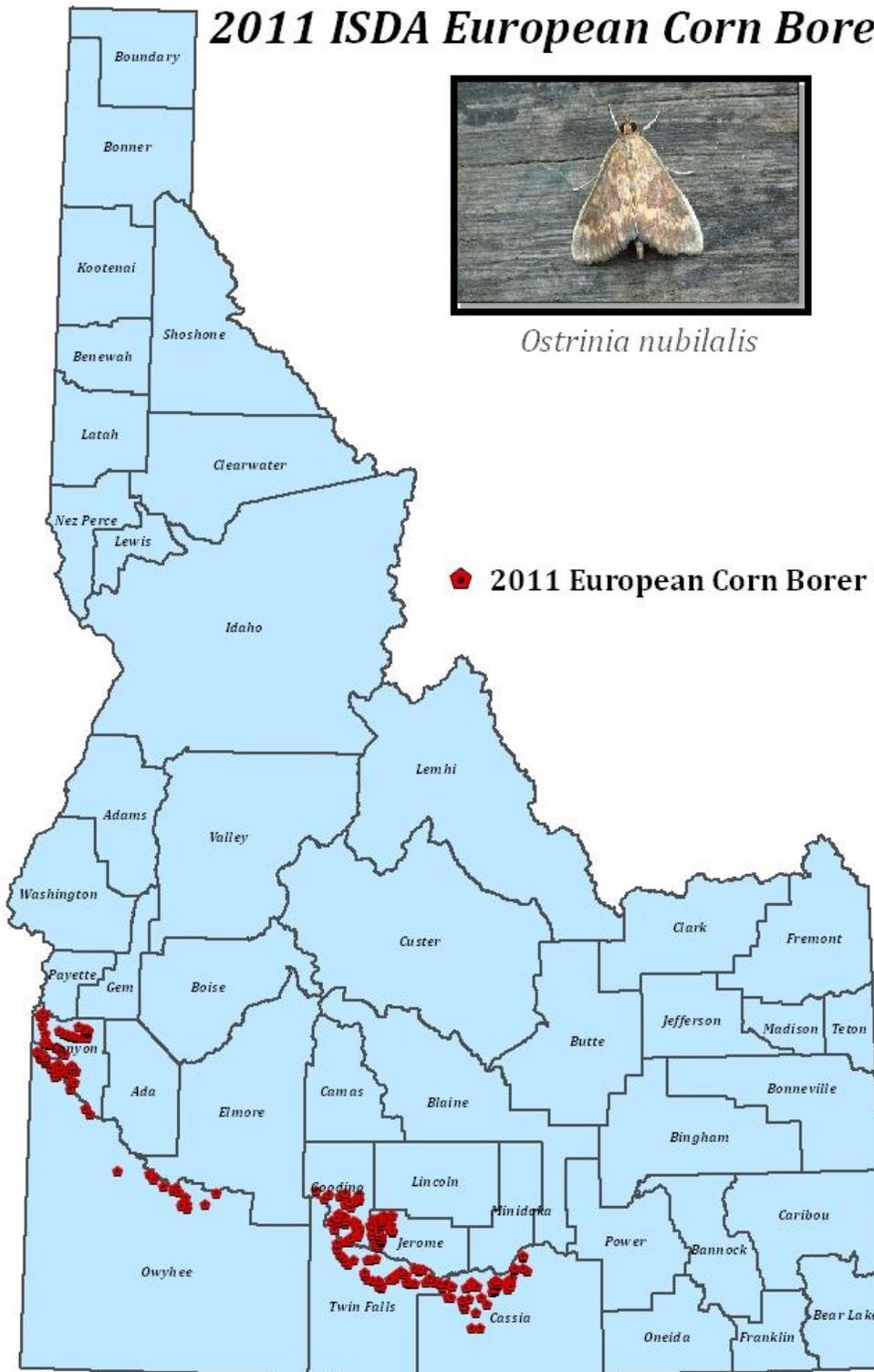
November 9, 2011	Woolf	Aquatic Plant EDRR workshop, Dover.	Weed managers
November 10, 2011	Ferriter	Idaho Falls Town Hall meeting, 2011 Season Wrap-up	Northern Idaho cooperators, local agencies and the general public
November 14, 2011	Ferriter	Brown Bag Lunch, Invasive species in Idaho	Members of the Idaho Invasive Species Council and cooperators from Minnesota
November 14, 2011	Ellis (with USDA)	Mexican delegation for technical visit on oriental fruit moth	Mexican Trade Program officials
November 15, 2011	Woolf	Hauser Watershed Coalition meeting	General public
November 16, 2011	Ferriter	Idaho Invasive Species Council update	SW Weed Control Association
November 16, 2011	Safford	SW Idaho Weed Control Association fall recertification meeting	Public agency weed managers and commercial herbicide applicators
November 19, 2011	Safford	Idaho Horse Council annual meeting	Horse Club members
November 22, 2011	Ellis	Idaho Horticulture Society annual conference	Fruit growers, Allied Industry and government representatives
December 2, 2011	Ellis	Idaho Honey Industry Association	Honey producers and beekeepers
December 6, 2011	Ellis	Boise Metro Rotary Club	General public
December 7, 2011	Safford	Environmental Care Association of Idaho conference	Commercial pest control applicators
December 9, 2011	Safford	Environmental Care Association of Idaho conference	Commercial pest control applicators
December 12, 2011	Safford	Gem County recertification seminar	Farmers and ranchers
December 19, 2011	Woolf	Post Falls River Association meeting	General public



# 2011 ISDA European Corn Borer Survey



*Ostrinia nubilalis*



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# 2011 ISDA Old World Bollworm Survey



*Helicoverpa armigera*

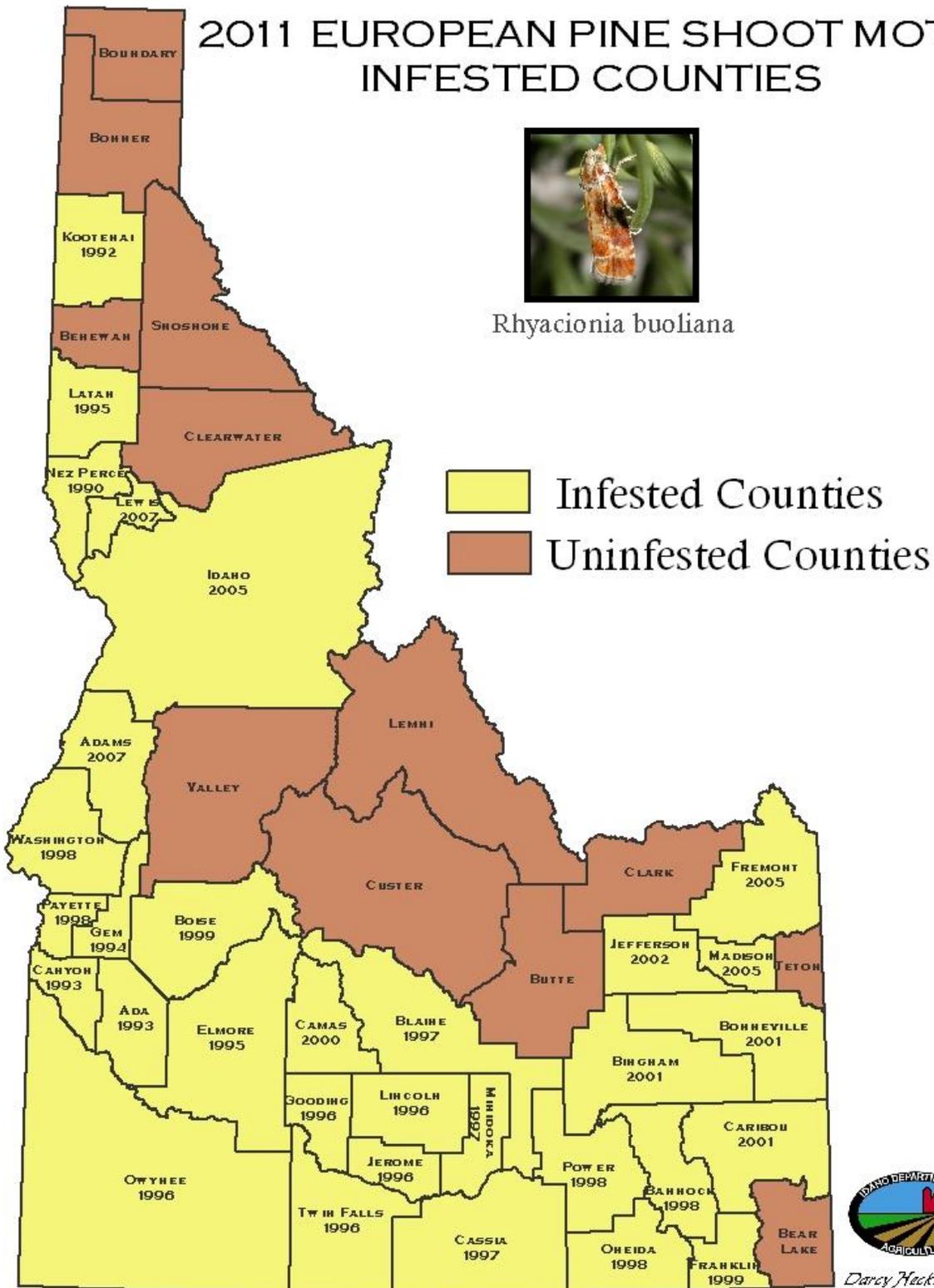


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# 2011 EUROPEAN PINE SHOOT MOTH INFESTED COUNTIES



Rhyacionia buoliana

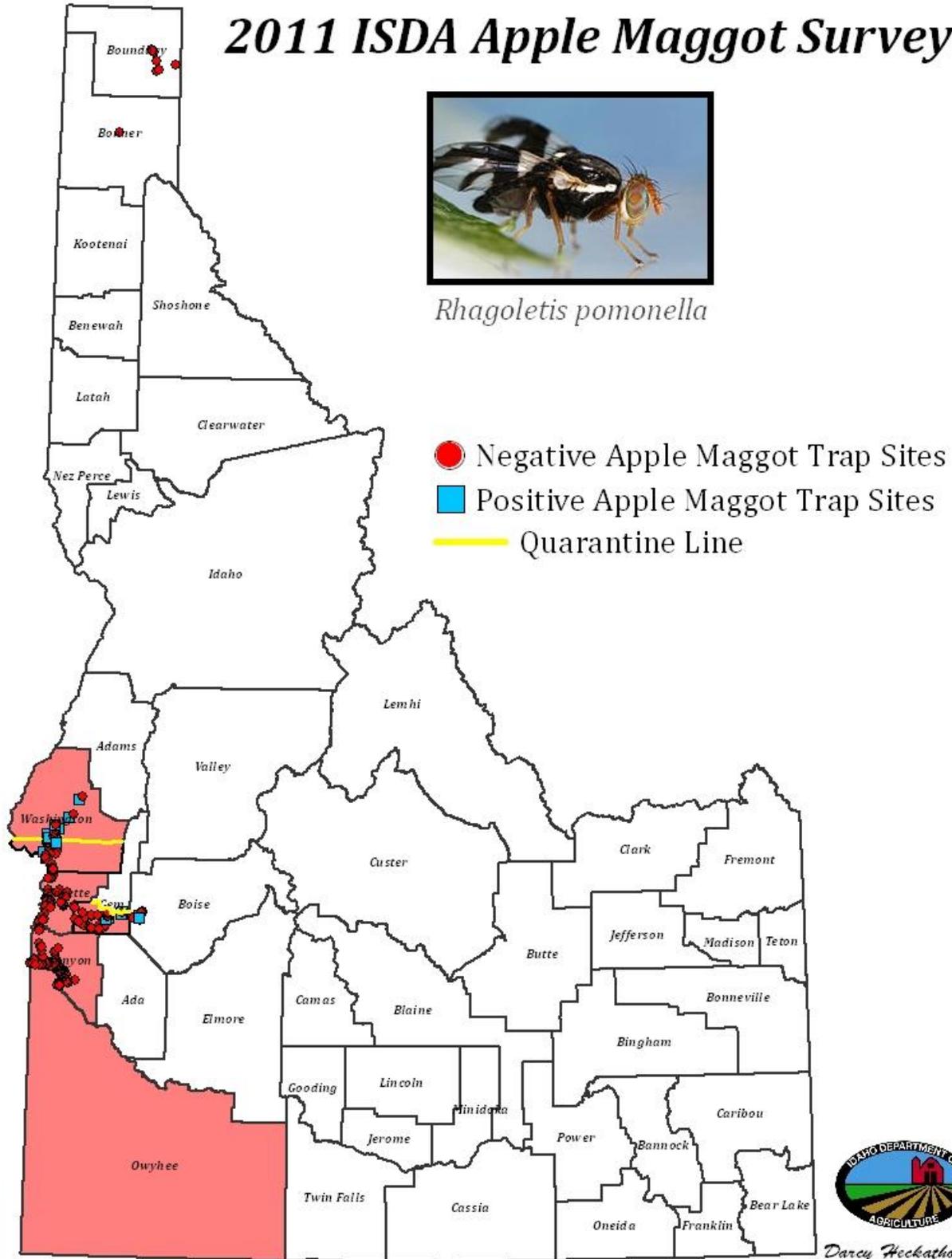


Darcy Heckathorn

# 2011 ISDA Apple Maggot Survey



*Rhagoletis pomonella*



Darcy Heckathorn