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Idaho State Department of Agriculture

Division of Plant Industries

2018 End of Year 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 for the purpose of protecting Idaho's agricultural industries valued at over $4 billion dollars; which include crops, nursery, and ranching.

The Division of Plant Industries cooperates with other agencies including:

- Idaho Department of Lands (IDL)
- University of Idaho (UI)
- United States Forest Service (USFS)
- United States Department of Agriculture (USDA), Animal and Plant Health Inspection Services (APHIS), Plant Protection and Quarantine (PPQ)
- County governments
- Cooperative Weed Management Areas (CWMA)
- Industry groups and other stakeholders to protect Idaho's landscapes and environments from invasive species.

Finally, the Division of Plant Industries helps accomplish the ISDA's broader mission 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 2018 to enforce Idaho statutes and fulfill the mission of ISDA.

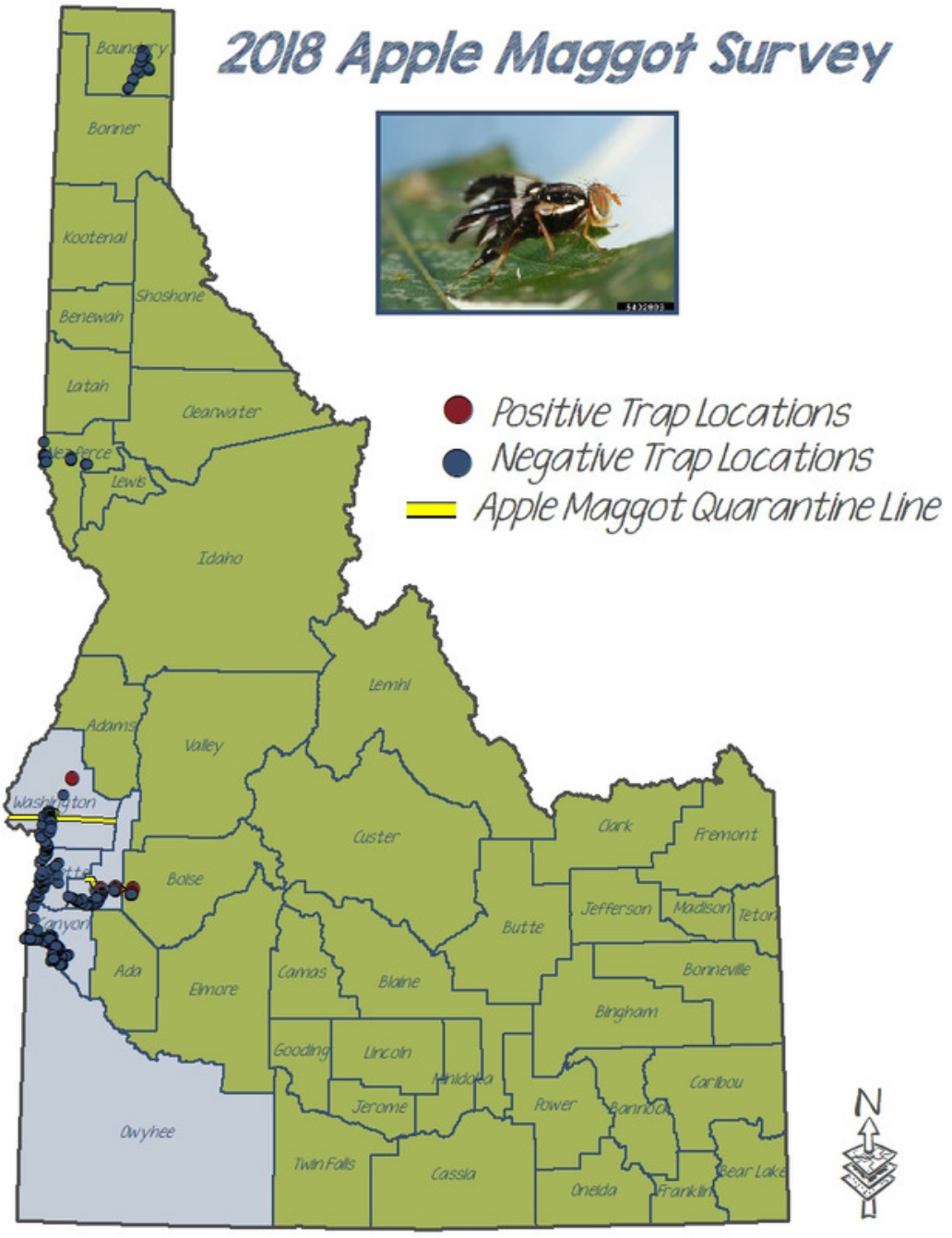
Apple Maggot Survey

In 1990, ISDA established by administrative rule, an AM-free regulated area (the "Apple Maggot Free Zone" or AMFZ), encompassing the major apple production areas of the state. Every year, ISDA conducts an area-wide survey for AM using sticky yellow panel traps with ammonium carbonate bait.

In 2018, 348 traps were placed in commercial apple orchards and home landscape trees in Boise, Boundary, Canyon, Gem, Nez Perce, Owyhee, Payette, and Washington Counties. Specimens suspected of being AM were sent to the ISDA entomologist for confirmation.

This year we had 7 positive sites for AM, three of the positive sites were in Boise County and one in Washington County, these four positives were outside the established AMFZ. There were also three positive AM traps in Gem County that were located within the AMFZ. All AM specimens collected within the AMFZ were found on traps that were placed in apple trees in non-commercial settings.
Gem and Washington counties are both considered partially infested and regulated under a state interior quarantine https://adminrules.idaho.gov/rules/current/02/020608.pdf

During 2019, ISDA will continue to conduct detection surveys in the eight counties. In Gem county, ISDA will set out supplementary detection traps around the positive locations.



Brown Marmorated Stink Bug

Brown Marmorated Stink Bug (BMSB) is an invasive insect pest native to Asia. In the U.S., it was first detected in Allentown, PA in 1998 and has since spread to over 44 states. BMSB is an agricultural pest that feeds on a wide range of tree fruits, seed pods and vegetables including apples, peaches, green beans, peppers and corn. For homeowners, it can be a nuisance pest of residential dwellings as, in the fall, it congregates in vast numbers looking for protected places to overwinter.

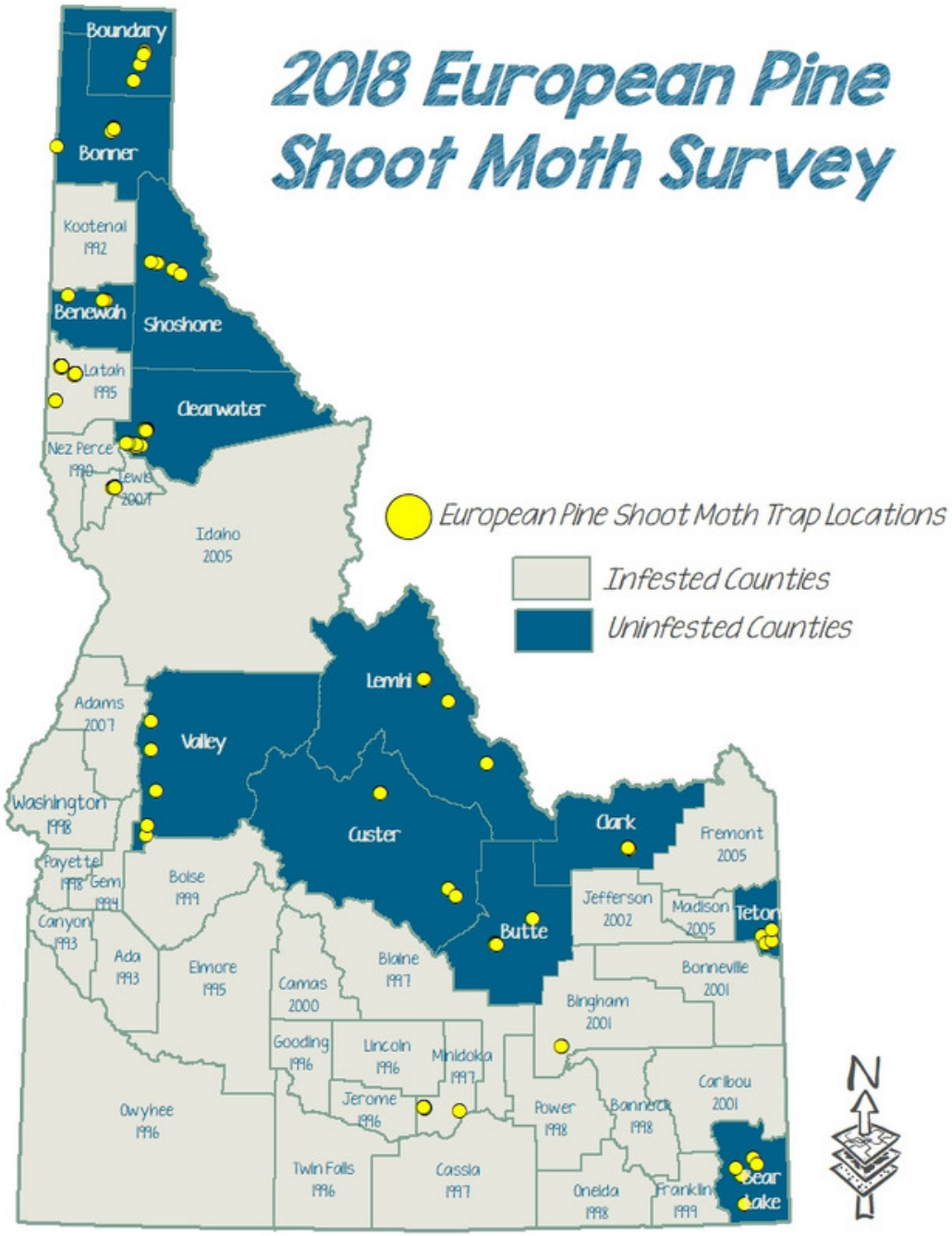
The first confirmed report of BMSB in Idaho occurred in Nampa in 2012 when new residents (recently moved from Maryland) noticed several stink bugs emerging from containers of belongings while unpacking. Follow up inspections of the area in 2012 and 2014 failed to find evidence of an established population at that location, however, in October 2014 a living specimen of BMSB was collected in a Boise garage, and since 2015, every fall, ISDA has received about a dozen verified reports of BMSB detections (roughly half in Ada County and half in Canyon County urban areas).

In 2017 first reports of BMSB came from Nez Perce and Payette counties. Until 2018 all BMSB captures involved very small numbers of individuals (usually three or less at a location). During September 2018, for the first time, ISDA was contacted concerning a residence in NW Boise where BMSB were gathering in excess of 100 per day (for several weeks) attempting to hibernate. It was determined that the bugs had not grown up on any of the plants in that yard, that they were coming in from some outside location, but the source of the population could not be ascertained at that time.

Western Cherry Fruit Fly Survey

ISDA conducts an annual trapping program to detect first emergence of Western Cherry Fruit Fly. In 2018, WCFF adults were first observed in ISDA sentinel traps on May 22, in Canyon County, and on June 14, in Gem County.

The agency also tracks degree-day accumulation calculations as required by the California Department of Food and Agriculture (CDFA) to comply with their WCFF quarantine, which is aimed at states wishing to export fresh sweet cherries into or through California.



European Pine Shoot Moth Survey

The Idaho European Pine Shoot Moth survey is conducted annually and complies with California and Montana quarantines.

In 2018, ISDA staff placed 74 EPSM traps in nurseries and pine tree plantations throughout the 12 Idaho counties in which EPSM have never been detected to date.

In addition, at the request of nurseries seeking phytosanitary data to allow export of nursery stock, traps were set out and monitored in two counties where EPSM had been captured in the past.

No newly confirmed infested counties were reported in 2018.

Finding effective control regimes and complying with Montana and California EPSM quarantines continue to challenge this segment of the Idaho nursery industry.

Gypsy Moth Survey

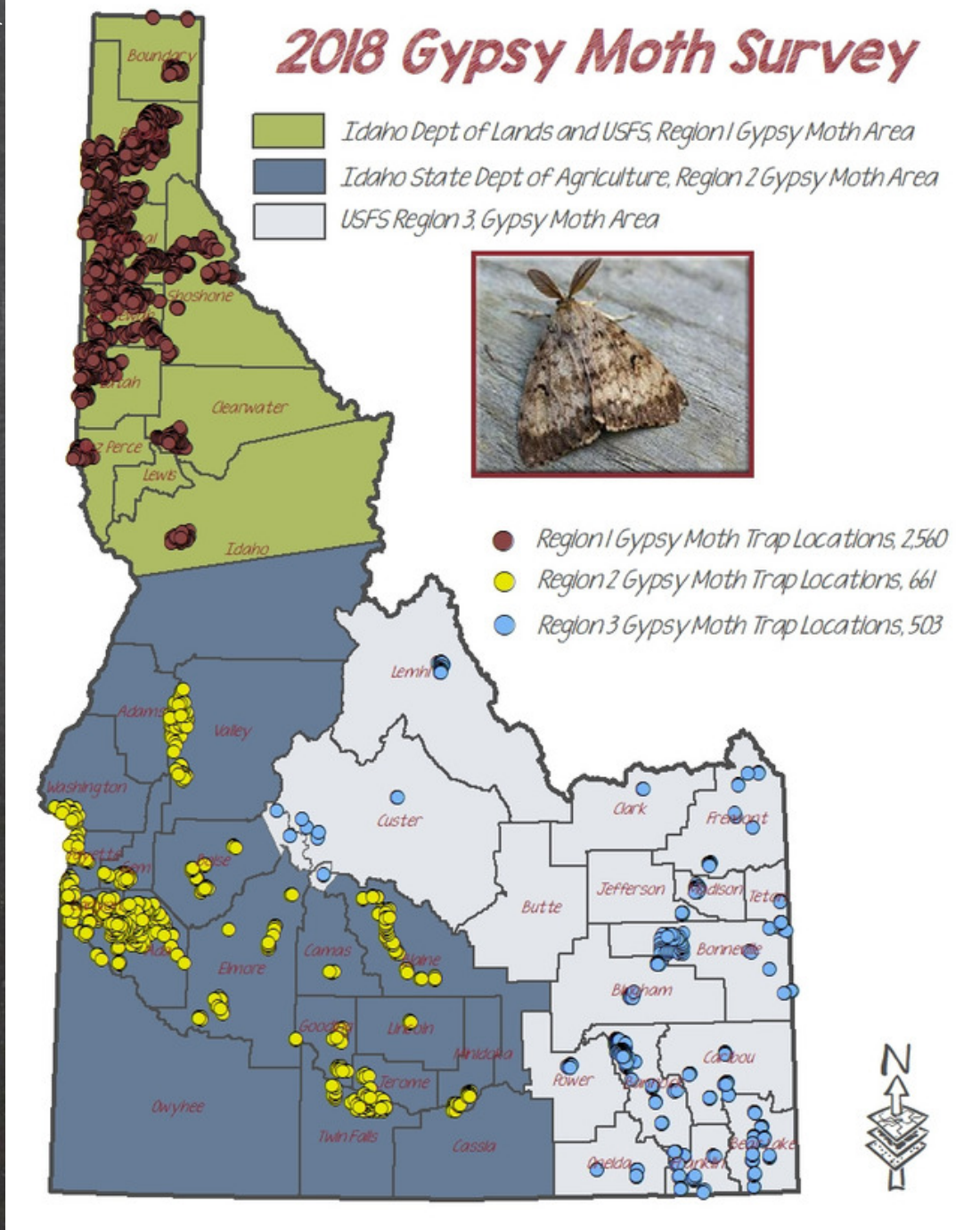
During 2018, 3,713 Gypsy Moth survey traps were deployed throughout Idaho. The number of traps placed by each agency is as follows:

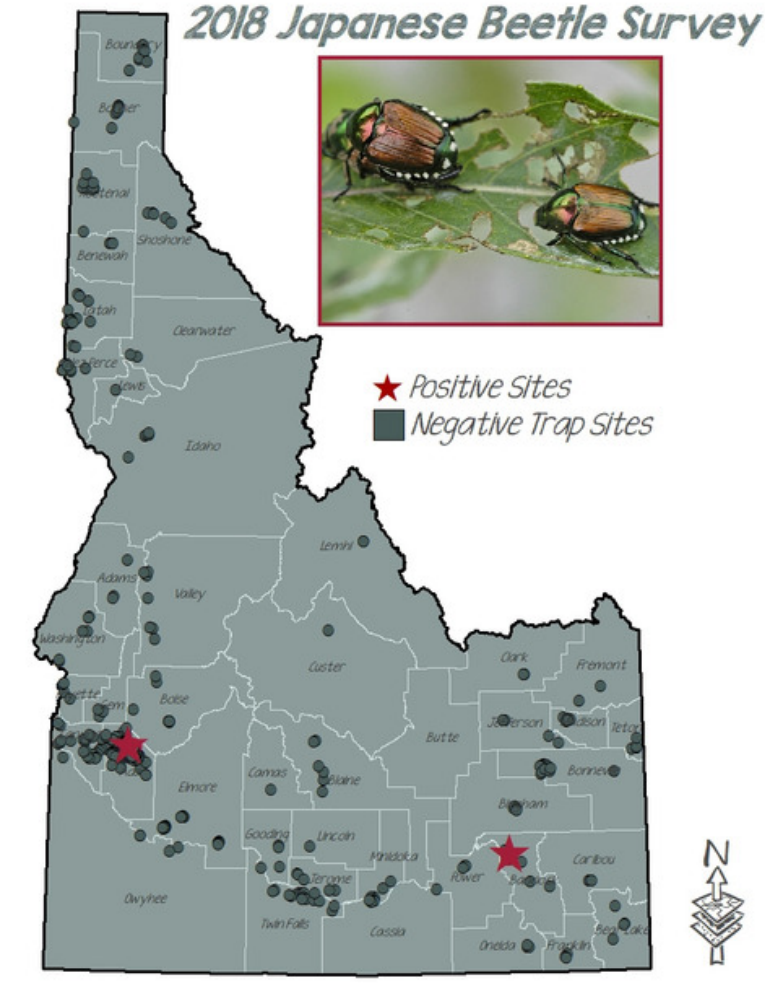
- Idaho Department of Lands (IDL): 2,491 detection traps
- Idaho State Department of Agriculture (ISDA): 661 detection traps
- United States Forest Service R-1(USFS): 94 detection traps
- United States Forest Service R-4 (USFS): 467 detection/36 delimit traps

Between May 1, 2018 and November 1, 2018, staff members from each participating agency completed the placement and subsequent removal of gypsy moth traps throughout the state.

In 2016, one gypsy moth was captured in southern Idaho. This moth was determined by the OTIS Methods Development Lab to be of the European/North American strain (EGM) and was caught in Pocatello, Bannock County in one detection trap. In response to this capture, during 2017 & 2018 delimitation trapping was conducted, with 36 traps set up in a square mile grid centered around the positive Pocatello site. Delimit traps were checked once in Mid-August. No moths were captured in the Pocatello delimiting traps during 2017 & 2018.

The complete report on the 2018 Gypsy Moth Survey in Idaho may be viewed at the following IDL website: https://www.idl.idaho.gov/forestry/forestry-health/gm-report-2018.pdf





Japanese Beetle Survey

The Japanese Beetle (JB) is a highly destructive invasive plant pest that, if established, can be very difficult to control. Feeding on grass roots, JB grubs damage lawns, golf courses, parks and pastures. JB adults attack the foliage, flowers or fruits of more than 300 ornamental and agricultural plants.

JB that show up in the west have usually arrived by "hitchhiking" on airplanes, other vehicles or Living plants moved from an infested area.

In 1990, ISDA began setting out approximately 340 JB detection traps each year in high risk locations throughout Idaho. These routine surveys resulted in the capture of single specimens of JB in Ada County (1992), Gooding County (1997) and Twin Falls County (2011).

In 2012 ISDA traps collected a total of 61 JB in Idaho: four near a nursery in Kootenai County, one near a nursery in Bannock County, and 56 in Boise in Ada County. Extensive delimitation trapping and pesticide treatment where JB were caught was conducted from 2013-2018. Treatment data and catch results for each year are presented in the table below.

For 2019 delimitation trapping will continue in the Boise area and will be added in Pocatello. Currently no 2019 treatments are planned.

Statewide Japanese Beetle Monitoring using Pheromone-Baited Traps and Results of the JB Eradication Treatments in Boise, Idaho 2012-2018

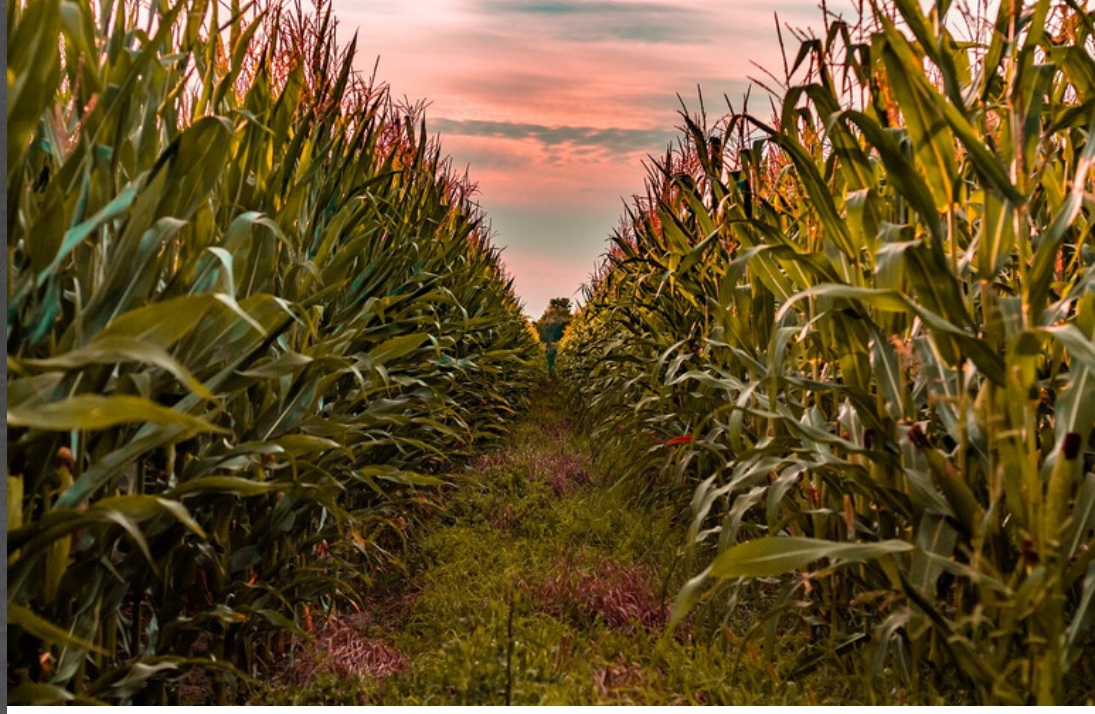
Year	2012	2013	2014	2015	2016	2017	2018
Number of Traps in Boise Only	222	713	2646	2156	1918	1287	1302
Number of Beetles Caught in Boise	56	3,058	1,283	365	128	19	4
Number of Residential/Commercial Properties Treated	N/A	100	500	1900	850	400	400
Number of Parks Treated	N/A	13	14	16	11	3	3
Number of Acres Treated	N/A	250	400	550	340	60	40
Number of Traps Outside of Boise	365	840	430	297	289	306	295
Number of Beetles Caught Outside of Boise	4 in Kootenai Co. 1 in Bannock Co.	0	0	0	0	0	1 Bannock Co.

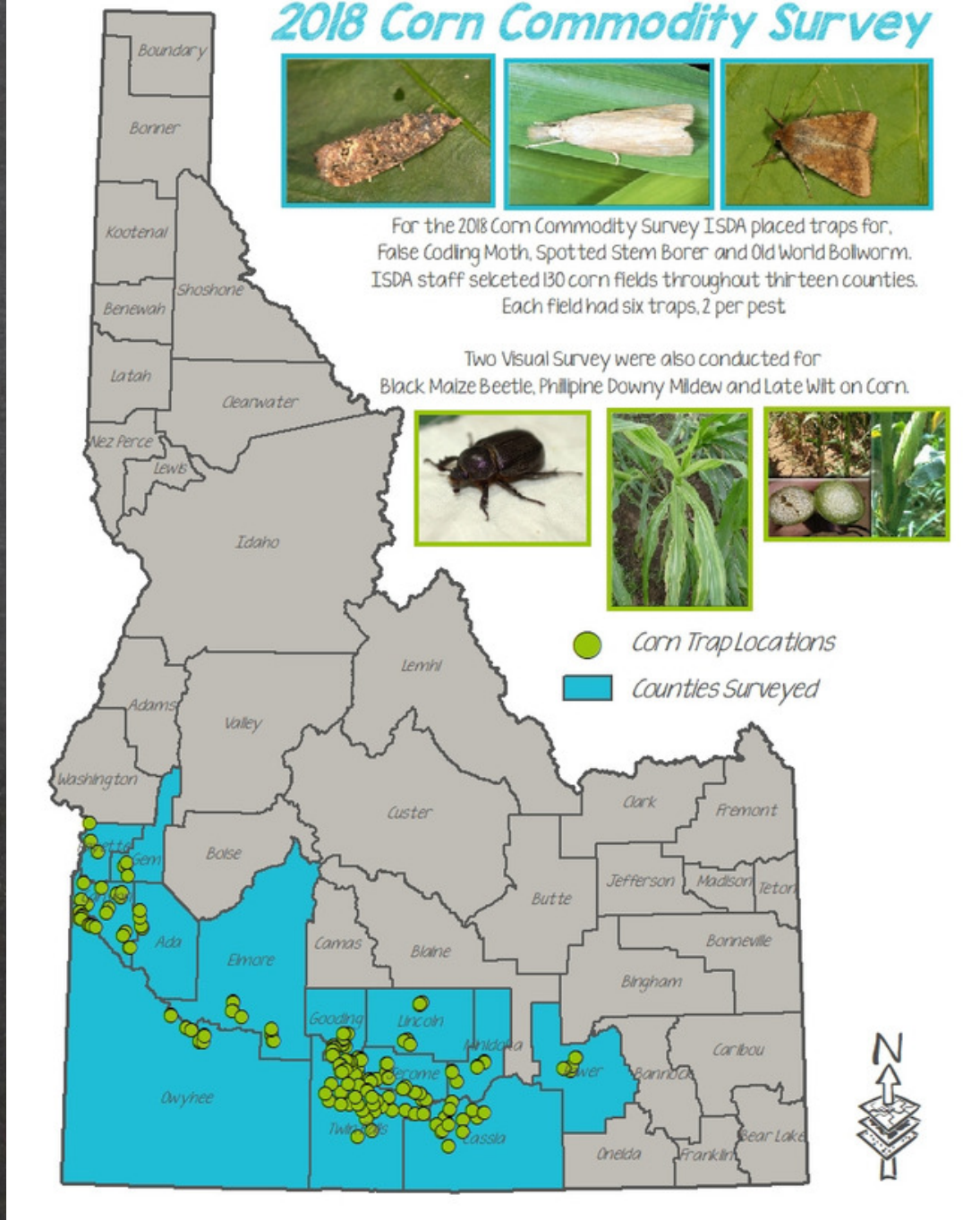
Corn Commodity Survey

Corn is a major agronomic crop in Idaho. The USDA National Agricultural Statistical Service reported 340,000 acres planted in the state in 2017. 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 2018, ISDA, in cooperation with the USDA APHIS PPQ's Cooperative Agricultural Pest Survey program (CAPS), conducted surveys for three exotic organisms that could threaten Idaho corn crops. The pests of concern were: False Codling Moth, Old World Bollworm and Spotted Stem Borer.

ISDA staff located 130 corn fields throughout the following counties: Ada, Canyon, Cassia, Elmore, Gem, Gooding, Jerome, Lincoln, Minidoka, Owyhee, Payette, Power and Twin Falls. Two traps per pest were set out in each corn field, a total of 260 traps per pest. Traps were set out by June 15th and removed by the end of September. Traps were serviced every two weeks and lures were changes as instructed. ISDA also conducted 2 visual surveys for Philippine Downy Mildew, Late Wilt of Corn, and Black Maize beetle in all corn fields that were trapped throughout the assigned counties. Results from both the visuals and trap surveys were all negative.





Grain Commodity Survey

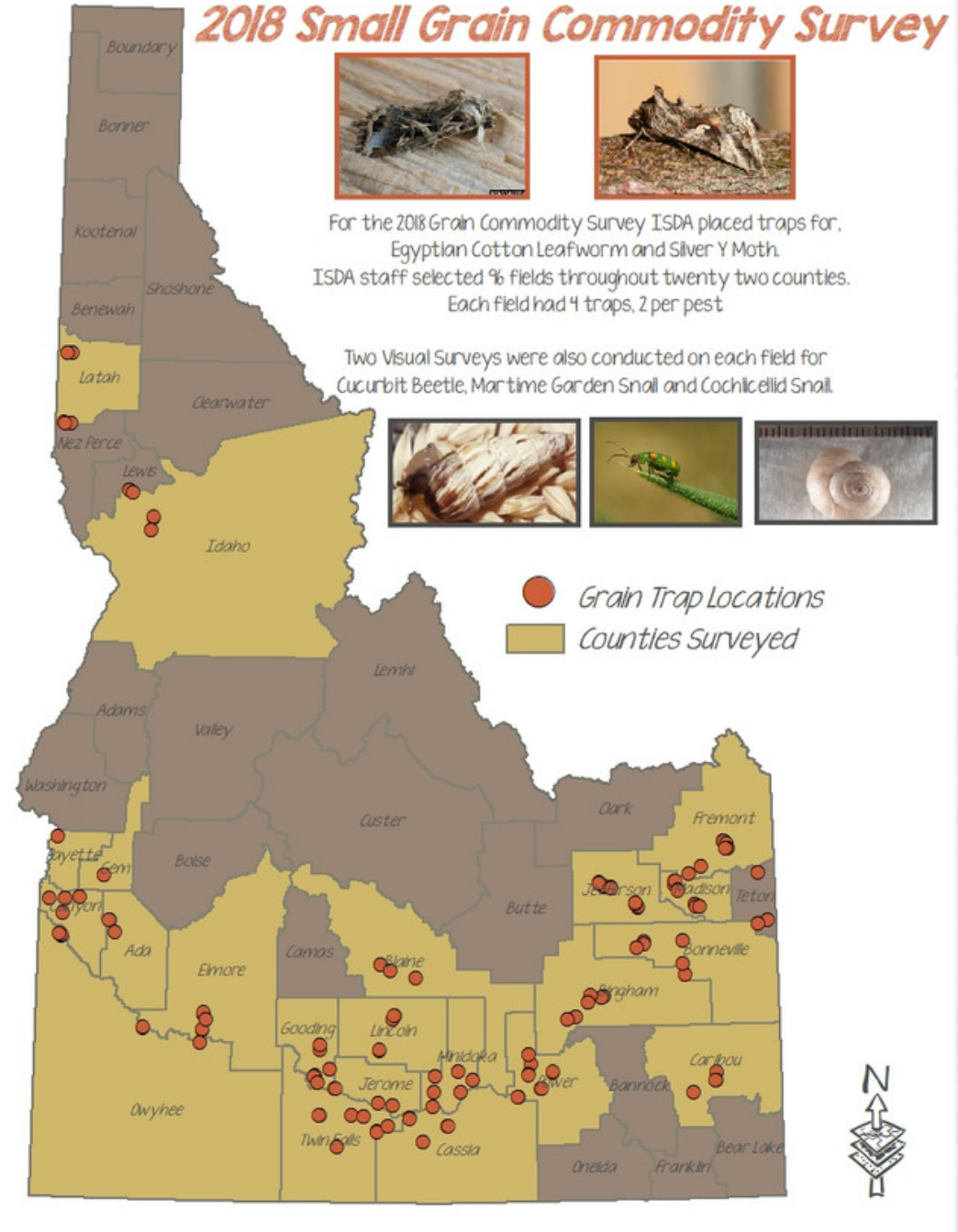
Wheat, which is grown in 42 of 44 Idaho counties, is a prominent crop in Idaho with its largest production areas in the eastern part of the state and the north central Palouse region. Idaho ranks ninth nationally in production of all U.S. wheat. In 2017, Idaho farmers planted approximately 1.2 million acres of wheat, which produced 37 million bushels of spring wheat and 54 million bushels of winter wheat with a combined production value of $416 million.

In 2018, ISDA, in cooperation with the USDA APHIS PPQ's Cooperative Agricultural Pest Survey program (CAPS), conducted surveys for two exotic organisms that could threaten Idaho grain crops. The pests of concern were: Egyptian Cotton Leafworm and Silver Y Moth,

ISDA staff located 96 grain fields throughout the following counties: Ada, Bingham, Blaine, Canyon, Caribou, Cassia, Elmore, Fremont, Gem, Gooding, Idaho, Jerome, Jefferson, Jerome, Latah, Lincoln, Madison, Minidoka, Owyhee, Payette, Power and Twin Falls.

Two traps per pest were set out in each grain field, a total of 192 traps per pest. Traps were set out by May 15th and removed in August. Traps were serviced every two weeks and lures were changes as instructed.

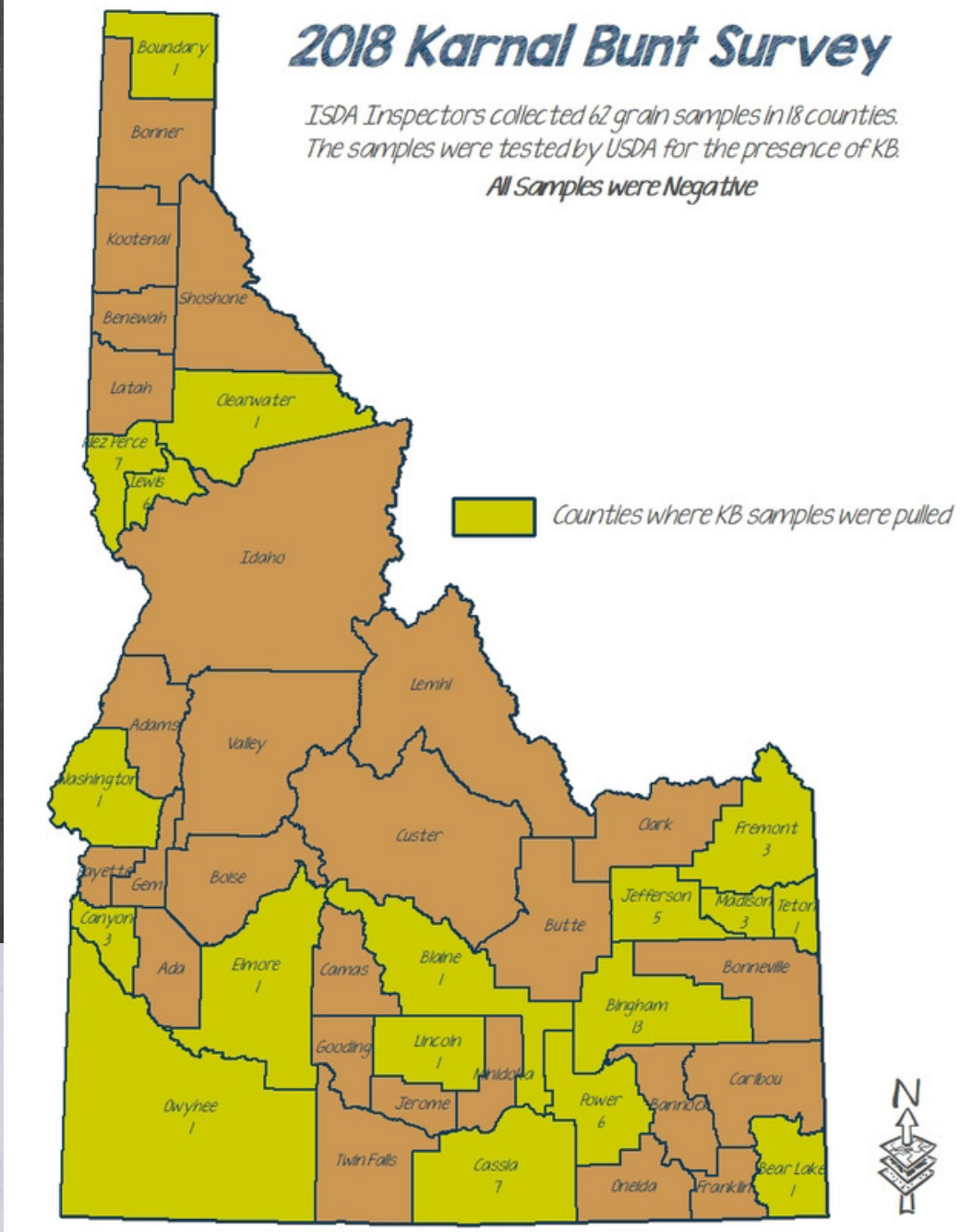
ISDA also conducted 2 visual surveys for Cucurbit beetle, Maritime Garden Snail and Cochlicellid Snail in all grain fields that were trapped throughout the assigned counties. Results from both the visuals and trap surveys were All negative.

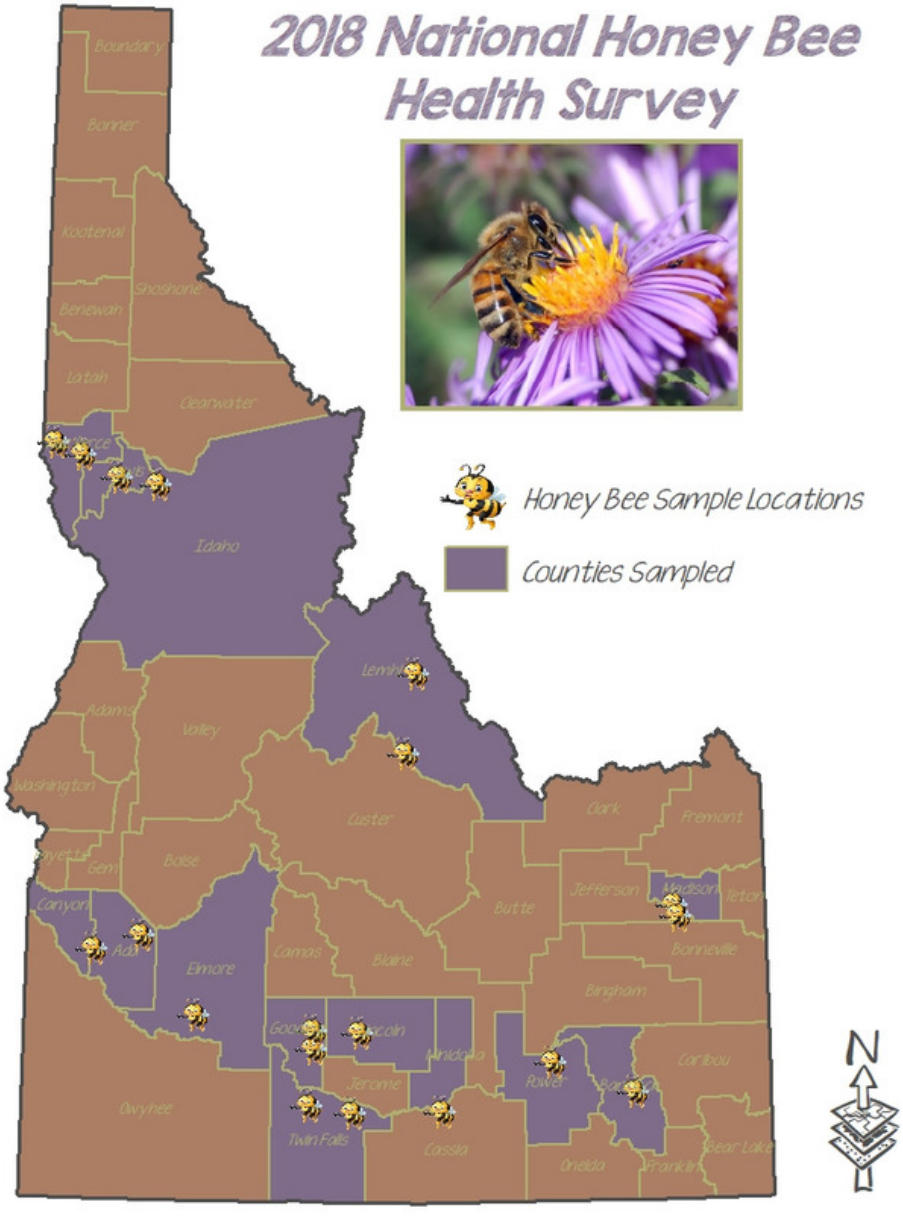


Karnal Bunt Survey

Karnal Bunt (KB) is a disease of wheat caused by the fungus Tilletia indica. T. indica was found in the United States in 1996. It has not been found in Idaho. The US Department of Agriculture has attempted to eradicate the fungus via continuing surveys, along with quarantines. ISDA has conducted surveys in Idaho for KB since 1996.

During 2018, ISDA collected 62 wheat samples from 18 counties in Idaho and sent them to a USDA APHIS PPQ lab to be tested for the pathogen. Results from this year's survey were all negative. To date, KB has never been detected in Idaho.





Idaho Apiary Registration and National Honey Bee Health Survey

ISDA registered 115 Beekeepers and 114,915 colonies in 2018. This year Idaho was one of 42 states and territories to participate in USDA APHIS's national honey bee health survey.

This survey is an attempt to document which diseases, parasites, and pests of honey bees are and are not in the U.S. The survey is sponsored by APHIS in collaboration with ARS and the University of Maryland. The effort is primarily geared toward establishing the absence of exotic bee pests including, but not limited to, the parasitic mite Tropilaelaps, the Asian honey bee (Apis cerana), and Slow Bee Paralysis Virus in the U.S. To maximize the information gained from the survey effort, samples analyzed for other diseases and parasites known to be present in the U.S.

For the 2018 NHBS every state that participated sampled a group of beekeepers as they have in the past in addition to monitoring a sub set of 5 beekeepers twice - once in the spring before or at the start of honey flow, and again in the fall after honey flow.

ISDA collected samples from 8 hives in each of the 24 apiaries surveyed throughout Idaho this summer. Out of the 24 apiaries 5 of the apiaries agreed to participate in the longitudinal survey were they were surveyed twice; once in the spring before honey flow and then again in the fall after honey flow. All 24 surveys were completed by September 24, 2018. ISDA is waiting for diagnostic reports, to be supplied by APHIS from this year's survey.

Emerald Ash Borer

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 a total of 30 states, primarily in the eastern half of the U.S. and parts of Canada. Interceptions have been made as far west as Denver, Colorado. 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 2018 National EAB Survey, a total of 4 purple sticky traps at 4 locations in 1 county throughout Idaho were installed and monitored. Sites included urban ash plantings. In 2018, the traps were baited with the Z3 hexanol lure only. As in previous years, no EAB were captured in Idaho in 2018. (Report provided by Brian Marschman, Idaho State Plant Health Director, USDA APHIS PPQ)

Exotic Wood Boring Bark Beetle

As part of USDA's 2018 National EWBB Survey, a total of 46 Lingren Funnel traps at 18 locations in 12 counties throughout Idaho were installed and monitored. Sites included Forest Service campgrounds, National Forests, tree farms, wood recyclers and urban landscape plantings.

In 2018, a variety of 7 different lure combinations were used in the traps. Current year's specimen samples are in the process of being identified. (Report provided by Brian Marschman, Idaho State Plant Health Director, USDA APHIS PPQ)

Pale Cyst Nematode

Idaho's Pale Cyst Nematode Eradication Program:

- Production Acres Surveyed: 2,641
- Seed Acres Surveyed: 1,879
- Number of Counties Surveyed: 7
- Fields Positive: 29 fields (3,277 acres total); two new fields were detected in 2018.

All twenty-nine known infested fields are located within an 8.5-mile radius that spans a portion of northern Bingham County and southern Bonneville County. PPQ deregulated 757 acres of associated fields in 2018 that had successfully completed the deregulation protocol, consisting of two full-field surveys that each follow a host crop. The current regulated area is 7,554 acres; of that total 3,277 acres are infested fields.

Viability staining analyses of cysts from 22 infested fields originally detected between 2006 and 2014 show no detectable viability. Of these 22 fields, 18 have successfully completed the greenhouse bioassay phase of evaluating eradication progress, making them eligible to return to potato production with certain regulatory controls in place. The remaining 6 fields have greenhouse bioassays in progress, with final results expected in 2019. Seven infested fields detected in years 2013-2018 are working through the eradication process and still show some level of viable PCN in soil samples.

An infested field detected in 2006 returned to potato production in 2015 when red potatoes were planted on the west half the field (approximately 70 acres). The grower has alternated growing potatoes on the west and east halves of the field every year since 2015. No viable cysts were detected after potato crops were harvested in years 2015-2017. Results from testing following the 2018 crop are pending and expected in early 2019.

The trap crop litchi tomato (LT) was planted on a 71-acre portion one infested field in 2018. Soil samples were collected at the end of the growing season to determine treatment efficacy and lab results are expected in early 2019.

The soil fumigant Telone II (1,3-dichloropropene) was applied to 430 acres (3 fields) in 2018. Soil samples were collected from the fields at the end of the 2018 growing season to determine treatment efficacy; lab results are expected in early 2019.

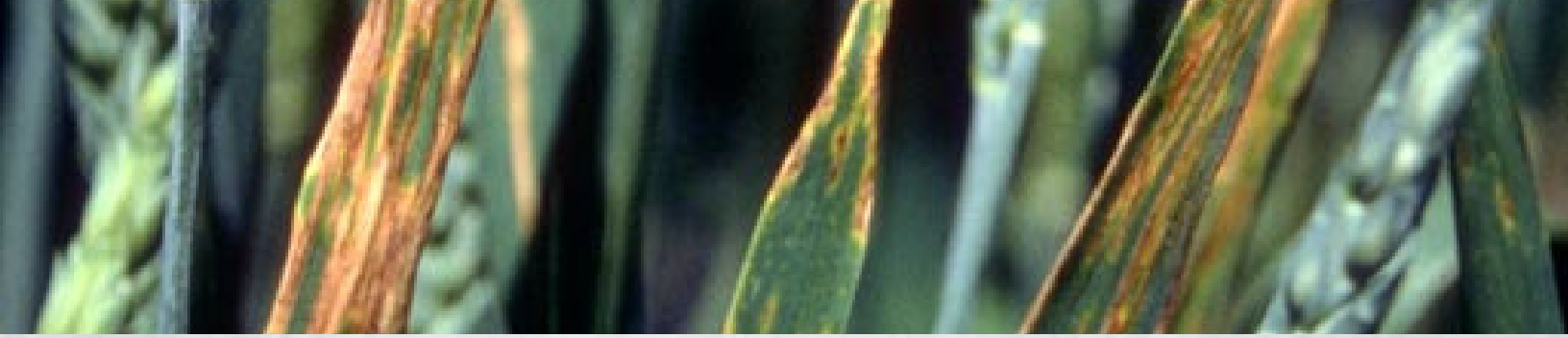
The 2018 Annual Research Review was scheduled in January 2019 but had to be cancelled due to the partial federal government shutdown. PPQ is working on rescheduling the Review in March or April 2019. The Review is typically attended by PPQ, Idaho State Department of Agriculture, Idaho Potato Commission, representatives of the Idaho infested field owners/operators, and researchers involved with PCN research projects from the University of Idaho (Moscow, Aberdeen, and Parma), and Agricultural Research Service (Washington). Ongoing research projects include developing non-chemical PCN eradication tools such as trap crops, hatching factors, bio-fumigants, and developing a PCN-resistant russet-type potato.

Stakeholder updates (Quarterly Reports) were published to the USDA APHIS PCN website in January, April, July, and October 2018.

Sampling Information: To date, the PCN Program has collected 526,794 soil samples in Idaho to ensure Idaho's freedom from PCN outside of the 29 known infested fields. More than 160,300 samples have been collected from the eradication fields since 2006 in order to monitor eradication progress and to provide cysts to several institutions for PCN research.

To date, the PCN laboratory in Idaho Falls has screened 624,745 soil samples collected in Idaho and 79,062 samples from other potato-producing states. An additional 63,862 samples collected in Idaho were screened at the Idaho Food Quality Assurance Laboratory and the University of Idaho Parma laboratory between 2006 and 2009. There have been no pale cyst nematode detections in the U.S. outside of southeast Idaho. Since program inception, the PCN Program has analyzed the viability of 891 cyst samples collected from infested fields before and after fumigation treatments.

Since 2009, 89,379 soil samples have been collected and screened in support of the Idaho State Department of Agriculture's (ISDA) post-regulation survey of fields deregulated by the USDA.



Plant Pathology Summary Report

In 2018 the Idaho State Department of Agriculture Plant Pathology Lab (ISDA-PPL) received a total of 1077samples (field, seed, regulatory, and submitted). This was a 20% increase from last year. ISDA-PPL ran a total of 3703 tests on the above samples; nearly doubling the number of tests from the previous year. For the year of 2018 ISDA-PPL received 196 different lots of bean or non-Phaseolus bean seeds for testing prior to planting in Idaho. From the 196 different lots, we tested 263 samples, and ran 1588 tests on these samples. Our average turnaround time was 27 days. We found 13 lots were positive for regulated bacteria. The positives were as follows: 11 lots were contaminated with Pseudomonas syringae pv syringae, one lot with P. syringae pv syringae and Xanthomonas axonopodis pv phaseoli, and one lot with Pseudomonas savastanoi pv phaseoli.

602 samples were accepted at ISDA-PPL for testing from the field inspection program. These samples represented 16 different crops. We tested for 1645 different organisms from the samples with an average turnaround time of 22.3 days. The table below shows the number of fields that were positive for organisms of concern.

ISDA-PPL received seed samples from 196 lots (206samples) representing 17 different host species, in 2018. We tested for 456 organisms with an average turnaround time of 30days. Of particular note this year, were 2 lots of Phaseolus bean samples that were positive for Bean Common Mosaic Necrosis Potyvirus.

Idaho's program that allows potato growers to plant seed back to their own farms one year after participating in a certification program, requires potato growers to get their seed tested for 3 viruses and 1 bacterium. Only 2 lots of potatoes have been submitted for testing so far this year.

Finally, the ISDA plant pathology lab ran 8 tests on 4 samples of miscellaneous origin (nursery samples, hay fields, home-owner questions etc.). Nothing of regulatory significance was detected during these tests.

Crop	# Positive Fields	Organism
Azuki Beans	2	Pseudomonas syringae pv syringae
Barley	15	Xanthomonas translucens or X. sp.
Beans (Phaealus)	5	Pseudomonas syringae pv syringae
	1	Bean Common Mosaic Potyvirus
Carrot	2	Alternaria radicina
Corn	14	High Plains Virus
	1	Fusarium subglutinans
	1	Fusarium verticilloides
Garlic	1	Sclerotium cepivorum
Onion	7	Botrytis allii
	2	Sclerotinia sp.
	1	Sclerotinia cepivorum
Pea	5	Fusarium sp.
	2	Phoma medicaginis
	1	Phoma pinodella
	11	Pseudomonas syringae pv. pisi
	1	Sclerotinia sp.
Radish	1	Sclerotinia sp.

Seed Lab Summary

The Idaho State Seed laboratory (ISSL) received 5845 samples and completed 8767 service tests in fiscal year 2017/18. The most common crops submitted for service testing during this timeframe were alfalfa, grains, corn, onion, beans, peas, mixtures, turnip, lettuce, carrot, timothy, teff, sagebrush, and other native species. In all, 124 regulatory enforcements were checked for licensing and truth-in-labeling requirements; 8 of these checks resulted in inspector actions. A total of 646 seed dealer licenses were issued.
Reseeding projects with native seed from the BLM has increased our testing requests especially with an emphasis on sagebrush and kochia. The lab continues to be very busy with agricultural crops as well. As many as 250 distinct species were tested.

Export Certification for the 2018 Calendar Year

During 2018, the Division of Plant Industries issued 4127 Federal and 133 State Phytosanitary Certificates for 216 different types of commodities to 83 countries. The Division of Plant Industries certified over 431,940,802 pounds of seed, grain, hay, lumber, plants, and other commodities for export. The ISDA operates this program under a Memorandum of Understanding with the USDA.

Cull Onion Inspections and Actions

In 2018, monitoring of cull onion sites began during the first week of March in Canyon, Washington, Payette and Owyhee counties. Monitoring and inspection of these sites was conducted to identify and keep areas of high concern in compliance with IDAPA 02.06.17 - Rules Governing the Disposal of Cull Onions and Potatoes.

The deadline for disposal each year is March 15. Once the deadline was reached, visits were conducted and cull onion piles were then removed, resulting in compliance being reached. In 2018, there were fewer locations that required a visit, as compared to 2017, and no formal action was required.

Other Regulatory Inspections and Actions

ISDA, under the authority of Title 22, Chapters, 4, 5, 23 and 24 of the Idaho Code, and IDAPA defined pest quarantines, conducted 1,739 inspections and consequently took action against various pest threats and other violations.

In 2018, there were 2,039 licensed nurseries in the state; of those, 551 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.

Diseases and Pests Found During 2018 Field Inspections for Export Certification

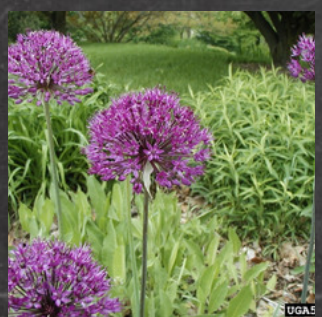
In 2018, 66 seed companies submitted field inspection requests representing 37 crops. The total acres submitted for inspection were 30,757, with 65,663 acres actually inspected due to multiple inspections required for some crop diseases. This represents 6 more firms than participated in 2017, with a 5.32% decrease in acreage from the 32,485 acres submitted in 2017.

Year	Number Participating Firms	Number of Crops	Submitted Acres	Inspected Acres
2004	44	27	46,282	79,671
2005	43	28	42,961	74,905
2006	47	30	37,859	70,692
2007	48	32	30,938	58,218
2008	50	32	34,439	66,114
2009	43	33	36,541	72,184
2010	46	35	32,495	62,608
2011	41	30	25,193	51,404
2012	50	30	24,102	50,045
2013	57	32	23,785	50,157
2014	62	36	26,620	55,846
2015	62	36	28,678	64,077
2016	62	38	31,093	67,930
2017	60	34	32,485	68,040
2018	66	37	30,757	65,663

Alfalfa Seed: 1,411.80 acres were submitted for inspection during the 2018 growing season. All fields inspected were found apparently free from Alfalfa mosaic alfamovirus (AMV), Bacterial leaf spot (Xanthomonas alfalfae), Bacterial wilt of alfalfa (Clavibacter michiganensis subsp. insidiosus), Dodder (Cuscuta spp.), Leafy spurge (Euphorbia esula), Stem and bulb nematode (Ditylenchus dipsaci), Summer blackspot (Cercospora medicaginis), Verticillium wilt (Verticillium albo-atrum), and Verticillium wilt of mint (Verticillium dahliae).

Allium, Chives: 18.00 acres were submitted for inspection during the 2018 growing season. In total, there were 36.00 acres inspected due to multiple inspection requirements for certain diseases. All fields inspected were found apparently free from Asparagus rust (Puccinia asparagi), Botrytis rot of onion (Botrytis allii), Botrytis stalk rot (Botrytis aclada), Downy mildew of onion (Peronospora destructor), Onion smudge (Colletotrichum circinans), Onion yellow dwarf potyvirus, Purple blotch (Alternaria porri), Sclerotinia rot (Sclerotinia spp.), Smut (Urocystis sp.), Stem and bulb nematode (Ditylenchus dipsaci), and White rot of onion (Sclerotium cepivorum).

Allium, Garlic: 11.66 acres were submitted for inspection during the 2018 growing season. All fields inspected were found apparently free from Asparagus rust (Puccinia asparagi), Botrytis rot of onion (Botrytis allii), Botrytis stalk rot (Botrytis aclada), Downy mildew of onion (Peronospora destructor), Onion smudge (Colletotrichum circinans), Onion yellow dwarf potyvirus, Purple blotch (Alternaria porri), Sclerotinia rot (Sclerotinia spp.), Smut (Urocystis sp.), Stem and bulb nematode (Ditylenchus dipsaci), and White rot of onion (Sclerotium cepivorum).

Allium, Onions: 853.12 acres were submitted for inspection during the 2018 growing season. In total, there were 944.27 acres inspected due to multiple inspection requirements for certain diseases. All fields inspected were found apparently free from Asparagus rust (Puccinia asparagi), Botrytis stalk rot (Botrytis aclada), Downy mildew of onion (Peronospora destructor), Onion smudge (Colletotrichum circinans), Onion yellow dwarf potyvirus, Purple blotch (Alternaria porri), Smut (Urocystis sp.), Stem and bulb nematode (Ditylenchus dipsaci).

- Botrytis rot of onion (Botrytis allii) was confirmed in 78.56 acres of onions; the remaining acres were inspected and found apparently free from Botrytis rot of onion.
- Sclerotinia rot (Sclerotinia spp.) was confirmed in 29.22 acres of onions; the remaining acres were inspected and found apparently free from Sclerotinia rot.
- White rot of onion (Sclerotium cepivorum) was confirmed in 12.00 acres of onions; the remaining acres were inspected and found apparently free from White rot of onion.

Allium, Ornamental: 5.26 acres were submitted for inspection during the 2018 growing season. All fields inspected were found apparently free from Asparagus rust (Puccinia asparagi), Botrytis rot of onion (Botrytis allii), Botrytis stalk rot (Botrytis aclada), Downy mildew of onion (Peronospora destructor), Onion smudge (Colletotrichum circinans), Onion yellow dwarf potyvirus, Purple blotch (Alternaria porri), Sclerotinia rot (Sclerotinia spp.), Smut (Urocystis sp.), Stem and bulb nematode (Ditylenchus dipsaci), and White rot of onion (Sclerotium cepivorum).

Allium, Welsh Onion: 36.00 acres were submitted for inspection during the 2018 growing season. All fields inspected were found apparently free from Asparagus rust (Puccinia asparagi), Botrytis rot of onion (Botrytis allii), Botrytis stalk rot (Botrytis aclada), Downy mildew of onion (Peronospora destructor), Onion smudge (Colletotrichum circinans), Onion yellow dwarf potyvirus, Purple blotch (Alternaria porri), Sclerotinia rot (Sclerotinia spp.), Smut (Urocystis sp.), Stem and bulb nematode (Ditylenchus dipsaci), and White rot of onion (Sclerotium cepivorum).

Beans, Azuki/Adzuki: 561.00 acres were submitted for inspection during the 2018 growing season. In total, there were 992.00 acres inspected due to multiple inspection requirements for certain diseases. To meet requirements of IDAPA 02.06.25, Rules Governing the Planting of Beans Other Than Phaseolus Species in Idaho, all fields inspected were found apparently free from Asian soybean rust (Phakopsora pachyrhizi), Bean anthracnose (Colletotrichum lindemuthianum), Bean bacterial wilt (Curtobacterium flaccumfaciens), Common blight (Xanthomonas axonopodis pv. phaseoli), Fuscus blight (Xanthomonas fuscans pv. fuscans), and Halo blight (Pseudomonas savastanoi pv. phaseolicola).

- Brown spot (Pseudomonas syringae pv. syringae) was confirmed in 260.00 acres of Azuki Beans; the remaining acres inspected were found apparently free from Brown spot.

Beans, Dry: 1,121.40 acres were submitted for inspection during the 2018 growing season. In total, there were 2,945.80 acres inspected due to multiple inspection requirements for certain diseases. To meet requirements of IDAPA 02.06.06, Rules Governing the Planting of Bean Seed (Phaseolus) Species in Idaho, all fields inspected were found apparently free from Bean anthracnose (Colletotrichum lindemuthianum), Bean bacterial wilt (Curtobacterium flaccumfaciens), Common blight (Xanthomonas axonopodis pv. phaseoli), Fuscus blight (Xanthomonas fuscans pv. fuscans), and Halo blight (Pseudomonas savastanoi pv. phaseolicola).

- Brown spot (Pseudomonas syringae pv. syringae) was confirmed in 76.00 acres of Beans, Dry; the remaining acres inspected were found apparently free from Brown spot.

Beans, Faba: 0.01 acres were submitted for inspection during the 2018 growing season. In total, there were 0.03 acres inspected due to multiple inspection requirements for certain diseases. To meet requirements of IDAPA 02.06.25, Rules Governing the Planting of Beans Other Than Phaseolus Species in Idaho, all fields inspected were found apparently free from Asian soybean rust (Phakopsora pachyrhizi), Bean anthracnose (Colletotrichum lindemuthianum), Bean bacterial wilt (Curtobacterium flaccumfaciens), Brown spot (Pseudomonas syringae pv. syringae), Common blight (Xanthomonas axonopodis pv. phaseoli), Fuscus blight (Xanthomonas fuscans pv. fuscans), Halo blight (Pseudomonas savastanoi pv. phaseolicola), and Soybean anthracnose (Colletotrichum dematium),

Beans, Garden: 8,999.65 acres were submitted for inspection during the 2018 growing season. In total, there were 22,884.20 acres inspected due to multiple inspection requirements for certain diseases. To meet requirements of IDAPA 02.06.06, Rules Governing the Planting of Bean Seed (Phaseolus) Species in Idaho, all fields inspected were found apparently free from Bean anthracnose (Colletotrichum lindemuthianum), Bean bacterial wilt (Curtobacterium flaccumfaciens), Common blight (Xanthomonas axonopodis pv. phaseoli), Fuscus blight (Xanthomonas fuscans pv. fuscans), and Halo blight (Pseudomonas savastanoi pv. phaseolicola).

- Brown spot (Pseudomonas syringae pv. syringae) was confirmed in 216.00 acres of Beans, Garden; the remaining acres inspected were found apparently free from Brown spot.

Beans, Soybeans: 11.00 acres were submitted for inspection during the 2018 growing season (in total there were 11.00 acres inspected). To meet requirements of IDAPA 02.06.25, Rules Governing the Planting of Beans Other Than Phaseolus Species in Idaho, all fields inspected were found apparently free from, Asian soybean rust (Phakopsora pachyrhizi), Bean anthracnose (Colletotrichum lindemuthianum), Bean bacterial wilt (Curtobacterium flaccumfaciens), Brown spot (Pseudomonas syringae pv. syringae), Common blight (Xanthomonas axonopodis pv. phaseoli), Fuscus blight (Xanthomonas fuscans pv. fuscans), Halo blight (Pseudomonas savastanoi pv. phaseolicola), and Soybean anthracnose (Colletotrichum truncatum)

Beans, Trial Ground - Non-Phaseolus sp.: 1.25 acres were submitted for inspection during the 2018 growing season. In total, there were 6.25 acres inspected due to multiple inspection requirements for certain diseases. To meet requirements of IDAPA 02.06.25, Rules Governing the Planting of Beans Other Than Phaseolus Species in Idaho, all fields inspected were found apparently free from Asian soybean rust (Phakopsora pachyrhizi), Bean anthracnose (Colletotrichum lindemuthianum), Bean bacterial wilt (Curtobacterium flaccumfaciens), Brown spot (Pseudomonas syringae pv. syringae), Common blight (Xanthomonas axonopodis pv. phaseoli), Fuscus blight (Xanthomonas fuscans pv. fuscans), and Halo blight (Pseudomonas savastanoi pv. phaseolicola).

Beans, Trial Ground - Phaseolus sp.: 216.72 acres were submitted for inspection during the 2018 growing season. In total, there were 1,080.11 acres inspected due to multiple inspection requirements for certain diseases. To meet requirements of IDAPA 02.06.06, Rules Governing the Planting of Bean Seed (Phaseolus) Species in Idaho, all fields inspected were found apparently free from Bean anthracnose (Colletotrichum lindemuthianum), Bean bacterial wilt (Curtobacterium flaccumfaciens), Brown spot (Pseudomonas syringae pv. syringae), Common blight (Xanthomonas axonopodis pv. phaseoli), Fuscus blight (Xanthomonas phaseoli pv. fuscans), and Halo blight (Pseudomonas savastanoi pv. phaseolicola).

Brassicas, Canola and Rape Seed: 25.5 acres were submitted for inspection during the 2018 growing season. All fields inspected were found apparently free from, Black leg (Leptosphaeria maculans), Black rot of crucifers (Xanthomonas campestris pv. campestris), Club root of cabbage (Plasmodiophora brassicae), Crucifer bacterial leaf spot (Pseudomonas syringae pv. maculicola), and Stem canker (Leptosphaeria biglobosa)

Brassicas, Collards: 5.00 acres were submitted for inspection during the 2018 growing season. All fields inspected were found apparently free from Blackleg (Leptosphaeria maculans), Black rot of crucifers (Xanthomonas campestris pv. campestris), and Crucifer bacterial leaf spot (Pseudomonas syringae pv. maculicola).

Brassicas, Cress: 27.00 acres were submitted for inspection during the 2018 growing season. All fields inspected were found apparently free from Black rot of crucifers (Xanthomonas campestris pv. campestris).

Brassicas, Kale: 2.00 acres were submitted for inspection during the 2018 growing season. All fields inspected were found apparently free from Blackleg (Leptosphaeria maculans), Black rot of crucifers (Xanthomonas campestris pv. campestris), and Crucifer bacterial leaf spot (Pseudomonas syringae pv. maculicola).

Brassicas, Mustard: 60.00 acres were submitted for inspection during the 2018 growing season. All fields inspected were found apparently free from Blackleg (Leptosphaeria maculans), Black rot of crucifers (Xanthomonas campestris pv. campestris), and Crucifer bacterial leaf spot (Pseudomonas syringae pv. maculicola).

Brassicas, Pak Choi: 6.00 acres were submitted for inspection during the 2018 growing season. All fields inspected were found apparently free from Blackleg (Leptosphaeria maculans), Black rot of crucifers (Xanthomonas campestris pv. campestris), and Crucifer bacterial leaf spot (Pseudomonas syringae pv. maculicola).

Brassicas, Turnip: 83.00 acres were submitted for inspection during the 2018 growing season. All fields inspected were found apparently free from Blackleg (Leptosphaeria maculans), Black rot of crucifers (Xanthomonas campestris pv. campestris), and Crucifer bacterial leaf spot (Pseudomonas syringae pv. maculicola).

Carrot: 1,811.87 acres were submitted for inspection during the 2018 growing season (in total there were 1,801.27 acres inspected). All fields inspected were found apparently free from Alternaria leaf blight (Alternaria dauci) and Bacterial blight of carrot (Xanthomonas hortorum pv. carotae).

- Black rot of carrot (Alternaria radicina) was confirmed in 44.80 acres of Carrot; the remaining acres inspected were found apparently free from Black rot of carrot.

Catnip: 8.00 acres were submitted for inspection during the 2018 growing season. All fields inspected were found apparently free from Mint root borer (Fumibotys fumalis), Mint stem borer (Pseudobaris nigrina), and Verticillium wilt of mint (Verticillium dahliae).

Corn: 5,928.63 acres were submitted for inspection during the 2018 growing season. In total, there were 11,832.84 acres inspected due to multiple inspection requirements for certain diseases. All fields inspected were found apparently free from Brown spot (Physoderma maydis), Brown stripe downy mildew (Sclerophthora rayssiae var. zeae),

Crazy top of corn (Sclerophthora macrospora), Eyespot (Aureobasidium zeae), Goss's bacterial wilt (Clavibacter michiganensis spp. nebraskensis), Green ear downy mildew (Sclerospora graminicola), Head smut (Sporisorium reilianum), Java downy mildew (Peronosclerospora maydis), Late wilt (Harpophora maydis), Northern corn leaf spot (Cochliobolus carbonum), Philippine downy mildew (Peronosclerospora philippinensis), Sorghum downy mildew (Peronosclerospora sorghi), Southern corn leaf blight (Cochliobolus heterostrophus), Spontaneum downy mildew (Peronosclerospora spontanea), Stewart's wilt (Pantoea stewartii), Sugarcane downy mildew (Peronosclerospora sacchari), and Yellow leaf blight (Mycospharella zeae-maydis).

- Common smut (Ustilago maydis) was confirmed in 876.20 acres.
- High plains virus was confirmed in 123.25 acres.
- Fusarium wilt (Fusarium subglutinans) was confirmed in 21.90 acres.
- Pink ear (Fusarium verticillioides) was confirmed in 14.20 acres.

Corn to Australia: 77.90 acres were submitted for inspection during the 2018 growing season. In total, there were 155.80 acres inspected due to multiple inspection requirements for certain diseases. All fields inspected were found apparently free from Brown spot (Physoderma maydis), Brown stripe downy mildew (Sclerophthora rayssiae var. zeae), Crazy top of corn (Sclerophthora macrospora), Eyespot (Aureobasidium zeae), Goss's bacterial wilt (Clavibacter michiganensis spp. nebraskensis), Green ear downy mildew (Sclerospora graminicola), Head smut (Sporisorium reilianum), High plains virus, Java downy mildew (Peronosclerospora maydis), Late wilt (Harpophora maydis), Northern corn leaf spot (Cochliobolus carbonum), Philippine downy mildew (Peronosclerospora philippinensis), Sorghum downy mildew (Peronosclerospora sorghi), Southern corn leaf blight (Cochliobolus heterostrophus), Spontaneum downy mildew (Peronosclerospora spontanea), Stewart's wilt (Pantoea stewartii), Sugarcane downy mildew (Peronosclerospora sacchari), Wheat streak mosaic tritimovirus, and Yellow leaf blight (Mycospharella zeae-maydis).

- Common smut (Ustilago maydis) was confirmed in 38.00 acres.

Grain, Barley: 30.11 acres were submitted for inspection during the 2018 growing season. In total, there were 60.22 acres inspected due to multiple inspection requirements for certain diseases. All fields inspected were found apparently free from Smut (Urocystis sp.).

- Bacterial blight (Xanthomonas spp.) was confirmed in 0.19 acres.
- Bacterial leaf streak (Xanthomonas translucens) was confirmed in 3.05 acres; the remaining acres inspected were found apparently free from Bacterial leaf streak.

Grain, Oats: 0.65 acres were submitted for inspection during the 2018 growing season. In total, there were 1.30 acres inspected due to multiple inspection requirements for certain diseases. All fields inspected were found apparently free from Bacterial leaf streak (Xanthomonas translucens) and Smut (Urocystis sp.).

Grain, Sorghum: 64.00 acres were submitted for inspection during the 2018 growing season. In total, there were 128.00 acres inspected due to multiple inspection requirements for certain diseases. All fields inspected were found apparently free from Sorghum bacterial leaf streak (Xanthomonas campestris pv. holcicola) and Sorghum downy mildew (Peronosclerospora sorghi).

Grain, Wheat: 120.12 acres were submitted for inspection during the 2018 growing season. In total, there were 120.24 acres inspected due to multiple inspection requirements for certain diseases. All fields inspected were found apparently free from Bacterial leaf streak (Xanthomonas translucens) and Smut (Urocystis sp.).

Herbs, Oregano: 3.00 acres were submitted for inspection during the 2018 growing season. All fields inspected were found apparently free from Mint rust (Puccinia menthae).

Lettuce: 169.00 acres were submitted for inspection during the 2018 growing season. All fields inspected were found apparently free from Lettuce mosaic potyvirus (LMV).

Peas: 4,830.48 acres were submitted for inspection during the 2018 growing season. In total, there were 13,569.24 acres inspected due to multiple inspection requirements for certain diseases.

- Ascochyta foot rot (Phoma pinodella) was confirmed in 58.70 acre
- Bacterial blight of peas (Pseudomonas syringae pv. pisi) was confirmed in 259.56 acres; the remaining acres inspected were found apparently free from Bacterial blight of peas.
- Root and crown rot (Phoma medicaginis) was confirmed in 17.00 acres
- Root and stem wilt (Fusarium spp.) was confirmed in 40.00 acres.
- Sclerotinia rot (Sclerotina spp.) was confirmed in 34.00 acres

Peas, Trial Ground - Garbanzo Beans/Chick Peas: 0.49 acres were submitted for inspection during the 2018 growing season. In total, there were 0.98 acres inspected due to multiple inspection requirements for certain diseases. All fields inspected were found apparently free from Ascochyta blight of chickpeas (Ascochyta rabiei) and Leaf spot of chickpea (Colletotrichum dematium).

Pepper, Bell: 0.01 acres were submitted for inspection during the 2018 growing season. In total, there were 0.02 acres inspected due to multiple inspection requirements for certain diseases. All fields inspected were found apparently free from Angular leaf spot (Pseudomonas syringae pv. lachrymans), Bacterial canker (Clavibacter michiganensis pv. michiganensis), Bacterial spot (Xanthomonas vesicatoria), Cucumber mosaic cucumovirus (CMV), Pepper anthracnose (Colletotrichum spp.), and Phytophthora blight (Phytophthora capsici).

Peppermint: 134.50 acres were submitted for inspection during the 2018 growing season. In total, there were 269.00 acres inspected due to multiple inspection requirements for certain diseases. All fields inspected were found apparently free from Mint root borer (Fumibotys fumalis), Mint stem borer (Pseudobaris nigrina), and Verticillium wilt of mint (Verticillium dahliae).

Potato: 984.60 acres were submitted for inspection during the 2018 growing season.

Radish: 290.5 acres were submitted for inspection during the 2018 growing season. All fields were found apparently free from Bacterial blight of radish (Xanthomonas. campestris pv. raphani), Black rot of crucifers (Xanthomonas campestris pv. campestris), and Turnip/radish anthracnose (Colletotrichum higginsianum).

Sunflowers: 2,847.92 acres were submitted for inspection during the 2018 growing season. In total, there were 5,695.74 acres inspected due to multiple inspection requirements for certain diseases. All fields inspected were found apparently free from Downy mildew of Asteraceae (Plasmopara halstedii).

Acreage submitted for Inspection under the Idaho Rules for Phytosanitary and Post-Entry Certification, Rules Governing the Planting of Beans, Phaseolus Species, in Idaho and Rules Governing the Planting of Beans, Other Than Phaseolus Species, in Idaho for the 2018 Field Season

2018 Inspection Acres Report (compiled 1/02/19)

Crop	Number of Applications	Acres Submitted for Inspection	Number of Inspections Based on Diseases Requested	Actual acres Inspected
Alfalfa Total	74	1,411.80	1.00	1,411.80
Barley Total	35	130.11	2.00	60.22
Beans, Azuki Total	17	561.00	2.00	992.00
Beans, Dry	49	413.40	2.00	821.80
	18	708.00	3.00	2,124.00
Beans, Dry Total	67	1,121.40		2,945.80
Beans, Faba Total	1	0.01	3.00	0.03
Beans, Garden	381	4,097.25	2.00	8,177.00
	144	4,902.40	3.00	14,707.20
Beans, Garden Total	525	8,999.65		22,884.20
Beans, Soybeans Total	6	11.00	2.00	11.00
Beans, Trial Ground Non-Phaseolus Total	3	1.25	5.00	6.25
Beans, Trial Ground Phaseolus Total	50	216.72	5.00	1,080.11
Canola & Rape Seed Total	10	25.50	1.00	25.50
Carrot Total	398	1,811.87	1.00	1,801.27
Catnip Total	2	8.00	1.00	8.00
Chives Total	3	18.00	2.00	36.00
Collards Total	1	5.00	1.00	5.00
Corn	9	24.42	1.00	24.42
	707	5,904.21	2.00	11,808.42
Corn Total	716	5,928.63		11,832.84
Corn to Australia Total	5	77.90	2.00	155.80
Cress Total	2	27.00	1.00	27.00
Garlic Total	33	11.66	1.00	11.66
Grain Sorghum Total	11	64.00	2.00	128.00
Kale Total	1	2.00	1.00	2.00
Lettuce Total	21	169.00	1.00	169.00
Mustard Total	6	60.00	1.00	60.00
Oats Total	3	0.65	2.00	1.30
Onion	157	756.27	1.00	1750.57
	12	96.85	2.00	193.70
Onions Total	169	853.12		944.27
Oregano (Herb) Total	1	3.00	1.00	3.00
Ornamental Allium Total	3	5.26	1.00	5.26
Pak Choi Total	1	6.00	1.00	6.00
Peas	50	147.30	1.00	147.30
	19	387.60	2.00	775.20
	263	4,295.58	3.00	12,646.74
Peas Total	332	4,830.48		13,569.27
Peas, Garbanzo Bean/Chick Pea Trail Ground Total	2	0.49	2.00	0.98
Pepper, Bell Total	1	0.01	2.00	0.02
Peppermint Total	10	134.50	2.00	269.00
Potato Total	9	984.60	1.00	984.60
Radish Total	20	290.50	1.00	290.50
Sunflower	1	0.10	1.00	0.10
	34	2,847.82	2.00	5,695.64
Sunflower Total	35	2,847.92		5,695.74
Turnip Total	8	83.00	1.00	83.00
Welsh Onion Total	5	36.00	1.00	36.00
Wheat	3	120.00	1.00	120.00
	1	0.12	2.00	0.24
Wheat Total	4	120.12		120.24
Totals	2,590	30,757.15		65,662.63

Noxious Weed Free Forage and Straw (NWFFS)

In 1996, the United States Forest Service (USFS) began requiring all forage and straw possessed on their lands in Idaho to be certified as noxious weed free (NWF) to prevent the introduction and spread of noxious weeds. In March of 2011, the Bureau of Land Management (BLM) implemented the same rule in Idaho. ISDA administers this program to facilitate compliance for equine users and re-vegetation managers.

In 2018, ISDA trained sixty-nine people (the majority were NWFFS Inspectors) at seven sites; Private landowners and agency partners were also invited to this event.

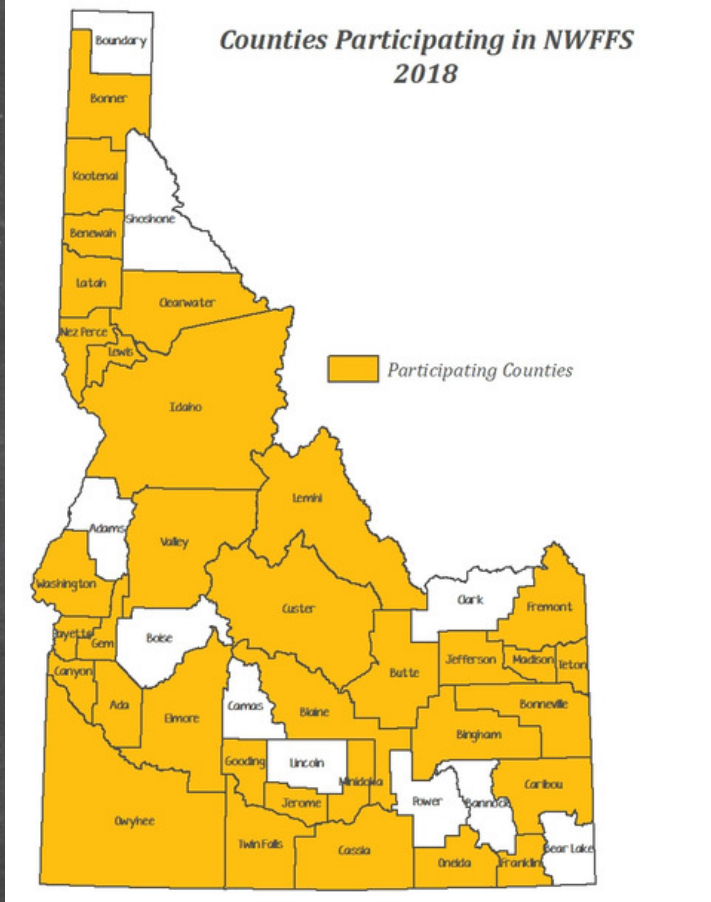
ISDA continues to partner with the Idaho Department of Fish and Game by supplying NWFFS information for their Big Game Hunting Regulations.

In 2018, 29,101 acres of forage and straw was inspected and certified NWF by trained County cooperators for a farm value of nearly $6.7 million. NWF products such as hay and straw bales, forage cubes, pellets, twice-compressed forage and straw bales make NWF products increasingly more accessible and available to equine recreationalists and land rehabilitators. Education continues to be a focus of the NWFFS program. ISDA distributes a NWFFS brochure geared to equine users to all interested groups. ISDA has an in-depth NWFFS website; please Google "ISDA Weed Free Hay". The NWFFS program plays an important role in protecting Idaho's wild places from noxious weed introduction. Above is a map of participating NWFFS counties.

ISDA continues to be a partner with the Idaho Hay and Forage Association (IHFA). ISDA has attended (and presented many times) their annual conference for the last thirteen years. In addition, the ISDA NWFFS Program Manager has participated on its board, as an ex-officio member for fourteen years.

Updated NWFFS Website to include:

- Sportsman Invasive Species website



ISDA Noxious Weed and Invasive Species Programs

Invasive species present a significant threat to the economy and environment of Idaho. The Idaho State Department of Agriculture (ISDA) administers the Invasive Species Program for the state, managing program activities that include watercraft inspection, invasive species surveys, invasive species education, and management of the state's Noxious Weed program.

Program Highlights

- Over 110,000 watercraft inspections were conducted in 2018.
- Over 600,000 watercraft inspections have been conducted in Idaho since the program began in 2009.
- 50 zebra/quagga mussel fouled vessels were intercepted in 2018.
- 245 zebra/quagga mussel fouled vessels have been intercepted in Idaho since the program began in 2009.
- Increased level of watercraft inspection station operations on numerous levels including:
    - Operation of two new inspection stations located at Hwy 12 "Kooskia",
    - Extend the hours of operation to "all daylight hours" at all inspection stations throughout the state,
    - 24-hour operation at the I-84 West Cotterell Watercraft Inspection Station,
    - 18-hour operations at the Cedars I-90 West, Malad I-15, North and Jackpot Hwy 93 North Watercraft Inspection Stations,
    - Cooperative agreement with the Bear Lake Regional Commission to support two Utah Watercraft Inspection Stations,
    - Addition of new law enforcement agreements for assistance statewide,
    - The operation of three roving inspection crews throughout the state.
- 1617 veliger samples for zebra/quagga mussel early detection monitoring were collected from over 80 waterbodies throughout the state in 2018.
- To date, no evidence of zebra or quagga mussels have been found in the waters of Idaho.

- To date, zebra/quagga mussels have not been observed anywhere in the waters of the Columbia River Basin, including Oregon, Washington, Wyoming, British Columbia, and Alberta.
- Over 180 acres of Eurasian watermilfoil were treated in 2016.
- The hydrilla eradication project has seen over a 95% reduction in plants in the last 4 years.
- The Noxious Weeds Cost Share program distributed $1,266,237 to CWMA programs statewide.
- ISDA's Noxious Weeds Cost Share Program had participation from 29 CWMAs, who treated over 167,000 acres of weed infestations throughout Idaho.
- Over 28,339 acres were certified under the Noxious Weed-Free Forage and Straw program.
- Iberian thistle and purple starthistle were added to the Noxious Weed list during the 2016 legislative session.

Watercraft Inspection

Prevention of aquatic invasive species (AIS) is a significant component of the program. The 2018 season was the tenth year of the watercraft inspection program, with 20 inspection stations operated statewide (Figure 1). In 2018, stations inspected 110,468 watercraft, a record number of watercraft originating from all across North America (Figure 2). The increase in inspection numbers was due, in part, to several factors including, extending station operation to cover daylight hours, 24-hour operation at I-84 West Cotterell, 18-hour operations at the Cedars I-90 West, Malad I-15 North, and Jackpot Hwy 93 North Watercraft Inspection Stations, lighted message boards, increased signage, operating additional inspection stations and contracting with law enforcement to assist with station compliance (Figure 3 on pg. 25).

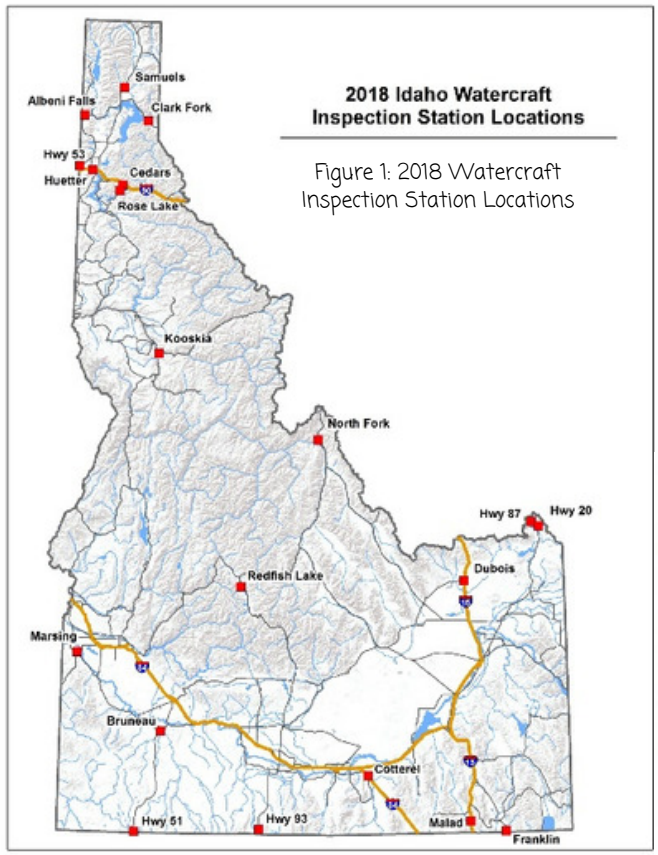


Figure 1: 2018 Watercraft Inspection Station Locations

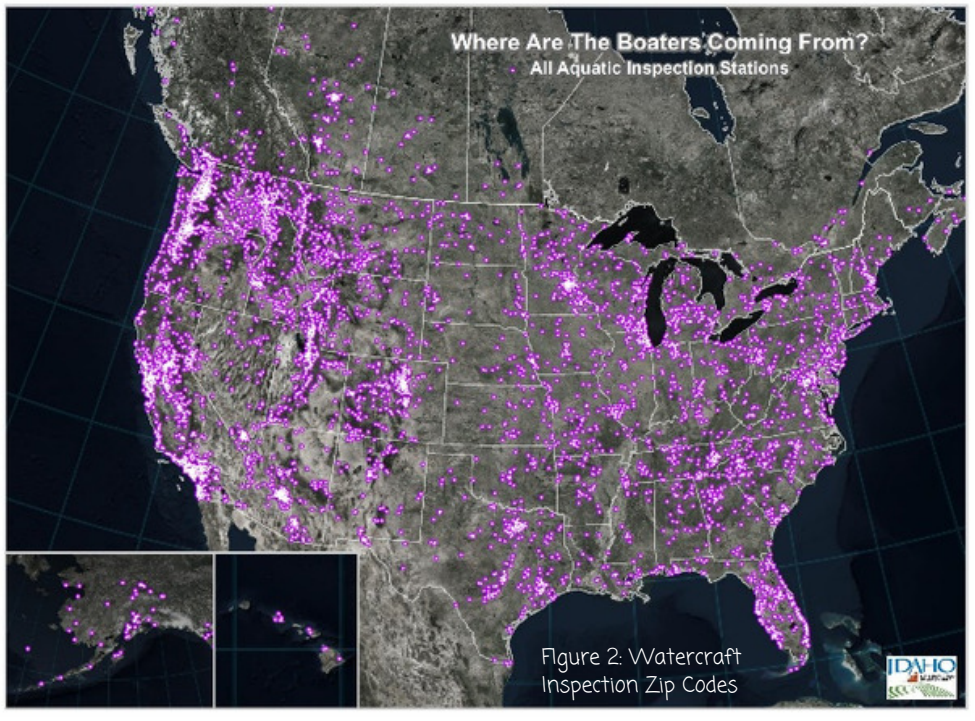


Figure 2: Watercraft Inspection Zip Codes

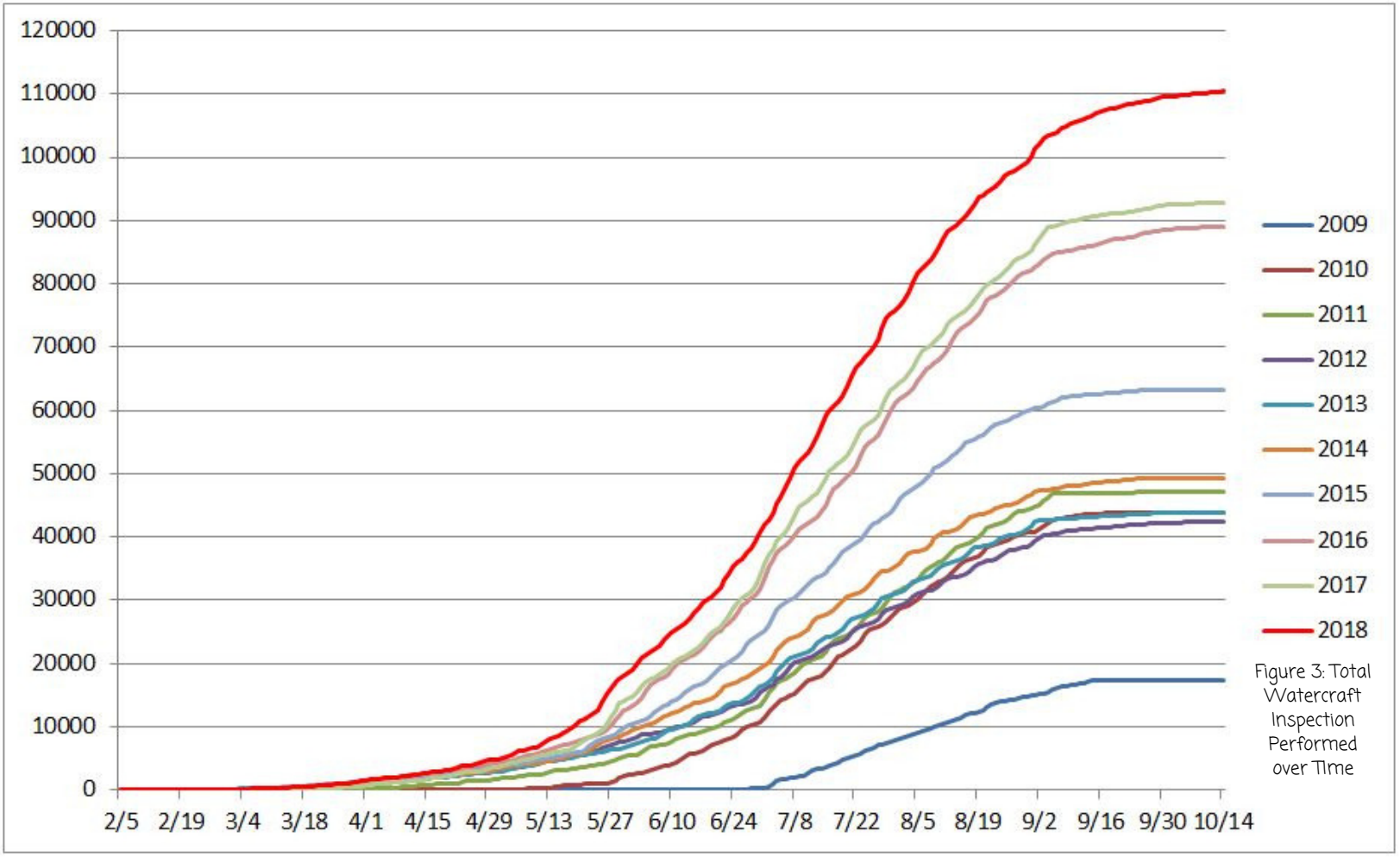


Figure 3: Total Watercraft Inspection Performed over Time

High Risk Inspections: 2,431 watercraft visited high-risk waters with zebra/quagga mussel infestations within the previous 30 days. Watercraft traveling from these areas represent the highest risk for transporting live zebra/quagga mussels into the state. Watercraft inspections at mussel-impacted waters are the most efficient and effective way to prevent the introduction of mussels into Idaho. In the Southwest; Utah and Nevada watercraft inspectors regularly inspect boats leaving the mussel-infested waters of Lakes Powell and Mead. However, watercraft leaving the mussel-impacted waters of Lake Havasu and Lake Pleasant are not usually inspected until they reach Idaho.

Vessels that were found to have recently been in mussel-impacted waters received a thorough high-risk inspection and hot wash to ensure that they were free of AIS. Following inspection, over half of these boats traveled to destinations in Idaho, with the remainder destined to locations throughout the western region.

Watercraft inspection information is available online at: http://invasivespecies.idaho.gov/maps/.

Mussel-Fouled Watercraft: 50 watercraft were intercepted transporting zebra or quagga mussels in 2018. These vessels originated from mussel-impacted waters in the Southwest, as well as from waters in Michigan, Wisconsin, and Texas (Appendix 2). Seven of these vessels were destined for Idaho, with the others heading to waters in the neighboring states. Vessels that were destined for Idaho were thoroughly decontaminated by ISDA staff and remained out of the water for a minimum of 30 days. A total of 245 mussel-fouled vessels have been intercepted in Idaho since the program began in 2009 (Figure 4, page 26).

Additional watercraft inspection data from the 2018 season is displayed on the ISDA Invasive Species Program website at: http://invasivespecies.idaho.gov/watercraft-inspection-stations/.

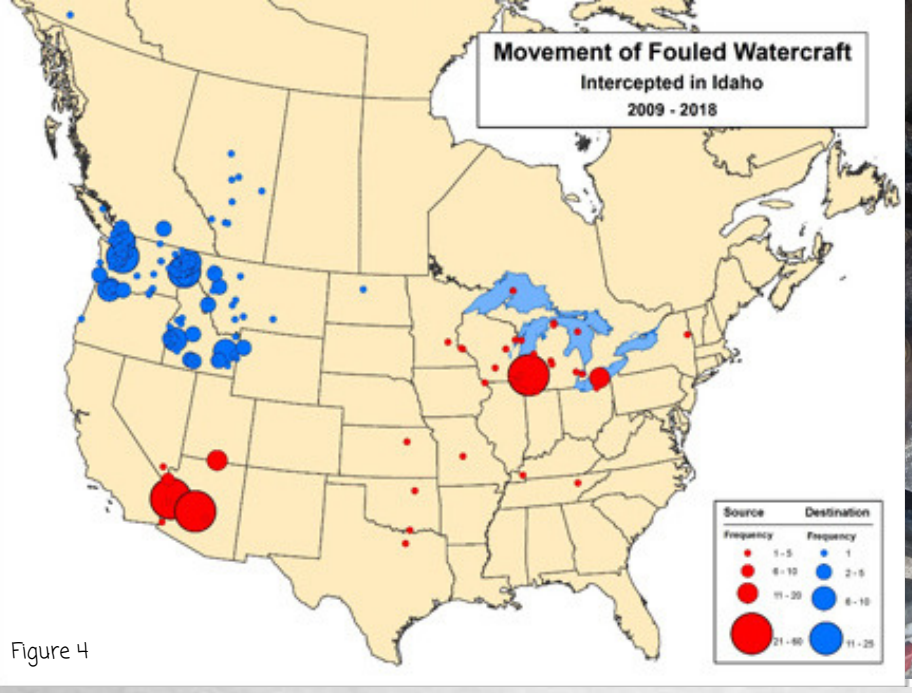


Figure 4

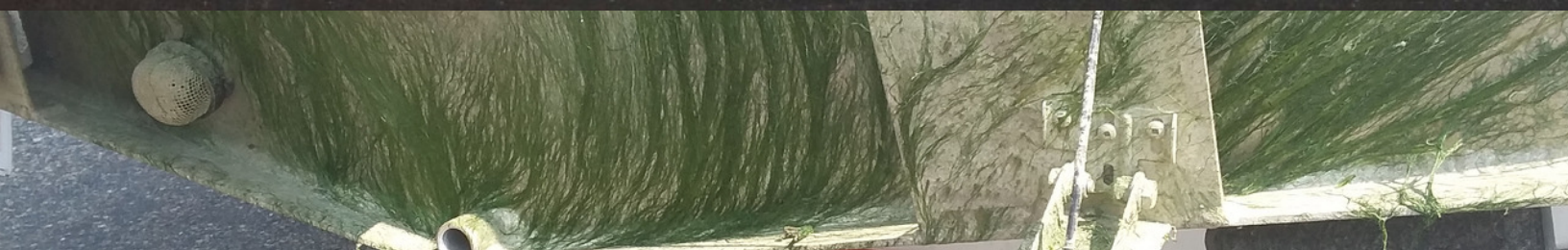
Idaho Watercraft Inspection Numbers by Station in 2018

Inspection Station	Inspections	Hotwash	Fouled	Weeds	Aquatic	Terrestrial
Albeni Falls	10,008	6	0	16	7	3
Brumeau	3,077	17	0	0	0	0
Cedars	13,662	132	13	90	81	9
Clark Fork	6,016	18	1	25	17	1
Cotterel	5,072	338	10	9	7	2
Dubois	1,373	1	0	0	0	0
Franklin	4,275	18	0	0	0	0
Huetter	14,645	16	1	89	66	18
Hwy 12 (Kooskia)	617	0	0	0	0	0
Hwy 20	7,299	2,810	0	23	21	1
Hwy 51 (Duck Valley)	324	3	0	0	0	0
Hwy 53	5,392	1	0	30	23	3
Hwy 87	7,197	2,764	0	13	13	0
Hwy 93	2,476	282	7	6	2	4
Malad	7,554	545	9	6	2	3
Marsing	2,169	24	3	13	7	6
North Fork	3,709	1	0	0	0	0
Redfish Lake	2,017	6	0	1	1	0
Rose Lake	3,613	5	0	14	10	3
Samuels	5,809	15	1	21	18	1
Roving Crew 1 (SW)	797	0	0	8	6	2
Roving Crew 2 (SE)	738	5	0	1	1	0
Roving Crew 3 (N)	835	0	0	9	6	3
Henrys Lake	1,794	0	0	0	0	0
ISDA Staff			5			
Total	110,468	7,007	50	374	288	59

CLEAN DRAIN DRY

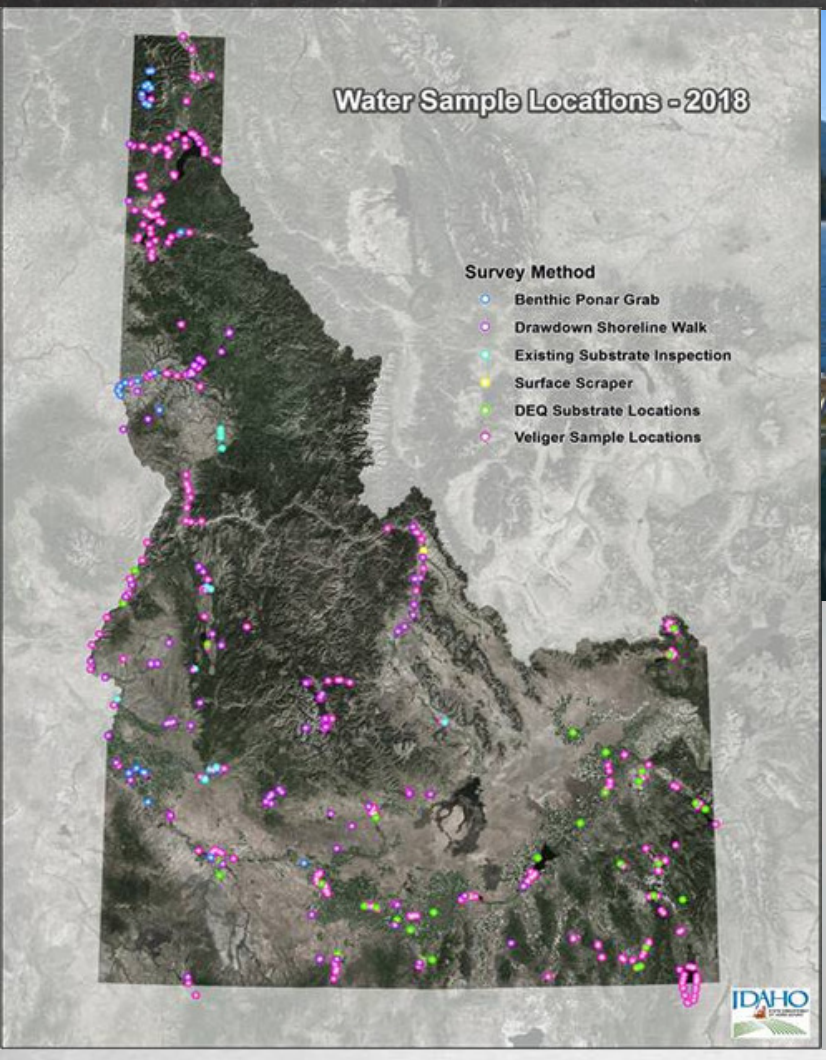
Summary of Mussel Fouled Vessels Intercepted in 2018

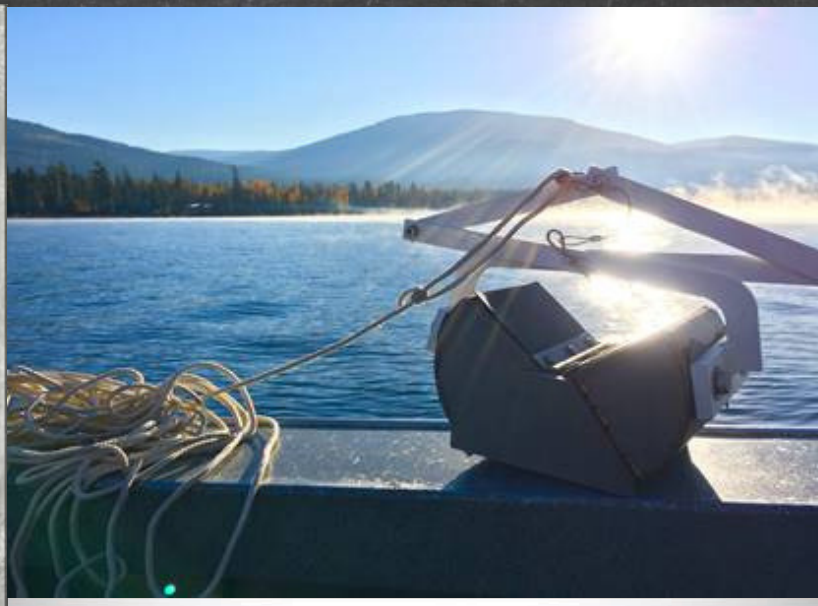
Fouled Boat #	Location Found	Orgin	Destination State	Date Found
1	Hwy 93	Lake Havasu, AZ	Montana	2/20/2018
2	Hwy 93	Lake Pleasant, AZ	Idaho	3/1/2018
3	Marsing	Imperial Reservoir, AZ	Idaho	3/9/2018
4	ISDA	Lake Pleasant, AZ	Idaho	3/20/2018
5	ISDA	Lake Pleasant, AZ	Idaho	3/20/2018
6	ISDA	Lake Pleasant, AZ	Idaho	3/20/2018
7	ISDA	Lake Pleasant, AZ	Idaho	3/20/2018
8	Marsing	Lake Havasu, AZ	Washington	3/22/2018
9	Malad	Lake Havasu, AZ	Montana	3/30/2018
10	Cedars	Pepin Lake, MN	Washington	3/31/2018
11	Malad	Lake Havasu, AZ	Idaho	4/3/2018
12	Malad	Lake Pleasant, AZ	Montana	4/14/2018
13	Cedars	Lake Huron, MI	Washington	4/20/2018
14	Malad	Lake Mead, NV	Idaho	5/2/2018
15	Hwy 93	Lake Mead, NV	Idaho	5/3/2018
16	Hwy 93	Lake Pleasant, AZ	Washington	5/5/2018
17	Cedars	Unknown, MI	British Columbia	5/5/2018
18	Cedars	Lake Erie, OH	Washington	5/10/2018
19	Malad	Lake Texoma, TX	Idaho	5/11/2018
20	Marsing	Lake Mohave, AZ	Washington	5/11/2018
21	Cotterel	Lake Michigan, MI	Washington	5/13/2018
22	Cotterel	Lake Powell, UT	Idaho	5/16/2018
23	Cotterel	Lake Powell, UT	Idaho	5/22/2018
24	Malad	Unknown, UT	Idaho	5/22/2018
25	Cotterel	Lake Erie, OH	Washington	5/23/2018
26	Hwy 93	Lake Mohave, AZ	Idaho	5/25/2018
27	Huetter	Lake Powell, UT	Idaho	6/7/2018
28	Cedars	Lake Michigan, MI	Washington	6/9/2018
29	Malad	Lake Powell, UT	Idaho	6/15/2018
30	Cedars	Lake Michigan, MI	Washington	6/15/2018
31	Cedars	Wabasha, MN	Washington	6/16/2018
32	Cotterel	Lake Michigan, MI	Idaho	6/23/2018
33	Cotterel	Unknown	Washington	6/24/2018
34	Cotterel	Lake Michigan, MI	Washington	6/25/2018
35	Cedars	Lake Michigan, MI	Idaho	6/25/2018
36	Cedars	Lake Michigan, MI	British Columbia	6/29/2018
37	Clark Fork	Lake of the Ozarks, MO	Idaho	7/3/2018
38	Malad	Lake Powell, UT	Washington	7/3/2018
39	Cedars	Lake Michigan, IL	Washington	7/7/2018
40	Hwy 93	Lake Mohave, AZ	Idaho	7/10/2018
41	Cotterel	Lake Powell, UT	Oregon	7/13/2018
42	Cedars	Lake Erie, OH	Washington	7/19/2018
43	Samuels	Muskegon River, MI	Washington	7/21/2018
44	Hwy 93	Las Vegas, NV	British Columbia	8/2/2018
45	ISDA	Lake Powell, UT	Idaho	8/12/2018
46	Cotterel	Milford Lake, KS	Washington	8/29/2018
47	Malad	Lake Mead, NV	Alaska	9/27/2018
48	Cedars	Lake Erie, OH	Oregon	10/4/2018
49	Cedars	Lake Michigan, WI	Washington	10/6/2018
50	Cotterel	Ohio River, PA	Washington	10/23/2018

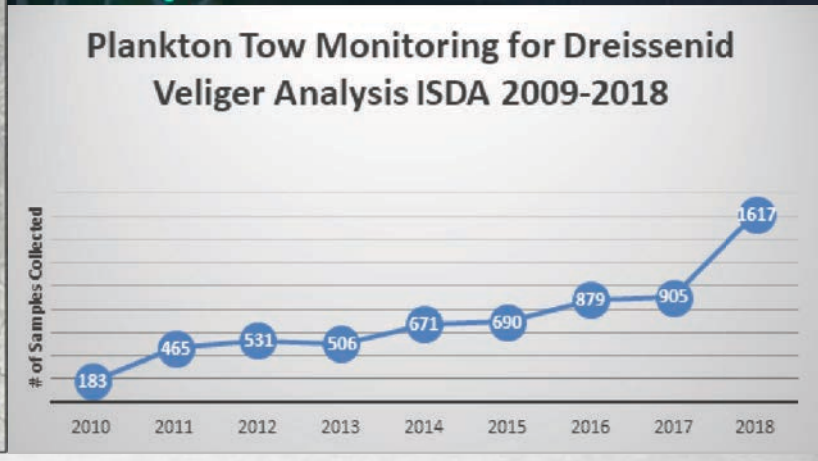


Invasive Species Early Detection Monitoring

ISDA's early detection monitoring program collected 1617 plankton samples from 80 waterbodies in Idaho in 2018. A number of partners also assist with mussel early detection monitoring including the Idaho Department of Environmental Quality (DEQ), The Shoshone Piute Tribe, The Coeur d'Alene Tribe, Idaho Power Company, Lemhi County, US Army Corps of Engineers, US Forest Service, lake associations, and various canal companies and irrigation districts throughout the state. To date, no evidence of mussels has been found in Idaho or anywhere in the Columbia River Basin.







Education

Education is a major component of the ISDA invasive species prevention program. Watercraft inspection stations play an important role in education through one-on-one interaction with the public and reinforcing the "Clean, Drain, Dry" message. Inspectors also provided a variety of invasive species-related educational materials to the public.

ISDA staff participated in a number of events this season which helped educate user groups and the boating public on invasive species issues and the importance of "Clean, Drain, Dry." Events included the Saint Maries Jet Boat Races, the Twin Falls County Fair, the Idaho State Fair, the Idaho Horticultural Show, the Boise River Bash, the BREN River Boogie, 2018 Science Olympiad Tournament, and the American Falls Bowfishing Tournament. Staff provided 18 watercraft inspection trainings, educating over 100 individuals on the threats of invasive species and watercraft inspection protocols. Staff also presented on invasive species issues to noxious weed professionals, counties, tribes, master naturalists, angling groups, marine deputies, ITD Port of Entry staff, DEQ staff, IDFG staff, lake associations, and student groups.

ISDA also unveiled a new Invasive Species of Idaho website with the help of the marketing expertise of Drake Cooper. Two additional campaign messages were created, "Knock it Off" and "Know What You Grow," to add to established messages already in use, "Clean-Drain-Dry", "Don't Let It Loose", and "Buy It Where You Burn it." An Invasive Species of Idaho Facebook page was also created and is being utilized to promote important campaign messages, form collaborative relationships, share ideas and articles, and drive internet traffic to the website for more detailed information. Other platforms utilized to drive traffic to the website included: radio spots, banner ads, and Pandora radio commercials. The Invasive Species of Idaho website had over 39,000 visits in 2018 and over 85,000 page views.

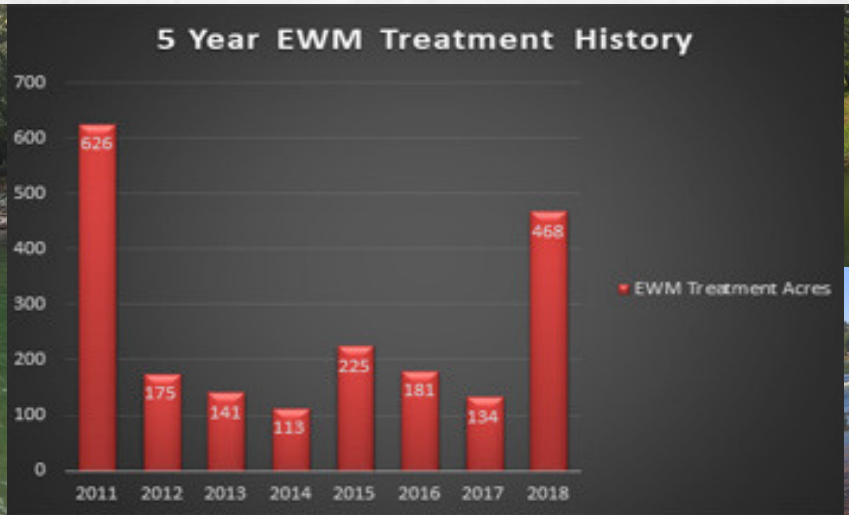
Idaho Invasive Species Council

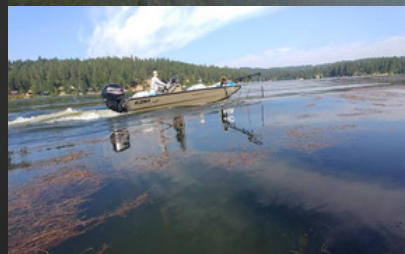
The Idaho Invasive Species Council (IISC) was created by Executive Order in 2001 as a forum for coordinating invasive species related efforts and initiatives in the state.

Executive Order 2017-05 replaces Executive Order 2010-14, to continue this coordinated effort. The IISC holds biannual meetings for discussions and project updates. An updated copy of the IISC Strategic Plan is available online at: https://invasivespecies.idaho.gov/idaho-invasive-species-council/

Eurasian Watermilfoil

Eurasian watermilfoil (EWM) is one of the most problematic invasive aquatic plants in North America. EWM out-competes native vegetation and degrades aquatic habitats by reducing biodiversity. EWM forms dense canopies of growth throughout the water column which can make boating and fishing impossible, as well as degrade property values. In 2018, 467.56 acres of EWM were treated with herbicide in Hayden, Cocolalla, and the Pend Oreille River. 4,100 lbs. of EWM plant material was also hand removed in Hayden, Cocolalla and Priest Lake in low density areas. To date, no EWM has been found in Eastern Idaho.





Hydrilla

Hydrilla is considered the worst submersed aquatic plant in North America. It is an EDRR noxious weed in Idaho and an eradication program has been ongoing in the Bruneau and Boise area since 2008. Hydrilla densities have decreased significantly over the course of the program, and no downstream spread of hydrilla has been observed. Plant surveys in 2018 found a decrease of overall hydrilla occurrence of 99.3% in the Bruneau River population with only 26 plants found, and 0 plants have been found in the Boise population for three consecutive years.

Several new populations of hydrilla were identified in the Twin Falls and Buhl area in 2015. These populations are associated with geothermally-influenced aquaculture facilities and these areas are currently undergoing monthly treatments. Survey and eradication efforts began in 2016 and by 2017, significant decreases are already being observed. Management approaches have mirrored efforts in the Bruneau area and include manual, mechanical, and biological controls. 2018 data for Twin Falls county continues to record decreases from what was observed in 2016 and to date, no hydrilla has been found outside of the thermal water areas, including downstream in the Snake River.

Flowering Rush

Flowering rush is a submersed/emergent noxious weed that is expanding in Idaho. It forms dense growth and causes significant problems for boating and irrigation systems. ISDA has been involved with several flowering rush treatment projects, while attempting to identify effective treatment methods.

Effective treatment methods are currently being developed and refined to provide effective tools for flowering rush management. In 2018 ISDA surveyed known population areas to accurately capture the infestation of Flowering rush in the state of Idaho. Survey crews were tasked with surveying two primary areas; Pend Oreille Basin and the Snake and Blackfoot River from Gem Lake downstream. This resulted in 78 miles of river and shoreline being surveyed with 1,755 survey points collected.

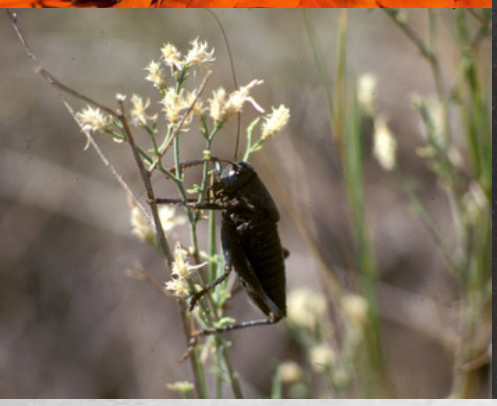
Plans are being made for the 2019 season to survey additional waterways where there is potential of additional infestations to complete the Idaho wide survey. Plans are also being developed to task divers to remove flowering rush from newly infested areas.

CWMA Cost Share Program

ISDA has continued to provide leadership, training, and support to Cooperative Weed Management Areas (CWMAs) throughout the state. These CWMAs are comprised of county governments, federal partners, Native American Tribes, and private landowners. CWMAs work cooperatively to combat noxious weed infestations across agency and jurisdictional boundaries. Their efforts help to protect wildland habitat, ecosystem diversity, recreational opportunities, and agriculture in Idaho.

In 2018, ISDA awarded over $1.2 million dollars in cost share grants to 29 participating CWMAs. The CWMA cost share participants provided over $4 million dollars in matching contributions, and treated over 101,000 acres of noxious weed infestations. These treatments include chemical, mechanical, cultural, and biological control methods. Cost share revenues also contributed to the mapping and monitoring of over 500 thousand acres of previously uncharted lands. CWMA's also started to incorporate revegetation work to try and help Idaho lands to recover from the invasion of noxious weeds; CWMA's re-habilitated over 1,933 acres in 2018. The CWMAs also helped to educate citizens about the threat of noxious weeds, and they reached over 683,102 people in 2018. Table below are the CWMA cost share totals for 2018.

CWMA	Total Award	Total Inkind	Total Acres Treated (CH)	Total Acres Treated (MCH)	Arced Bio Control	Acres Inventoried	Acres Revege	Public Contacts
Adams	$33,075.00	$104,304.00	8000	600	75	4500	0	80
Blaine	$5,250.00	$13,818.00	152	0	1000	1050	0	120000
Boise Basin	$3,045.00	$247,307.00	655	0	0	0	0	61
Camas Creek	$44,226.00	$66,645.00	12948	0	100	3000	30	50
Clearwater Basin	$48,090.00	$83,492.00	1997	0	50	5723	185	2057
Continental Divide	$55,331.98	$169,464.00	3347	50	19	27000	45	600
Eastern Owyhee	$70,907.79	$104,708.00	5272	5750	0	0	100	3500
Frank Church	$38,850.00	$134,770.00	72	0	0	480	0	20
Henry's Fork	$49,507.50	$212,094.00	3112	0	0	3112	0	250
Highlands	$86,106.30	$38,088.00	1600	0	0	4000	0	3750
Inland Empire	$66,811.35	$95,092.00	3609	479	25	4628	138	177308
Jordan Valley	$34,125.00	$122,305.00	1013	0	0	120000	0	4500
Lemhi	$50,820.00	$65,067.00	704	0	46	1790		2202
Lost Rivers	$9,645.30	$46,572.00	317	0	0	0	0	16
Lower Gem	$7,350.00	$58,754.00	558	0	110	9691	0	107
Lower Weiser	$11,602.50	$372,989.00	1927	0	175	7300	0	276302
Northside Tri-County	$21,000.00	$100,875.00	3012	0	10	0	0	238
Norhtwest Owyhee	$36,750.00	$44,972.00	1200	1000	0	5000	0	200
Palouse	$49,402.50	$99,047.00	839	5	70	4500	45	185
Payette County	$13,650.00	$60,863.00	515	0	0	0	0	110
Power	$28,350.00	$51,946.00	1064	0	5	30000	65	3000
Selkirk	$24,150.00	$132,258.00	2318	332	175	9680	105	14000
Shoshone Basin	$37,500.75	$47,280.00	1892	0	85	305475	1200	50000
Upper Payette	$32,602.50	$247,307.00	22608	0	0	0	0	384
Upper Snake	$58,375.67	$177,419.00	4254	0	0	4481	0	20000
Utah-Idaho	$284,388.10	$311,792.00	7918	0	20	1000	20	4182
Totals	$1,200,913.24	$3,209,228.00	90,903	8,216	1,965	552,410	1,933	683,102



ISDA and USDA Cooperative Rangeland Grasshopper and Mormon Cricket Suppression Program

Grasshoppers and Mormon crickets continue 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) and 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 the Idaho State Department of Agriculture (ISDA) and our cooperators at USDA and APHIS. Congress has addressed this issue with special funding to the impacted states of Idaho, Utah, and Nevada. With this funding, ISDA has made pesticides available to landowners to control these pests. To qualify to receive these pesticides, a landowner must file a "Request for Evaluation of Need for Suppression of Grasshoppers or Mormon Crickets in Idaho", more commonly known as the Complaint Form, with ISDA. Once the Complaint form has been received, ISDA will evaluate their land to determine if the site has reached economic damage thresholds.

Background

Sixty-four percent of Idaho lands are managed by the Federal Government. Forty-three percent (21.8 million acres) of Idaho is classified for use as rangeland. The Bureau of Land Management (BLM) manages 11.8 million acres in Idaho, and much of that land is prime grasshopper/ Mormon cricket habitat. There is a significant area of grasshopper and Mormon cricket habitat on federal lands that border private rangeland and irrigated cropland in the state. Mormon crickets and grasshoppers (primarily about six species) are cyclical economic pest problems, particularly in Southwestern Idaho. In recent years, significant outbreaks have also occurred in Northern, North-Central, South-Central, and Eastern Idaho.

The grasshopper and Mormon cricket program is divided into four (4) regions: Northern (N), Southwestern (SW), South-Central (SC), and Eastern (E), with offices in Coeur d' Alene and Moscow (N), Boise (SW), Twin Falls (SC), and Idaho Falls (E). For fiscal years 2017-2019, ISDA has a statewide contract for Drexel 5% Carbaryl bait.

ISDA utilizes electronic data collection to maintain an electronic record of incoming complaints and the evaluation of properties. The electronic complaint form continues to be posted on the ISDA Grasshopper/Mormon cricket website and has been utilized by many landowners. In 2018, ISDA transitioned from paper (triplicate) Bait Distribution Forms to recording this information on electronic tablets. The data collection tools used in the field has improved efficiency by allowing data to be entered into the system once and providing a structured way to track complaints (and responses) and bait distribution. In addition, GIS points are available to identify known Threatened and Endangered Species locations that could impact treatment options.

Carbaryl 5% bait (referred as "bait") was the only insecticide distributed to landowners, and applied by ISDA ground treatment staff. The bait was stored at eight different locations around the state. When bait was not the most effective insecticide for grasshopper control, ISDA reimbursed landowners for insecticide and adjuvant costs on a case-by-case basis.

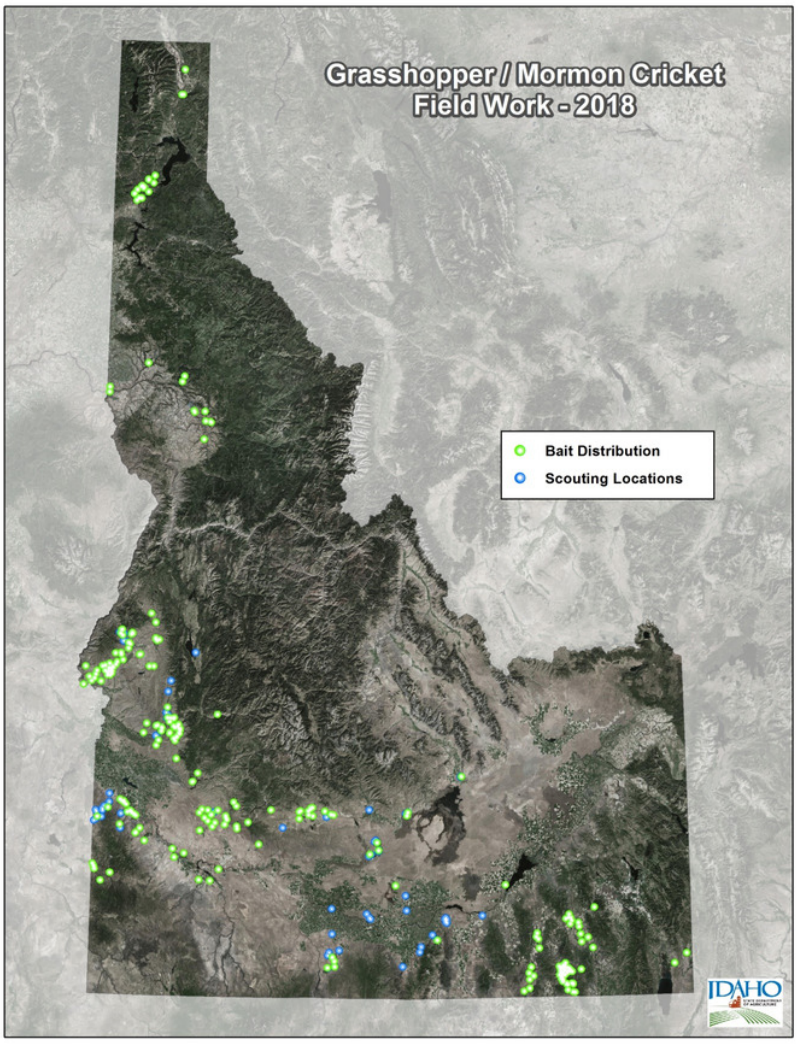
University of Idaho Extension offices in Elmore, Franklin, Idaho, Nez Perce, and Latah counties continued to be strong partners in the program, fielding complaints using the new electronic forms and forwarding them to ISDA. County Weed Control offices in Elmore, Franklin, Gem, Oneida, and Kootenai Counties agreed to store and distribute bait to approved landowners on behalf of the ISDA.

The ISDA seasonal temporary Pest Detection Specialists (PDS) were located across the state in strategic locations to respond to complaints and survey known infestation areas. APHIS and ISDA offices in Boise and Twin Falls continued to work together by sharing scouting information.

Summary of Grasshopper Actions Statewide

Statewide, there were 254 landowner complaints, and 121,660 lbs of bait were distributed to landowners in 25 counties; more than the total of 69,630 lbs that was distributed in 2017. In addition to the bait that was distributed through the ISDA, we also reimbursed five landowners for insecticides that they purchased and applied on their own. No county or state road Rights-Of-Way were treated by the ISDA for grasshopper infestations. ISDA was able to scout 84 sites statewide and conduct surveys for both grasshoppers and Mormon crickets simultaneously. ISDA continues to work with the United States Fish and Wildlife (USFW) Service and Idaho Fish and Game (IDFG) to avoid treatment near endangered species.

In Southwestern and South-Central Idaho, the three most common grasshoppers are: Clear-winged Grasshopper (Camnula pellucida), Two-striped Grasshopper (Melanoplus bivittatus) and Migratory Grasshopper (Melanoplus sanguinipes). The map to the right, details the geographic location of surveying and evaluations of both grasshopper & Mormon cricket complaints combined.



Summary of Grasshopper Actions by Region

North Idaho

Northern Idaho received less precipitation than normal during the winter and spring (January 1 to June 30). The month of May and June received below normal precipitation which coincided with grasshopper hatching; however, May and June were cooler than normal. The first day above 50 °F; the temperature at which grasshopper development begins; was on February 8th , much earlier than the 30 year average of March 2nd; however, it did not consistently get over 50°F until the second week in April. The first grasshopper complaint was received on May 29th.

There were 42 complaints across 7 counties; of those 36 met the ISDA requirements and wished to receive assistance in the form of bait. Total bait distribution in Northern Idaho was 6,780 lbs; which was less than the 7,040 lbs that were distributed in 2017. Kootenai County received over half of the complaints.

Northern Idaho Private Landowner Grasshopper Complaints and Bait Distribution

County	Number of Complaints	Number of Landowners that received Bait	Bait Distributed (lbs)
Bonner	1	1	280
Boundary	4	3	760
Clearwater	5	5	600
Idaho	7	6	1,380
Kootenai	22	18	3,360
Latah	1	1	200
Nez Perce	2	2	200
Totals	42	36	6,780

Southwestern Idaho Private Landowner Grasshopper Complaints and Bait Distribution

County	Number of Complaints	Number of Landowners that received Bait	Bait Distributed (lbs)
Ada	2	2	200
Adams	8	7	2,160
Boise	18	16	7,120
Camas	14	13	4,080
Elmore	17	15	13,080
Gem	16	16	9,600
Owyhee	8	8	11,760
Washington	7	6	4,800
Totals	90	83	52,800

Southwestern Idaho

Southwestern Idaho received normal precipitation during the winter and spring. It was dramatically (7°F) warmer than normal in January, however, the remainder of the winter and spring months were normal, with exception of May which was warmer than normal. The first day above 50 °F was on January 12th, which is much earlier than the 30 year average of March 2nd and there were many days that month above that temperature. Scouting began in Washington County in early April; however, the first grasshopper complaint was not received on May 9th in the Grandview area in Owyhee County.

There were a total of 90 complaints across 7 counties, and 83 of those complaints met the ISDA threshold requirements and wished to receive assistance in the form of carbaryl bait. The total bait distribution in Southwestern Idaho was 52,800 lbs; which was more than the 49,110 lbs of bait that were distributed in 2017. Elmore and Owyhee County saw the most activity for the Southwestern Idaho area this year. Camas County had widespread complaints in Fairfield. In addition, there were two landowner reimbursements in Southwestern Idaho, with applications totaling 57 acres.

South-Central Idaho

South-Central Idaho received normal precipitation during the winter and spring, but, April and June were below average. May was the out-lier, and had above precipitation. It was warmer than normal in January, May (main month for hatching), and June. The first day above 50 °F was on January 12th, which is much earlier than the 30 year average of March 15th and there were many days that month above that temperature. Scouting began the first week of May, and the first complaint was received in Burley, in Cassia County on June 13th.

There were 15 complaints across 5 counties, and 13 of those met the ISDA requirements and wished to receive assistance in the form of carbaryl bait. Total bait distribution in South-Central Idaho was 13,520 lbs; which was nearly the same for the 2017 total of 13,280 lbs. There were two landowner reimbursements totaling 166 acres.

The state range-land in the Cotterell area, located adjacent to the junction of Highway 84 and Highway 86 in Cassia County, was treated with Dimilin 2L in 2016 (6,626 acres) and was surveyed frequently in 2018. The grasshopper population in this area stayed well below the economic threshold.

South-Central Idaho Private Landowner Grasshopper Complaints and Bait Distribution

County	Number of Complaints	Number of Landowners that received Bait	Bait Distributed (lbs)
Blaine	2	2	2,800
Butte	1	1	600
Cassia	2	1	800
Lincoln	5	5	5,160
Twin Falls	5	4	4,160
Totals	15	13	13,520

Eastern Idaho Private Landowner Grasshopper Complaints and Bait Distribution

County	Number of Complaints	Number of Landowners that received Bait	Bait Distributed (lbs)
Bannock	15	14	10,840
Bear Lake	2	2	1,760
Franklin	1	0	0
Oneida	85	68	33,800
Power	3	2	2,160
Totals	106	86	48,560

Summary of ISDA Grasshopper Program

In summary, the cost of insecticides to assist landowners increased in 2018; from $66,654.17 in 2017 to $105,269.54 for 2018.

The amount of bait used in 2018, 121,660 lbs, was more than the 76,090 lbs that were distributed in 2017. Landowner reimbursement costs in 2018, $5,630.00, were less than the 2017 total of $9,627.20.

Pesticides Distributed/Reimbursed Statewide for Grasshopper Control

	Lbs ($.819 lb)	Value
Carbaryl 5% Bait, Ground	121,660	$99,639.54
Landowner Reimbursement Program (this program reimburses only the insecticide & adjuvant costs) Ground & Aerial Application		$5,629.71
Total		$105,269.25

Eastern Idaho

Eastern Idaho received less precipitation than normal during the winter and spring, especially in May and June, during hatching, which may explain the high populations this year in South East Idaho. Temperatures were normal with the exception of January which was dramatically warmer (10°F) and slightly warmer than normal in May. The first day above 50 °F was on January 18th, which is much earlier than the 30 year average of March 19th; however, it did not get consistently over that temperature until early February. Scouting began in mid-May, and the first complaint was received on June 5th in Malad, which is located in Oneida County.

Oneida and Southern Bannock County experienced high levels of grasshoppers invading irrigated crops and rangeland. ISDA declared these two counties as outbreak areas which facilitated rapid distribution of bait. Bait was distributed from the Oneida County Road and Bridge facility. There were 106 complaints in this region, and 86 landowners met the ISDA requirements and wished to receive assistance in the form of carbaryl bait. The total bait distribution in Eastern Idaho was 48,560 lbs; which was an increase from the 200 lbs of bait distributed in 2017. There was one landowner reimbursement totaling 435 acres.

Summary of Mormon Cricket Actions Statewide

Southwestern Idaho was the only region in the state that received Mormon cricket complaints. Southwestern Idaho received normal precipitation during the winter and spring. It was dramatically (7°F) warmer than normal in January, however, the remainder of the winter and spring months were normal, with exception of May which was warmer than normal. In Southwestern Idaho, the first day over 41°F (temperature at which Mormon cricket development begins) was January 5th, which is much earlier than the 30 year average of February 4th and every day after that (except one) was above that temperature for the rest of the month. The first complaint was received on April 5th in Washington County in Weiser and scouting began the next day in that county.

In Southwestern Idaho, there were 113 landowner complaints, of those, 98 landowners met the ISDA requirements and wished to receive assistance in the form of carbaryl bait. The total bait distribution in Southwestern Idaho in 2018 was 126,800 lbs; which was an increase from the 2017 total of 76,430 lbs.

Washington, Owyhee and Elmore Counties were where most of the activity occurred. In Washington County outbreaks were concentrated north of Weiser; where three large ranches hired an aerial applicator to apply 12,000 lbs of bait; Manns Creek Reservoir, Midvale, and Cambridge. Over 79,000 lbs were distributed in this county alone.

In Owyhee County outbreaks were concentrated in Murphy, Melba, Givens Hot Springs, and Reynolds; over 27,000 lbs of bait was distributed in this County.

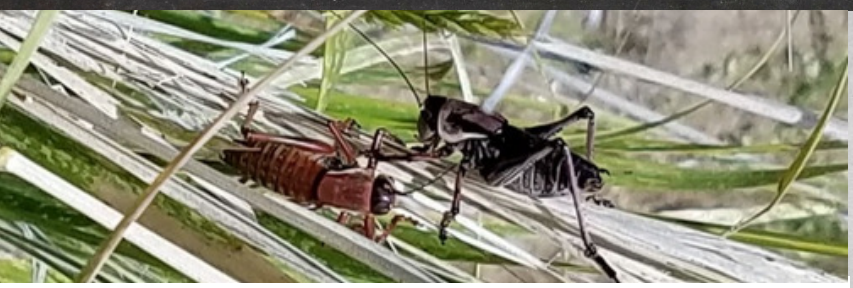
In Elmore County, outbreaks were concentrated in Mountain Home, Prairie, and Mayfield. Nearly 14,000 lbs were distributed in this County.

ISDA ground treated 40 miles (1,040 lbs) of Right-Of-Way on State Highway 95 on July 2, 2018 near the Idaho/Oregon state line. To treat these highway areas, ISDA worked with the Idaho Transportation Department (ITD) to secure permits and ITD lent roadside signs and APHIS provided a shadow vehicle, during treatment.

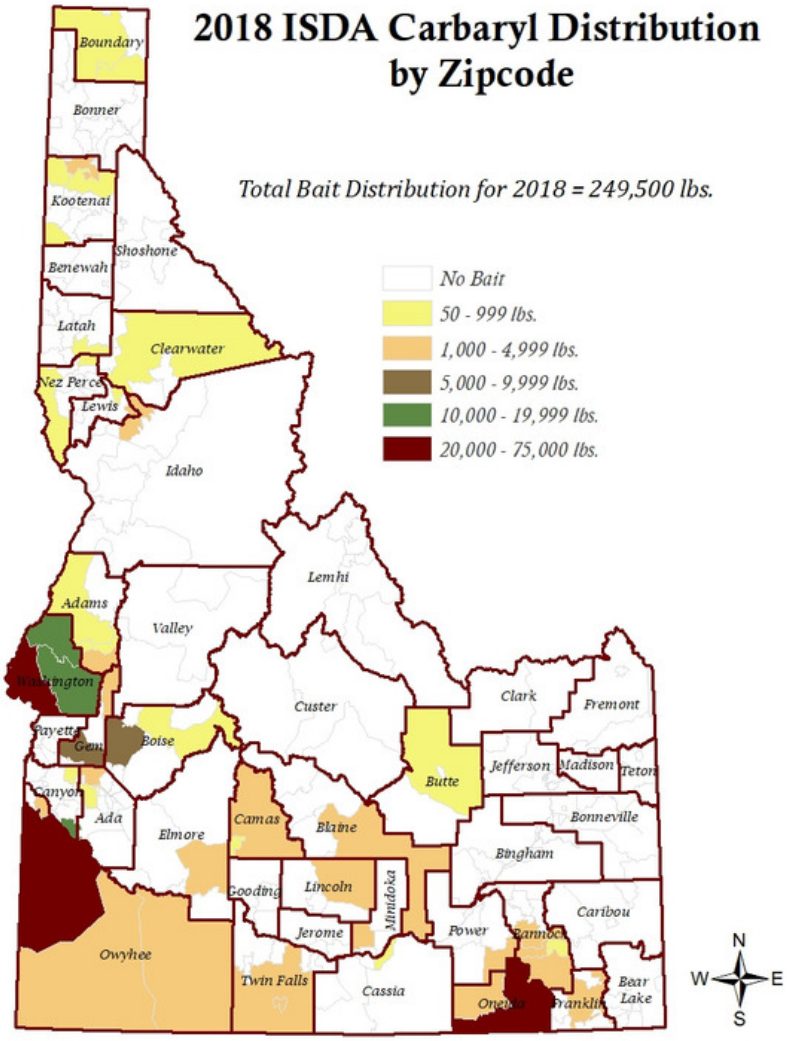
In summary, the cost of insecticide distribution increased in 2018 ($104,700.96) from 2017 ($64,856.61). This increase is a result of the large outbreaks in Washington, Owyhee, and Elmore Counties.

Southwestern Idaho Mormon Cricket Complaints and Bait Distribution

County	Number of Complaints	Number of Landowners that received Bait	Bait Distributed (lbs)
Ada	1	1	200
Boise	2	2	520
Elmore	16	14	13,720
Gem	3	3	5,800
Owyhee	34	25	27,440
Washington	57	53	79,120
Totals	113	98	126,800



2018 ISDA Carbaryl Distribution by Zipcode



2018 Pesticides Distributed Statewide for Mormon Cricket Control

	Lbs ($.819 lb)	Value
Private Landowners	126,800	$103,849.20
State Land and Right-of-way Treatment	1,040	$851.76
Total	127,840	$104,700.96

Summary of ISDA Grasshopper and Mormon Cricket Program

In 2018, ISDA continued to suppress outbreaks of grasshoppers and Mormon crickets. There were 367 complaints and 306 private landowners in 24 counties that received assistance in the form of bait. A breakdown of the pesticides distributed and/or reimbursed are in the table below.

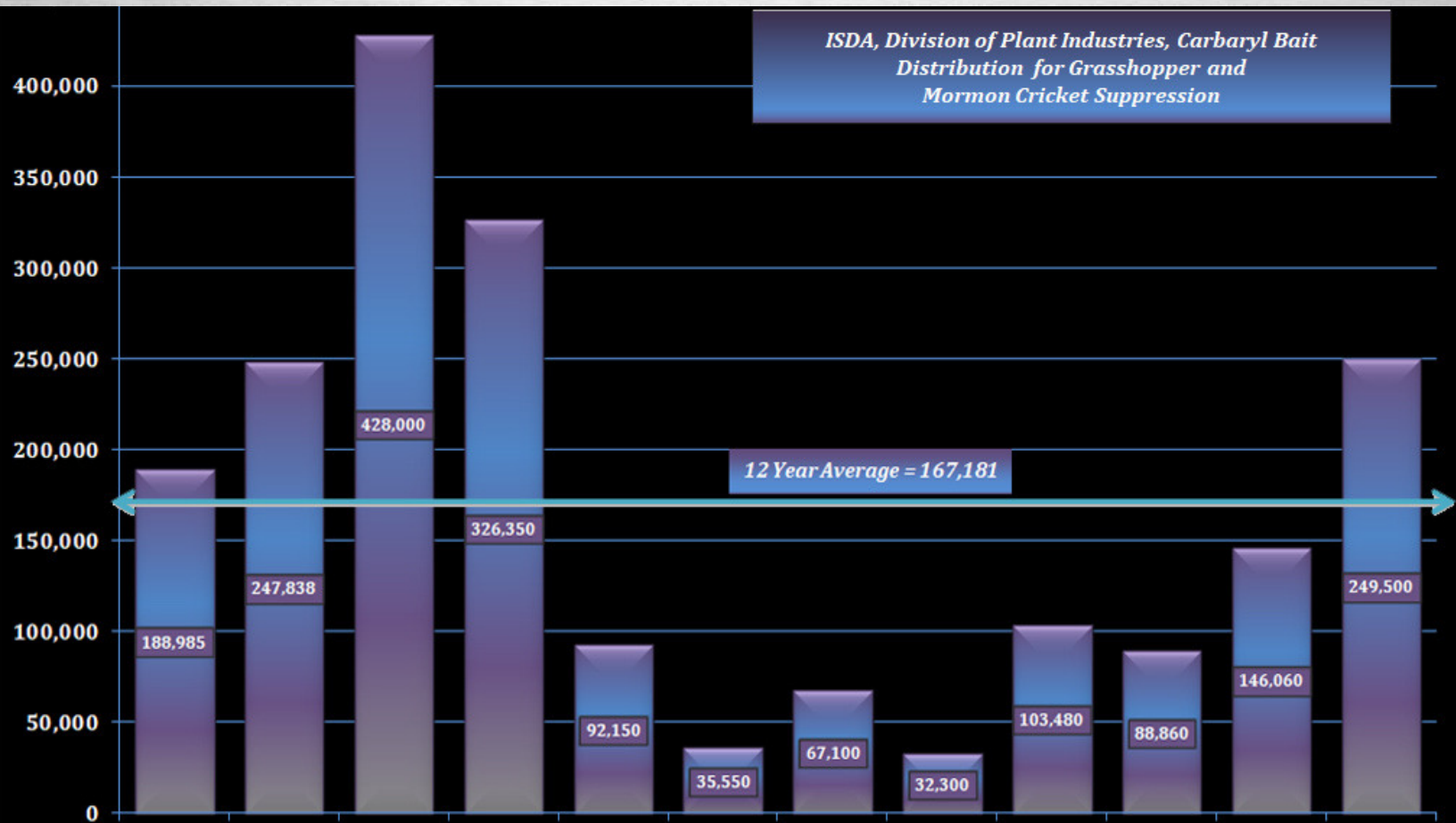
A landowner reimbursement program was again implemented for qualified landowners and five landowners (658 acres) participated in four counties.

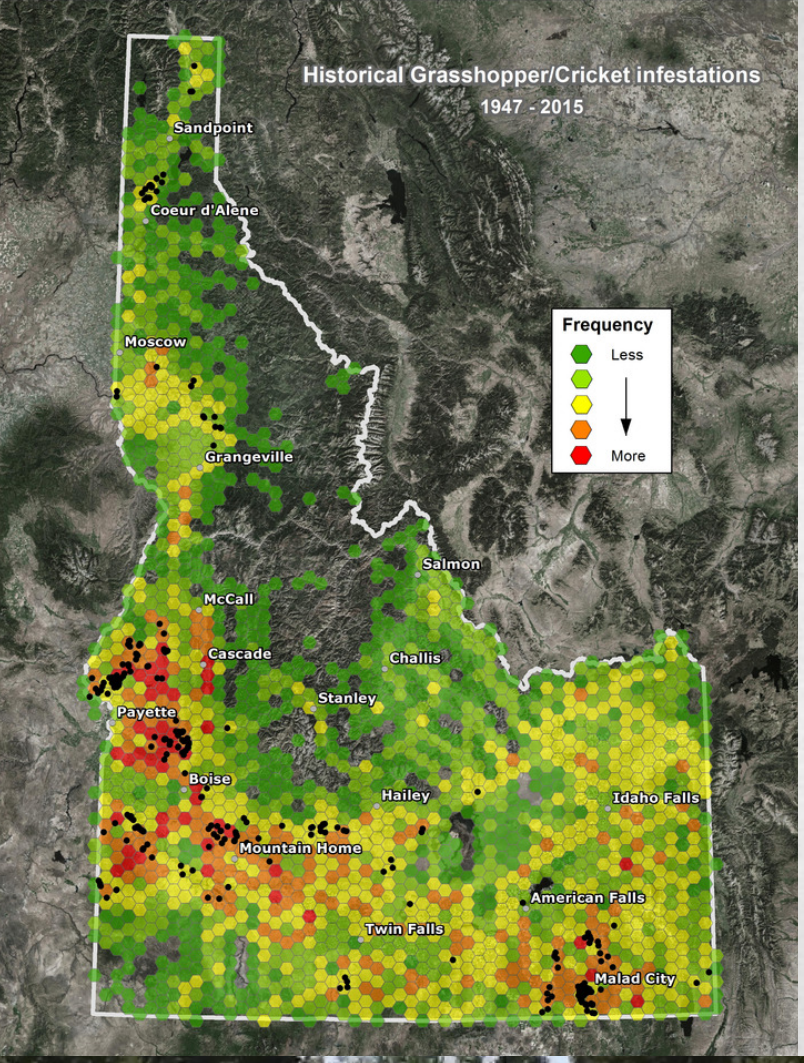
ISDA applied Carbaryl bait on the Right-Of-Way on one state highway (Hwy 95) in 2018. In summary, the total cost of insecticides and application to assist increased in 2018 ($209,970.21) from 2017 ($131,510.78).

For additional information on the grasshopper/mormon cricket program go to the ISDA website link: https://invasivespecies.idaho.gov/grasshopper-mormon-cricket-control-program/

2018 Number of Complaints and Bait Distributions for Grasshopper and Mormon Cricket Suppression (this includes ROW and other Land Applications, when applicable)

Rank	County	Number of Complaints	Number of Landowners that received bait	Carbaryl Bait Distributed (Lbs)
1	Washington	64	59	83,920
2	Owyhee	43	33	40,240
3	Oneida	85	68	33,800
4	Elmore	33	19	26,800
5	Gem	19	19	15,400
6	Bannock	15	14	10,840
7	Boise	20	18	7,640
8	Lincoln	5	5	5,160
9	Twin Falls	5	4	4,160
10	Camas	14	13	4,080
11	Kootenai	22	18	3,360
12	Blaine	2	2	2,800
13 -tied	Adams	8	7	2,160
14 -tied	Power	3	2	2,160
15	Bear Lake	2	2	1,760
16	Idaho	7	6	1,380
17	Cassia	2	1	800
18	Boundary	4	3	760
19 -tied	Butte	1	1	600
20 -tied	Clearwater	5	5	600
21	Ada	3	3	400
22	Bonner	1	1	280
23 -tied	Latah	1	1	200
24 -tied	Nez Perce	2	2	200
25	Franklin	1	0	0
Totals		367	306	249,500





Major Cooperators for the Grasshopper/Mormon Cricket Program

During the 2018 season, the following cooperators provided significant help in receiving complaints, bait storage, distribution, and overall program delivery:

- Elmore County Pest Abatement
- Franklin County Weed Control
- Gem County Weed Control
- Idaho Transportation Department, Boise (and field offices in Council, Marsing, and Mountain Home)
- Kootenai County Weed Control
- Oneida County Road and Bridge
- Oneida County Weed Control
- Simplot Partners, Caldwell, Idaho
- S&P Enterprises, Twin Falls Storage Unit
- University of Idaho, Extension Service, Franklin County, Idaho
- University of Idaho, Extension Service, Idaho County, Idaho
- University of Idaho, Extension Service, Latah County, Idaho
- University of Idaho, Extension Service, Nez Perce County, Idaho

ISDA Division of Plant Industries Contacts

ISDA Contacts: https://agri.idaho.gov/main/plants/plant-services-section-contact-information/

ISDA Website: https://agri.idaho.gov/main/

Past years' summary reports, are available at the ISDA Website: http://invasivespecies.idaho.gov/plants-archived-yearly-reports

2018 Plant Industries Public Outreach and Educational Presentations

DATE	ISDA STAFF	EVENT	TARGET AUDIENCE
1/17,18/2018	Dan Safford	Idaho Noxious Weed Conference	Weed Professionals
1/18/2018	Paul Castrovillo	Idaho Horticulture Expo: What's Been Going on with Japanese Beetle in Boise - And Why the Heck Should I Care?	Public
2/1/2018	Bethany Muffley	Introduction and Program Updates/Cooperator Appreciation Dinner	Lower Weiser River CWMA Cooperators
2/5/2018	Dan Safford	National Grasshopper Management Board Conference Idaho Grasshopper Mormon Cricket Report	Insect Professionals
2/6/2018	Dan Safford	National Grasshopper Management Board Conference Idaho Grasshopper Mormon Cricket Report	Insect Professionals
2/7/2018	Dan Safford	National Grasshopper Management Board Conference Idaho Grasshopper Mormon Cricket Report	Insect Professionals
2/7/2018	Paul Castrovillo	Everything You Always Wanted to Know About Insects* (*But Were Afraid to Ask)	ISDA Field Investigators & Staff
2/12/2018	Aaron Ursenbach	Watercraft Inspection Training	Twin Fall County and Burley Soil Conservation Staff
2/13/2018	Cole Morrison/ Stephen Cox	Watercraft Inspection Training	Oneida Soil Conservation Staff
2/14/2018	Cole Morrison/ Stephen Cox	Watercraft Inspection Training	Oneida Soil Conservation Staff
2/16/2018	Paul Castrovillo	Ada County Extension: JB Eradication in Boise and ISDA's War on Invasive Insect Pests	Master Gardeners class
2/21/2018	Cole Morrison	Invasive Species Monitoring and Control Update	GYCC Sub Committee
2/27/2018	Paul Castrovillo	College of Western Idaho: Sharing the World with Bugs/ISDA's War on Invasive Insect Pests	Insect and Disease Horticulture Class
2/28/2018	Nic Zurfluh/ Stephen Cox	Watercraft Inspector Training	Owyhee County Watercraft Inspectors
2/28/2018	Paul Castrovillo	Ada County Extension: JB Eradication in Boise and ISDA's War on Invasive Insect Pests	Advanced Master Gardeners class
3/1-2/2018	Dan Safford	Idaho Hay and Forage Association annual conference	Farmers
3/8/2018	Cole Morrison	Field Techniques in Invasive Species/Idaho State University Ecology Seminar	Students
3/13/2018	Paul Castrovillo	Sharing the World with Bugs/ISDA's War on Invasive Insect Pests	Boise Master Naturalists

2018 Plant Industries Public Outreach and Educational Presentations

DATE	ISDA STAFF	EVENT	TARGET AUDIENCE
3/15/2018	Bethany Muffley	Current Issues: AIS in Idaho	McCall Master Naturalist Class
3/22/2018	Bethany Muffley	SW Idaho Noxious Weed Concerns Per County	SW Idaho Weed Controllers Association
3/22/2018	Paul Castrovillo	Sharing the World with Bugs/ISDA's War on Invasive Insect Pests	McCall Master Naturalists
3/26/2018	Cole Morrison	Watercraft Inspection Training	Franklin County Staff
3/27/2018	Cole Morrison	Watercraft Inspection Training	Franklin County Staff
3/27/2018	Bethany Muffley	Introduction to Invasive Species Issue in Idaho	Boy Scout Troup - Owhyee County
3/30/2018	Paul Castrovillo	Sharing the World with Bugs/ISDA's War on Invasive Insect Pests	Deer Flat National Wildlife Refuge Master Naturalists
4/5/2018	Aaron Ursenbach	Introduction to Invasive species	Future Farmers of America
4/7/2018	Michael Johnson	Ecology Knowledge Test	Science Olympiad
4/10/2018	Cole Morrison	Aquatic and Terrestrial Invasive Species	Idaho Master Naturalists
4/11/2018	Bethany Muffley/ Nic Zurfluh	Watercraft Inspection Training	Duck Valley Indian Reservation Staff
4/17/2018	Nic Zurfluh	Point of Entry Watercraft Inspection Update/ Training	Point of Entry Staff
4/18/2018	Paul Castrovillo	Idaho Center for Outdoor Education: Insects in the Ecosystem and the Effects of Invasive Pests	Grade School/High School Students, Parents, Teachers
4/20/2018	Cole Morrison	Watercraft Inspection Training	Inkom Port of Entry Staff
4/20/2018	Aaron Ursenbach	Stopping the spread of Invasive Species/Rock creek Elementary	Students
4/21/2018	Paul Castrovillo	Canyon County Extension: Some Stories About Old and New Invasive Insect Pests	Public
4/25/2018	Cole Morrison	Identifying Aquatic Weeds	Bingham County Staff
4/25/2018	Bethany Muffly/ Michael Johnson	Informational Booth and Demonstration on Aquatic Invasive Species/Owyhee Watershed Event	Students
4/26/2018	Bethany Muffly/ Michael Johnson	Informational Booth and Demonstration on Aquatic Invasive Species/Owyhee Watershed Event	Students

2018 Plant Industries Public Outreach and Educational Presentations

DATE	ISDA STAFF	EVENT	TARGET AUDIENCE
5/3/2018	Bethany Muffley/ Nic Zurfluh	Watercraft Inspection Update/Training	Marine Deputy Staff
5/8/2018	Aaron Ursenbach	Aquatic Invasive Species and Impacts	Idaho Mosquito & Vector Control Association
5/9/2018	Paul Castrovillo	Sawtooth Middle School: Identifying Aquatic Invertebrates	Students
5/9/2018	Aaron Ursenbach	Watercraft Inspection Training/Lemhi County	Lemhi County Weed Staff
5/10/2018	Aaron Ursenbach	Watercraft Inspection Training/Lemhi County	Lemhi County Weed Staff
5/11/2018	Cole Morrison	Watercraft Inspection Training	Dubois Check Station Staff
5/12/2018	Cole Morrison	Watercraft Inspection Training	Dubois Check Station Staff
5/16/2018	Kim Holzer	Invasives/Noxious Weeds	Bay Watchers Training, CdA
5/16/2018	Paul Castrovillo	East End Neighborhood Association: Status of JB and Eradication Program in East End	Public
5/16/2018	Cole Morrison	Watercraft Inspection Training	Hwy 87 & 20 Staff
5/17/2018	Cole Morrison	Watercraft Inspection Training	Hwy 87 & 20 Staff
5/17/2018	Paul Rhoades	QZM and Other Macroinvertebrates	Pend Oreille Water Festival, Riley Creek
5/18/2018	Kim Holzer	Watercraft Inspection/Clean Drain Dry	Skype A Scientist, Post Falls
5/19/2018	Kim Holzer	Watercraft Inspection Training	Town of Kooskia, Kooskia
5/22/2018	Paul Rhoades	Invasives	Youth Water Summit, CdA — Judge
5/31/2018	Kim Holzer	Program Update Invasives/Noxious Weeds	Native and Invasive Species Workshop, Lewiston
6/12/2018	Paul Castrovillo	Idaho Botanical Garden: Techniques for Collecting Insects and Making a Scientifically Valuable Insect Collection	Public
6/13/2018	Cole Morrison	Identifying Terrestrial Noxious Weeds	Weed Warrior Workshop

2018 Plant Industries Public Outreach and Educational Presentations

DATE	ISDA STAFF	EVENT	TARGET AUDIENCE
6/14/2018	Cole Morrison	Identifying Terrestrial Noxious Weeds	Weed Warrior Workshop
6/14/2018	Bethany Muffley	Aquatic Invasive Plant ID	Lower Weiser River CWMA Weed Tour
6/15/2018	Cole Morrison	Identifying Terrestrial Noxious Weeds	Weed Warrior Workshop
6/21/2018	Bethany Muffley	Aquatic Invasive Plant ID	Adams County Weed Tour
6/21/2018	Aaron Ursenbach	Watercraft Inspection Training/USFS/Sawtooth National Forest	USFS Staff
6/26/2018	Paul Castrovillo	Camp Ivydale: Insects in the Ecosystem and the Effects of Invasive Pests	Grade School Students, Parents
6/28/2018	Paul Castrovillo	Camp Ivydale: Insects in the Ecosystem and the Effects of Invasive Pests	Grade School Students, Parents
7/24/2018	Kim Holzer	Aquatic Plant ID Workshop	UI Aquatic Plant ID Workshop, CdA
7/25/2018	Jennifer Roman/ Shawn Kennaly	Watercraft Inspection/Clean Drain Dry	Watershed Discovery Camp, Clark Fork
8/18/2018	Paul Castrovillo	Idaho Botanical Garden Bug Day: Ask an Entomologist	Bug Day attendees (public)
8/18/2018	Kim Holzer	Milfoil Management	Hayden Lake Watershed Association, Hayden
8/30/2018	Aaron Ursenbach	Informational Booth on Invasive Species/Twin Falls County Weed Dist. Booth Twin Falls County Fair	Public
9/5/2018	Cole Morrison	Noxious Weeds/Informational Booth/Eastern Idaho State Fair	Public
9/8/2018	Kim Holzer	Invasive Species/Noxious Weeds — Booth	CoeurFest, CdA
9/16/2018	Bethany Muffley/ Michael Johnson	Informational Booth and Demonstration on Aquatic Invasive Species/BREN River Boogie	Public
9/20/2018	Bethany Muffley	Train the Trainer: AIS to be on the Lookout for. 2018 Watershed Watch	Citizen Scientists
9/22/2018	Aron Ursenbach	Watercraft Inspection Training	Twin Fall County Weed District Staff

2018 Plant Industries Public Outreach and Educational Presentations

DATE	ISDA STAFF	EVENT	TARGET AUDIENCE
10/2/2018	Kim Holzer	Career Trajectory	Women In Science Lunch, CdA
10/3/2018	Kim Holzer	Career Trajectory	Women In Science Lunch, CdA
10/23/2018	Bethany Muffley	Pesticide Application Safety	Eastern Owhyee CWMA
11/1/2018	Bethany Muffley	IWM Aquatic Noxious Weeds/Valley County Pesticide Re-certification credits	
11/2/2018	Lloyd Knight	LPO Aquatic Invasive and Noxious Weeds	Lakes Commission Meeting, Sandpoint
11/7/2018	Paul Castrovillo	2018 Invasive Insect Pest Surveys Conducted by ISDA and an Update on Japanese Beetle Eradication in Boise	ID Association of Plant Protection Mtg attendees
11/14/2018	Cole Morrison	Aquatic Weed Identification and Control/Eastern Idaho Weed Conference	Weed Professionals
11/27/2018	Dan Safford	SW Idaho Weed Association Fall Meeting	Weed Professionals
11/28/2018	Kim Holzer	Invasive Species Management	Kootenai County Local Emergency Planning Commission, Hayden
12/11/2018	Paul Castrovillo	Some Stories About Old and New Invasive Insect Pests	Boise Environmental Care Association Pest Expo attendees
12/11/2018	Bethany Muffley	IWM Aquatic Noxious Weeds/Gem County Pesticide Re-certification credits	Weed Professionals
12/12/2018	Paul Castrovillo	2018 Invasive Insect Pest Surveys Conducted by ISDA and an Update on Japanese Beetle Eradication in Boise	Idaho Invasive Species Council
12/13/2018	Bethany Muffley	IWM Aquatic Noxious Weeds/Owyhee County Pesticide Re-certification credits	Weed Professionals
12/13/2018	Paul Castrovillo	Some Stories About Old and New Invasive Insect Pests	Twin Falls Environmental Care Association Pest Expo attendees
12/13/2018	Bethany Muffley	IWM Aquatic Noxious Weeds/Owyhee County Pesticide Re-certification credits	Weed Professionals
12/19/2018	Dan Safford	Payette County Weed Control Recertification Class GH & MC Biology and Control	Farmers & Ranchers

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