



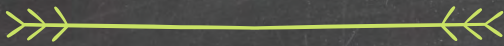
IDAHO STATE DEPARTMENT OF AGRICULTURE

Division of Plant Industries

2019 End of Year Survey Results

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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.

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."

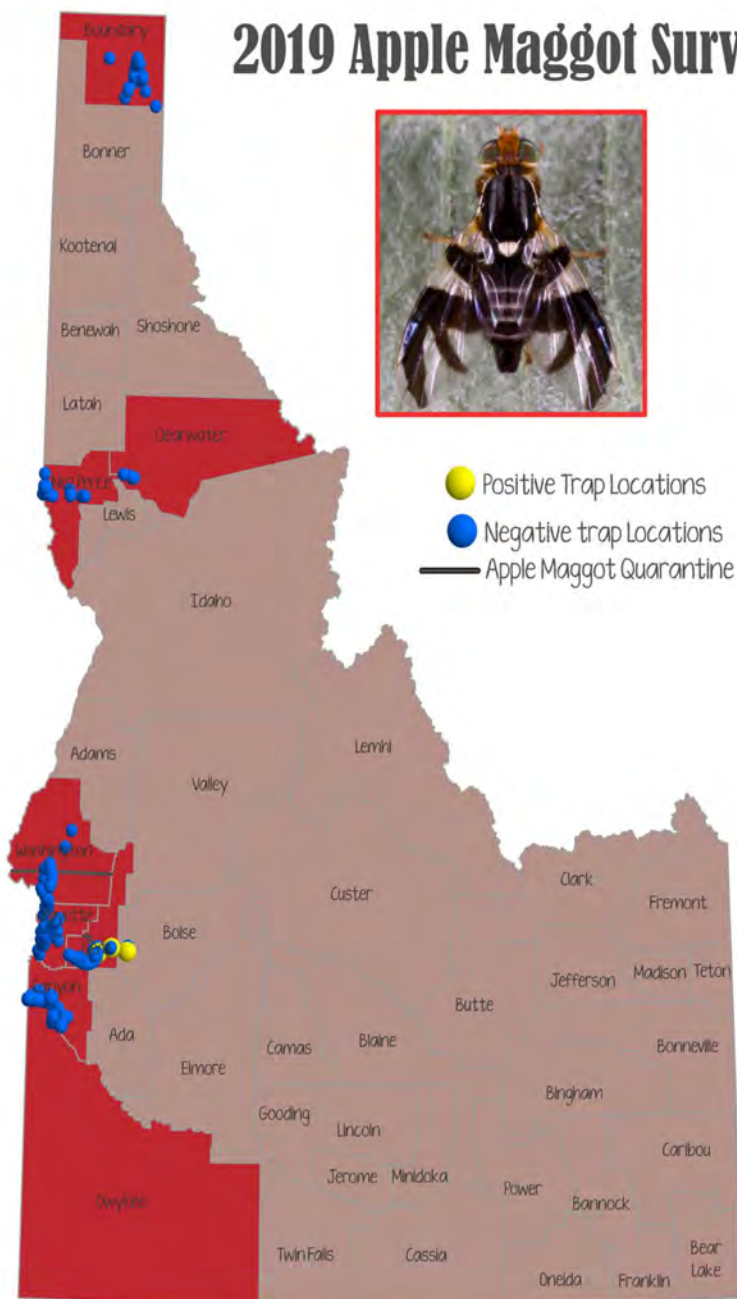
This report summarizes the comprehensive and cooperative programs conducted during 2019 to enforce Idaho statutes and fulfill the mission of ISDA.



2019 Apple Maggot Survey



- Positive Trap Locations
- Negative trap Locations
- Apple Maggot Quarantine Line



Apple Maggot Survey (AM)

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 2019, 348 traps were placed in commercial apple orchards and home landscape trees in Boise, Boundary, Canyon, Clearwater, 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 3 positive sites for AM. Only one of the three positives was inside the AMFZ zone and it was 6 miles away from the nearest commercial orchard. All AM specimens collected within the AMFZ were found on traps that were placed in apple trees in non-commercial settings. Gem county is considered partially infested and regulated under a state interior quarantine

<https://agri.idaho.gov/main/wp-content/uploads/2019/09/Omnibus-Negotiated-Rulemaking-Consolidation.pdf>

During 2020, ISDA will continue to conduct detection surveys in the eight counties. In Gem county, ISDA will set out supplementary detection traps around the one positive location in Emmett.



Western Cherry Fruit Fly Survey (WCFE)

ISDA conducts an annual trapping program to detect first emergence of Western Cherry Fruit Fly. In 2019 WCFE adults were first observed in ISDA sentinel traps in Canyon County on May 29 th and in Gem County on June 17th.

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



Small Hive Beetle

The Small Hive Beetle (*Aethina tumida*), an insect native to Africa, is a pest of honey bee hives. It was first detected in the SE US during the late 1990's. Since then it has spread, and has been detected in 30 US states, but appears to have, so far, only become established in the southern half of the country. The damage it causes comes from feeding on stored honey and pollen, consuming bee brood, and fouling and fermentation of honey due to the activity of yeasts carried on the beetles' bodies. During 2019 a single beetle was discovered in one of three bee hives in Middleton, ID and it was brought to ISDA for confirmation on Sept 20. The specimen, when found in the hive, was dead, and subsequent inspections of all three hives failed to uncover any more beetles or evidence of an active infestation.



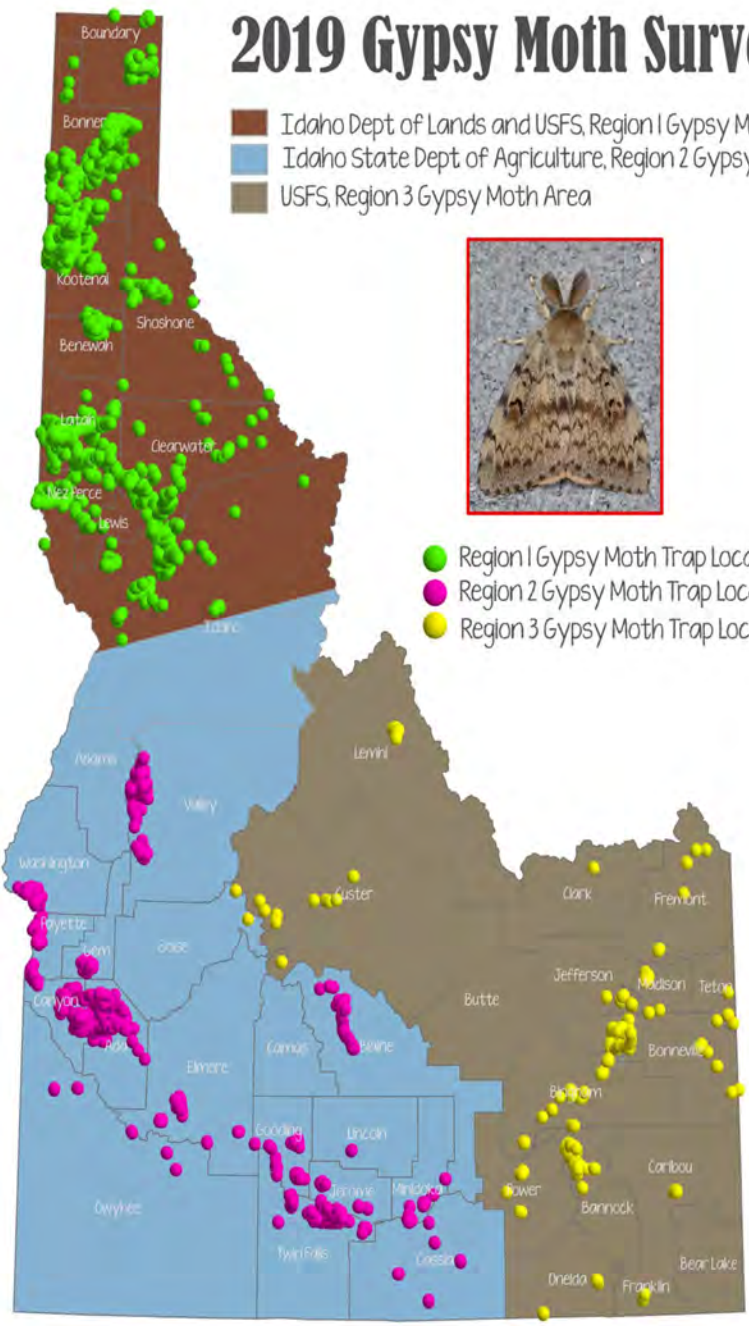


2019 Gypsy Moth Survey

- Idaho Dept of Lands and USFS, Region 1 Gypsy Moth Area
- Idaho State Dept of Agriculture, Region 2 Gypsy Moth Area
- USFS, Region 3 Gypsy Moth Area



- Region 1 Gypsy Moth Trap Locations - 2034
- Region 2 Gypsy Moth Trap Locations - 494
- Region 3 Gypsy Moth Trap Locations - 225



Gypsy Moth Survey (GM)

During 2019 2,753 Gypsy Moth survey traps were deployed throughout Idaho. The number of traps placed by each agency was as follows:

- Idaho Department of Lands (IDL): 1,938 detection traps
- Idaho State Department of Agriculture (ISDA): 494 detection traps
- United States Forest Service R-1 (USFS): 96 detection traps
- United States Forest Service R-3 (USFS): 225 detection traps

Between April 23, 2019 and November 1, 2019, staff members from each participating agency completed the placement and subsequent removal of gypsy moth traps throughout the state.

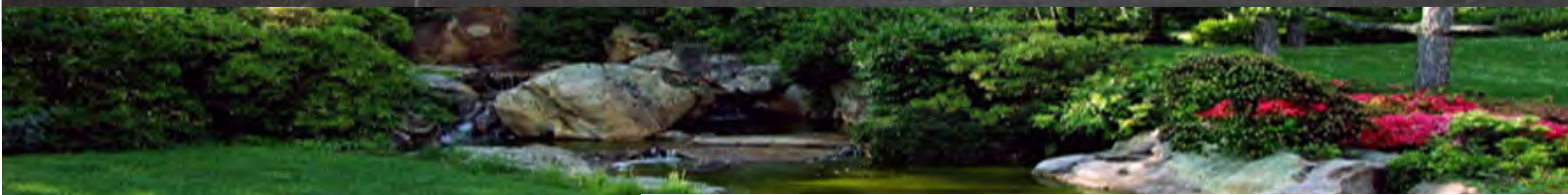
In 2019, all gypsy moth traps across Idaho were found negative.

The complete report on the 2019 Gypsy Moth Survey in Idaho may be viewed at the following IDL website: <https://www.idl.idaho.gov/forestry/insects-and-disease/>



Statewide Japanese Beetle Monitoring using Pheromone-Baited Traps and Results of the JB Eradication Program in Boise and Pocatello 2012-2019

Year	2012	2013	2014	2015	2016	2017	2018	2019
Number of Traps in Boise Only	222	713	2,646	2,156	1918	1,287	1,302	682
Number of Beetles Caught in Boise	56	3,058	1,283	365	128	19	4	0
Number of Residential/Commercial Properties Treated	N/A	100	500	1900	850	400	400	0
Number of Parks Treated	N/A	13	14	16	11	3	3	0
Number of Acres Treated	N/A	250	400	550	340	60	40	0
Number of Traps Outside of Boise	365	840	430	297	289	306	295	392
Number of Beetles Caught Outside of Boise	4 Kootenai 1 Bannock	0	0	0	0	0	1 Bannock	4 Bannock



Japanese Beetle Survey (JB)

The Japanese Beetle 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 consume the foliage, flowers or fruits of more than 300 ornamental and agricultural plants.

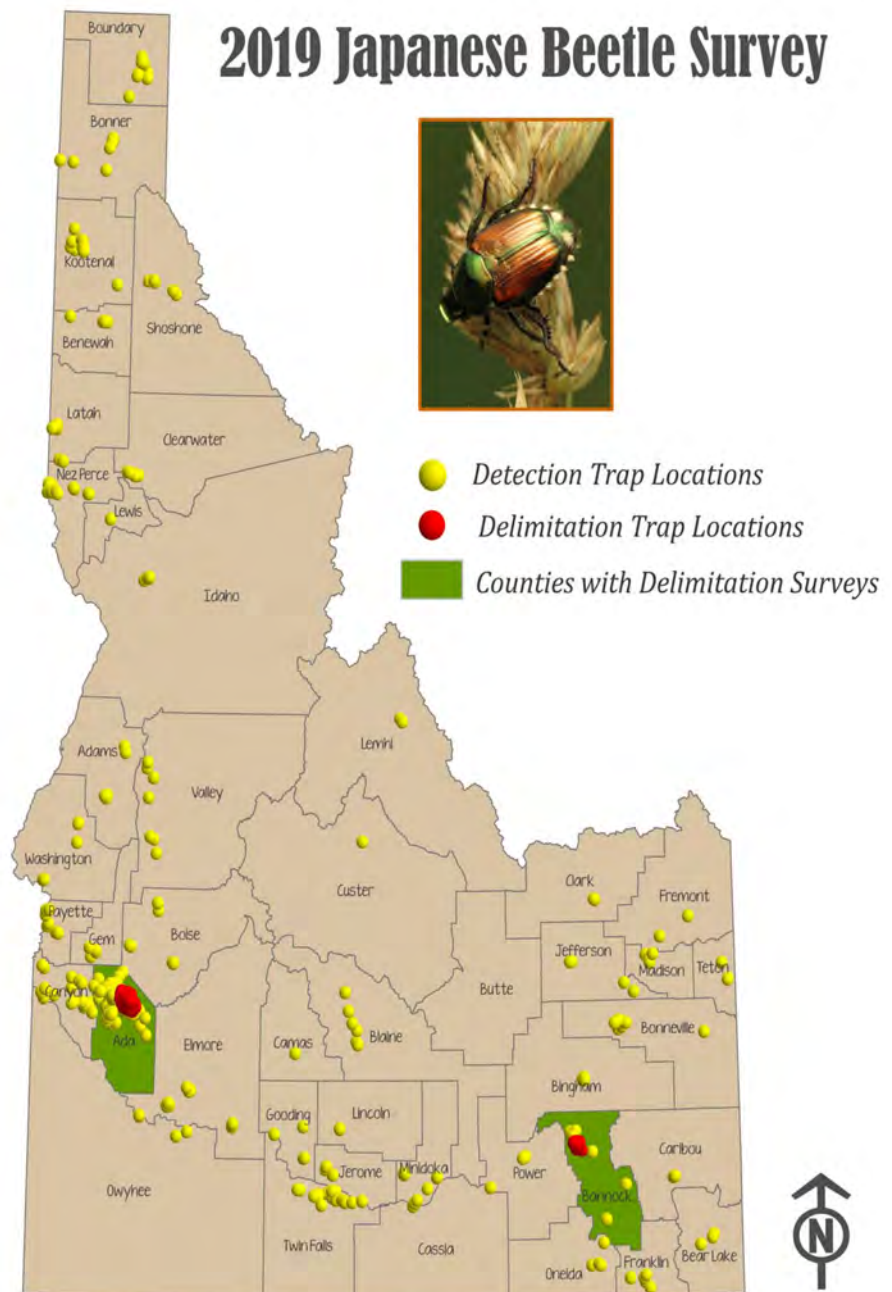
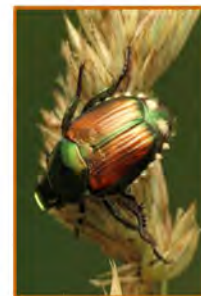
JB discovered in the west have usually arrived by "hitchhiking" on airplanes, other vehicles or living plants moved from an infested area.

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 in Boise was conducted from 2013-2018 in an attempt to eradicate the pest. Treatment data and catch results for each year are presented in the table above.

For 2020 delimitation trapping will continue in Boise and Pocatello. Currently no 2020 treatments are planned.

2019 Japanese Beetle Survey





2019 Corn Commodity Survey

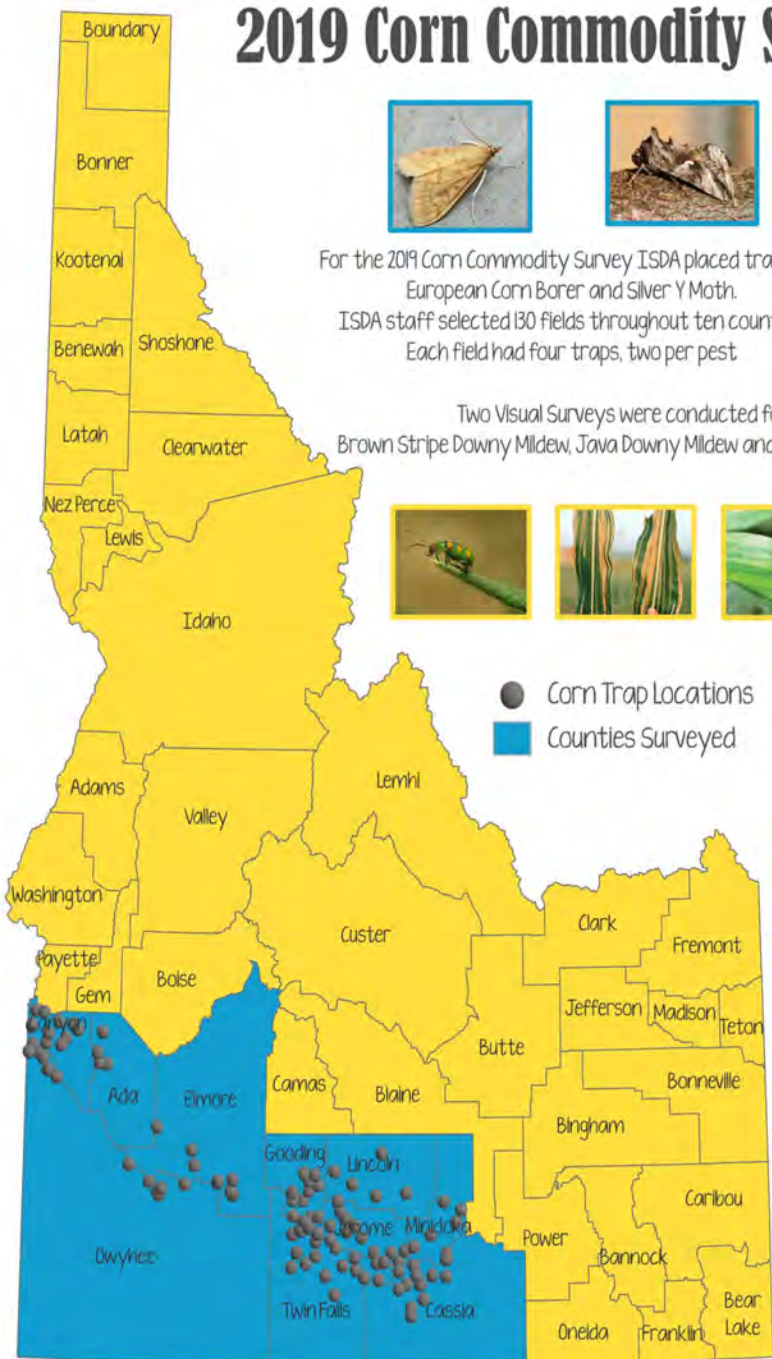


For the 2019 Corn Commodity Survey ISDA placed traps for European Corn Borer and Silver Y Moth. ISDA staff selected 130 fields throughout ten counties. Each field had four traps, two per pest.

Two Visual Surveys were conducted for Brown Stripe Downy Mildew, Java Downy Mildew and Cucurbit Beetle



- Corn Trap Locations
- Counties Surveyed



Corn Commodity Survey

Corn is a major agronomic crop in Idaho. The USDA National Agricultural Statistical Service reported 360,000 acres planted in the state in 2018. 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 2019, 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 corn crops. The pests of concern were: European Corn Borer and Silver Y Moth.

ISDA staff located 100 corn fields throughout the following counties: Ada, Canyon, Cassia, Elmore, Gooding, Jerome, Lincoln, Minidoka, Owyhee, and Twin Falls.

Two traps per pest were set out in each corn field, a total of 200 traps per pest. Traps were set out in June and removed by September. Traps were serviced every two weeks and lures were changed as instructed. ISDA also conducted 2 visual surveys for Brown Stripe Downy Mildew, Java Downy Mildew, and Cucurbit 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 Idaho's 44 counties, is a prominent crop in Idaho with its highest 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 2018, the National Agricultural Statistics Service reported Idaho's total wheat production yield was more than 100 million bushels in 2018. In winter wheat 720,000 acres were planted in 2018, with 680,000 acres harvested. For spring wheat 460,000 acres were planted and 445,000 acres were harvested.

In 2019, 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 Old World Bollworm.

ISDA staff located 96 grain fields throughout the following counties: Ada, Bingham, Bonneville, Canyon, Caribou, Cassia, Elmore, Fremont, Gooding, Idaho, Jerome, Jefferson, Latah, Lincoln, Lewis, Madison, Minidoka, Nez Perce, Owyhee, 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 mid August. Traps were serviced every two weeks and lures were changes as instructed. ISDA also conducted 2 visual surveys for Sunn Pest, 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.

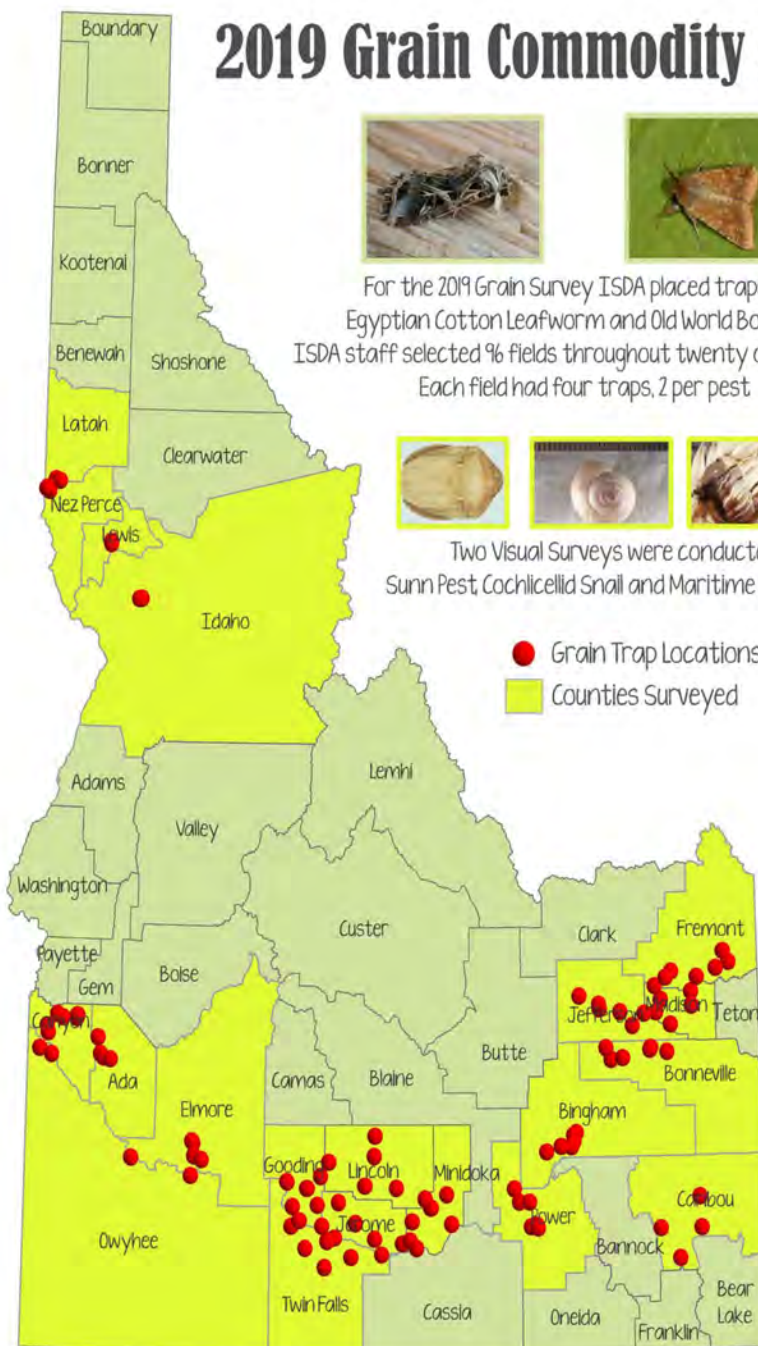
2019 Grain Commodity Survey



For the 2019 Grain Survey ISDA placed traps for, Egyptian Cotton Leafworm and Old World Bollworm. ISDA staff selected 96 fields throughout twenty one counties. Each field had four traps, 2 per pest



Two Visual Surveys were conducted for Sunn Pest, Cochlicellid Snail and Maritime Garden Snail

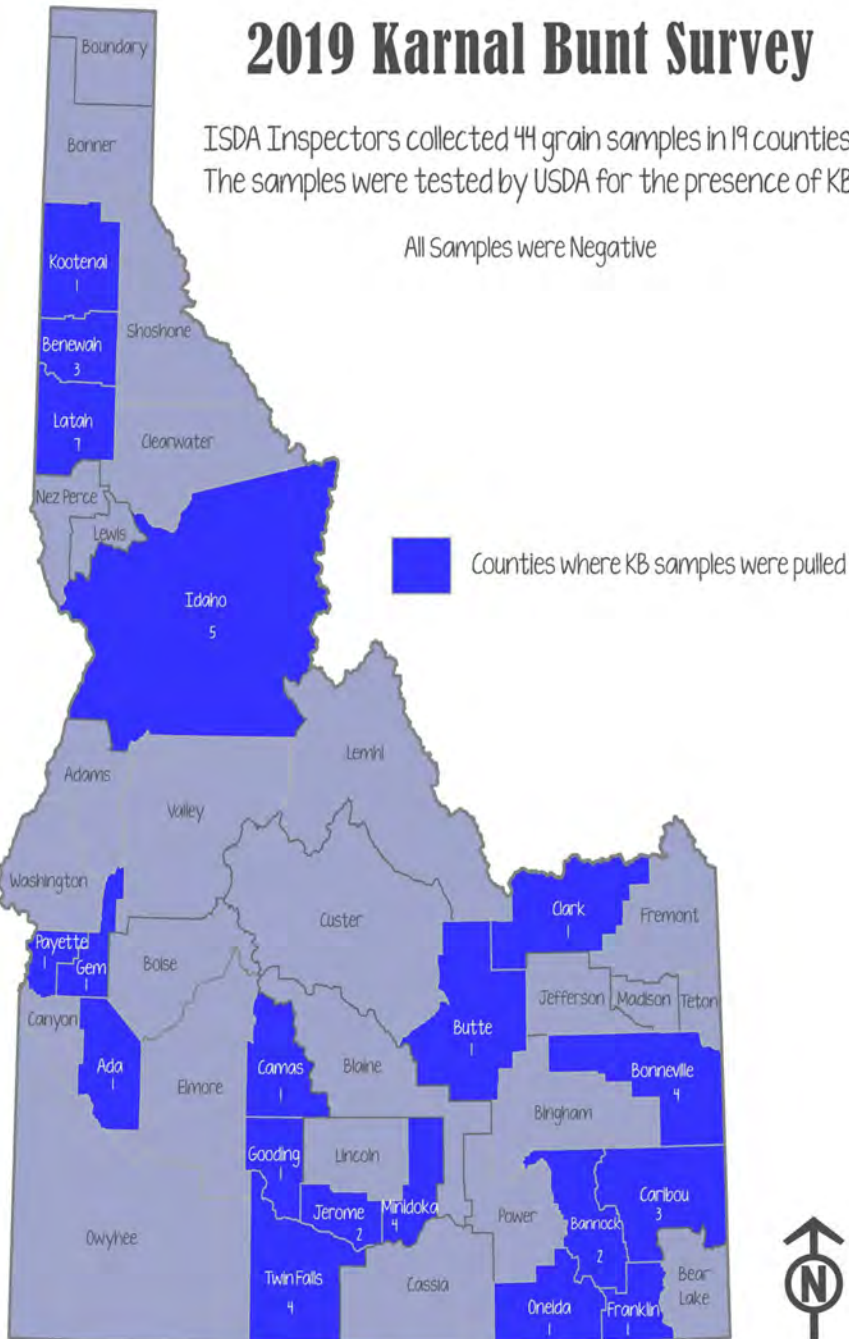




2019 Karnal Bunt Survey

ISDA Inspectors collected 44 grain samples in 19 counties. The samples were tested by USDA for the presence of KB.

All Samples were Negative



Karnal Bunt Survey

Karnal Bunt (KB) is a disease of wheat that is caused by the fungus, *Tilletia indica*. *T. indica* was found in the United States in 1996 in Arizona. The US Department of Agriculture has attempted to eradicate the fungus. Annual surveys throughout the U.S. act to notify wheat producers if KB spreads to any new locations so that quarantines and new eradication programs can be quickly put into place if the need arises. ISDA has conducted surveys in Idaho for KB since 1996.

During 2019, ISDA collected 44 wheat samples from 19 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.





Cherries

Apricots

Nectarines

Pluots

Peaches

Plums

Stone Fruit Commodity Survey

The Idaho stone fruit industry is an important sector of the state's agricultural economy with approximately 2,000 acres dedicated to stone fruit production. During 2018 5,760 tons of peaches were harvested. For other stone fruit crops the most current available data (2015) indicates 1,810 tons of cherries and 2,000 tons of plums/prunes were harvested in Idaho.

These commodities were exported to several western states, Mexico and some countries in the Pacific Rim. Each of the target organisms, if they were to be introduced and established in the area, could have potential to significantly damage the region's stone fruit industry from crop loss and export restrictions.

In 2019 ISDA, in cooperation with the USDA, APHIS, PPQ's and Plant Protection Act 7721, conducted surveys for four exotic organisms that could threaten the Idaho stone fruit industry. Pests of concern were: Cherry Bark Tortrix, European Cherry Fruit Fly, Plum Fruit Moth, and Summer Fruit Tortrix.

ISDA staff located 77 stone fruit orchards throughout the following counties: Canyon, Gem, Owyhee, Payette, Twin Falls, and Washington.

One to four traps per pest were set out in each orchard, depending on the size of the orchard, a total of 100 traps per pest. Traps were placed in May and removed in August. Traps were serviced every two weeks and lures were changed as instructed.

Results from this survey were all negative.

2019 Stone Fruit Commodity Survey

For the 2019 Stone Fruit Commodity Survey ISDA placed traps for Cherry Bark Tortrix, European Cherry Fruit Fly, Plum Fruit Moth and Summer Fruit Tortrix. ISDA staff set out 100 traps per pest throughout commercial orchards in six counties.





Idaho Apiary Registration and National Honey Bee Health Survey

ISDA registered 140 Beekeepers and 121,827 honey bee colonies in 2019. This year Idaho was one of 38 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 were also analyzed for other diseases and parasites known to be present in the U.S. such as Varroa mites and *Nosema* sp. Additionally wax samples were collected from select hives to test for the presence of various pesticides of concern.

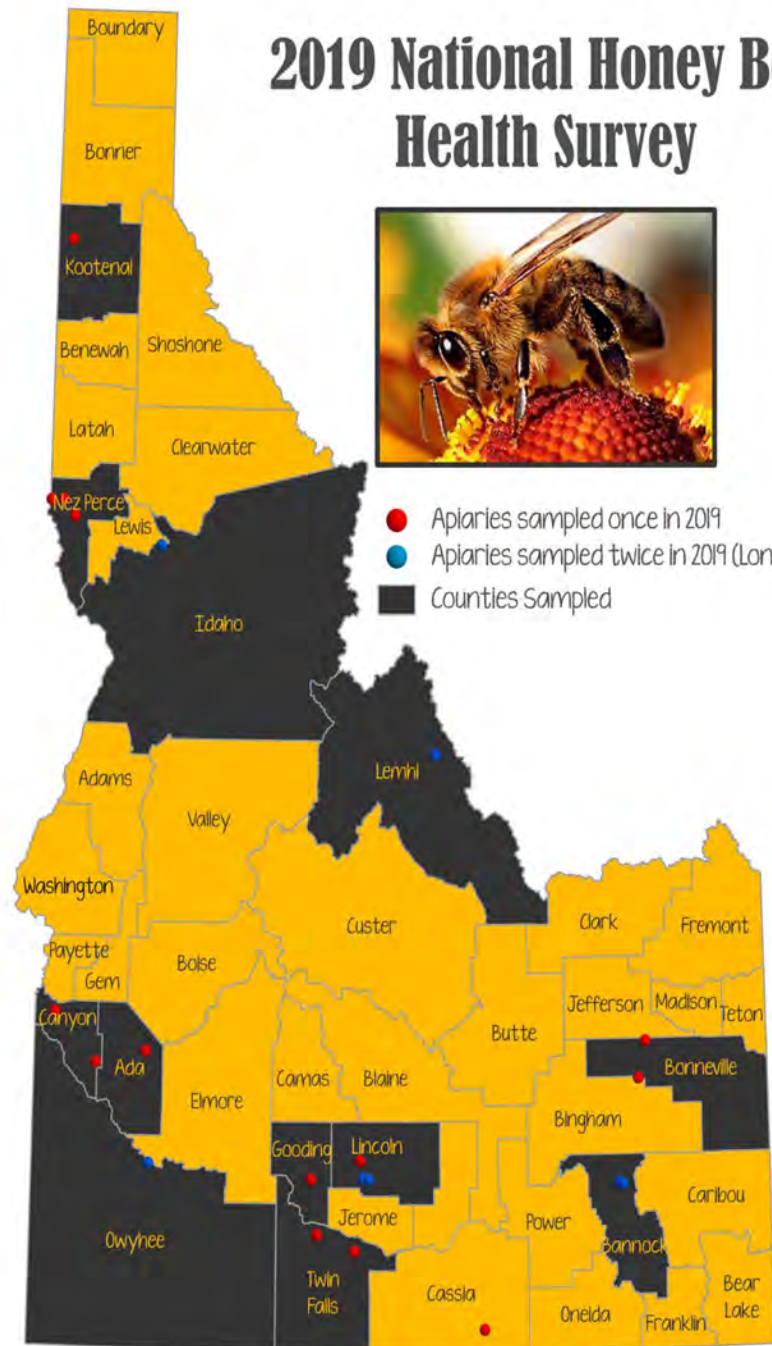
ISDA collected samples of bees from 8 hives in 19 apiaries located throughout the state. 14 of those apiaries were sampled once during 2019. The remaining 5 apiaries were sampled twice-once in the spring before or at the start of honey flow and again in the fall after honey flow (this was termed the "longitudinal survey"). All 24 surveys were completed by September 24, 2019. ISDA is waiting for diagnostic reports, to be supplied by APHIS from this year's survey.

For summary reports for the past six years of the Idaho Honey Bee surveys go to: <http://invasivespecies.idaho.gov/plants-archived-yearly-reports>

2019 National Honey Bee Health Survey



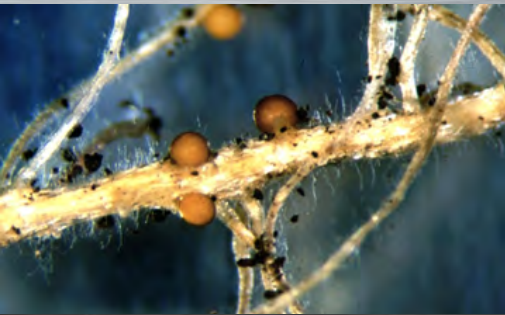
- Apiaries sampled once in 2019
- Apiaries sampled twice in 2019 (Longitudinal Survey)
- Counties Sampled



Exotic Wood Boring Bark Beetle

As part of USDA's 2019 National EWBB Survey, a total of 31 Lingren Funnel traps at 21 locations in 10 counties throughout Idaho were installed and monitored. Sites included Forest Service campgrounds, National Forests, tree farms, wood recyclers and urban landscape plantings.

In 2019, a variety of 6 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: 1,139

Seed Acres Surveyed: 1,194

Number of Counties Surveyed: 9 Fields

Positive: 31 fields (3,446 acres total); two new fields were detected in 2019.

Report provided by Tina Gresham, Director, PCN Program, USDA APHIS PPQ

All thirty-one known infested fields are located within an 8.5-mile radius that spans a portion of northern Bingham County and southern Bonneville County. PPQ did not deregulate any associated fields in 2019. The current regulated area is 7,554 acres; of that total 3,446 acres are infested fields. Viability staining analyses of cysts from 22 infested fields 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 4 fields have greenhouse bioassays in progress, with final results expected in 2020. Nine infested fields are working through the eradication process and still show some level of viable PCN in soil samples.

In 2019, potatoes were planted on four infested fields (357 acres) that became eligible for returning to PCN host crop production as part of the in-field bioassay test, the final test that must be passed to declare PCN eradication and deregulate a field. These were the first potato crops grown on these four fields since before PCN was detected there. Results are expected in January 2020.

PCN Eradication Treatments: The soil fumigant Telone II (1,3-dichloropropene) was applied to 655 acres (5 fields) in 2019. Soil samples were collected from four of the five fields at the end of the 2019 growing season to determine treatment efficacy; lab results are expected in early 2020. The fifth field will be surveyed in spring 2020 with lab results expected by June 2020. The trap crop litchi tomato was not used on any PCN-infested fields in 2019 due to concerns that the seed source was infected with a viroid. Subsequent testing did not detect any viroid in the seed source, which was produced in Prosser, WA in 2017 and 2018.

The 2019 Annual PCN Research Review originally scheduled for January 2019 was cancelled due to the partial federal government shutdown. The review was instead held in March 2019 in Moscow, ID, and was attended by representatives from PPQ, the Idaho State Department of Agriculture, the Idaho Potato Commission, Idaho PCN-infested field owners, and University of Idaho researchers. The researchers reported on ongoing projects such as developing non-chemical PCN eradication tools (trap crops and bio-fumigants), as well as efforts to develop a fully PCN-resistant russet-type potato.

Outreach: Stakeholder updates (Quarterly Reports) were published to the USDA APHIS PCN website in March, July, and October 2019.

Sampling Information: To date, the PCN Program has collected 527,824 soil samples in Idaho to ensure Idaho's freedom from PCN outside of the 31 known infested fields. A total of 165,868 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 636,107 soil samples collected in Idaho and 86,114 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 956 cyst samples collected from infested fields before and after fumigation treatments.



Plant Pathology Summary Report

In 2019 the Idaho State Department of Agriculture Plant Pathology Lab (ISDA-PPL) received a total of 1069 samples (field, seed, regulatory, and submitted). This was no change from last year. ISDA-PPL ran a total of 4309 tests.

Included in the above totals were 216 lots of bean or non-Phaseolus bean seeds for testing prior to planting in Idaho. From these lots we ran 1312 different tests. Our average turnaround time was 30 days. We found 12 lots positive for regulated bacteria. The positives were as follows: 6 lots were contaminated with *Pseudomonas syringae* pv *syringae*, 3 lots with *Xanthomonas axonopodis* pv *phaseoli*, 2 lots with *Xanthomonas fuscans*, and # 1 lot with *Pseudomonas savastanoi* pv *phaseoli*.

Also included in the total number of samples were 732 samples from the field inspection program. ISDA-PPL ran approximately 2750 tests on these samples. The samples came from 23 different crop species. We had an average turnaround time of 18 days. The table below shows the number of fields that were positive for organisms of concern. ISDA-PPL received 84 seed samples, from 13 different species. We ran 159 tests with an average turnaround time of 24 days.

3 samples were submitted for compliance to the "Year Out" potato rule (IDAPA 02.06.39). ISDA-PPL ran 10 tests on these samples, with an average turnaround time of 34 days. An additional 16 lots of potatoes were submitted for virus testing. 16 tests were run on these samples.

61 tests were run on 18 samples taken from nursery stock across the state. Samples were found positive for *Xanthomonas campestris*, Cucumber Mosaic Virus, *Fusarium* sp., *Botrytis* and *Sclerotinia* species.

Positive Field Sample Results

Crop	Number of Positive Fields	Organism
Allium	2	<i>Botrytis allii</i>
	1	<i>Botrytis aclada</i>
Barley	8	<i>Xanthomonas translucens</i> or <i>X. sp.</i>
Beans (Phaseolus)	12	<i>Pseudomonas syringae</i> v. <i>syringae</i>
	1	<i>Curtobacterium flaccumfaciens</i>
	6	Bean Common Mosaic Potyvirus
Carrots	2	<i>Alternaria radicina</i>
	1	<i>Alternaria dauci</i>
	2	Cucumber Mosaic virus
Corn	25	High Plains Virus
	3	<i>Fusarium subglutinans</i>
	6	Wheat Streak Mosaic Virus
	1	<i>Rhizopus arrhizus</i>
Garlic	1	<i>Peronospora destructiva</i>
Onion	3	<i>Botrytis sp.</i>
Pea	2	<i>Phoma medicaginis</i>
	3	<i>Pseudomonas syringae</i> pv. <i>pisii</i>
	1	<i>Sclerotinia sp.</i>





Seed Lab Summary

The Idaho State Seed laboratory (ISSL) received 6096 samples and completed 9,144 service tests in fiscal year 2018/19. 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, wheatgrasses and other native species. In all, 123 regulatory enforcements were checked for licensing and truth-in-labeling requirements; 7 of these checks resulted in inspector actions. A total of 648 seed dealer licenses were issued.

Reseeding projects with native seed from the BLM contribute to 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 240 distinct species were tested.

Export Certification for the 2019 Calendar Year

During 2019, the Division of Plant Industries issued 4455 Federal and 132 State Phytosanitary Certificates for 243 different types of commodities to 86 countries. The Division of Plant Industries certified over 498,815,410 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 2019, 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 2019, there were fewer locations that required a visit, as compared to 2018, 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, conducts inspections and consequently takes action against various pest threats and other violations.

In 2019, there were 2,102 licensed nurseries in the state; of those, 366 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.



Allium, Onions: A total of 731.25 acres were submitted for inspection during the 2019 growing season. In total, there were 801.85 acres inspected due to multiple inspection requirements for certain diseases. All fields inspected were found apparently free from Asparagus rust (*Puccinia asparagi*), 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*).

- **Botrytis blight** (*Botrytis* sp.) was confirmed in 43 acres; the remaining acres inspected were found apparently free from Botrytis blight.
- **Botrytis stalk rot** (*Botrytis aclada*) was confirmed in 23 acres; the remaining acres inspected were found apparently free from Botrytis stalk rot.
- **Botrytis rot of onion** (*Botrytis allii*) was confirmed in 26 acres; the remaining acres inspected were found apparently free from Botrytis stalk rot.

Allium, Ornamental: A total of 9.01 acres were submitted for inspection during the 2019 growing season. All fields inspected were found apparently free from Asparagus rust (*Puccinia asparagi*), Botrytis blight (*Botrytis* sp.), 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, Shallot: A total of 0.1 acre was submitted for inspection during the 2019 growing season. The field inspected was found apparently free from Botrytis blight (*Botrytis* sp.), 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: A total of 54.7 acres were submitted for inspection during the 2019 growing season. All fields inspected were found apparently free from Asparagus rust (*Puccinia asparagi*), Botrytis blight (*Botrytis* sp.), 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: A total of 655 acres were submitted for inspection during the 2019 growing season. In total, there were 1,236 acres inspected due to multiple inspection requirements for certain diseases. To meet requirements of IDAPA 02.06.06, Rules Governing the Planting of Beans, 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*), Halo blight (*Pseudomonas savastanoi* pv. *phaseolicola*) and Pepper Anthracnose (*Colletotrichum* spp.).

Beans, Dry: A total of 924.75 acres were submitted for inspection during the 2019 growing season. In total, there were 2,251 acres inspected due to multiple inspection requirements for certain diseases. To meet requirements of IDAPA 02.06.06, Rules Governing the Planting of Beans, 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 97.25 acres; the remaining acres inspected were found apparently free from Brown spot.



Diseases and Pests Found During 2019 Field Inspections for Export Certification

In 2019, 68 seed companies submitted field inspection requests representing 35 crops. The total acres submitted for inspection were 33,223, with 68,950 acres actually inspected due to multiple inspections required for some crop diseases. This represents 2 more firms than participated in 2018, with an 8.05% increase in acreage from the 30,757 acres submitted in 2018.

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	65,639
2019	68	35	33,233	68,950

Alfalfa Seed: A total of 923.84 acres were submitted for inspection during the 2019 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*).

- **Canada thistle** (*Cirsium arvense*) was confirmed in 35 acres.

Allium, Chives: A total of 15 acres were submitted for inspection during the 2019 growing season. In total, there were 30 acres inspected due to multiple inspection requirements for certain diseases. All fields inspected were found apparently free from Asparagus rust (*Puccinia asparagi*), Botrytis blight (*Botrytis* sp.), Botrytis rot of onion (*Botrytis allii*), Botrytis stalk rot (*Botrytis aclada*), Downy mildew of onions (*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: A total of 11.88 acres were submitted for inspection during the 2019 growing season. All fields inspected were found apparently free from Asparagus rust (*Puccinia asparagi*), Botrytis blight (*Botrytis* sp.), 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, Faba: A total of 0.01 acre was submitted for inspection during the 2019 growing season. In total there were 0.03 acres inspected due to multiple inspection requirements for certain diseases. 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*), Leaf spot chickpea (*Colletotrichum dematium*) and Pepper Anthracnose (*Colletotrichum* spp.).

Beans, Garden: A total of 10,697.13 acres were submitted for inspection during the 2019 growing season. In total, there were 27,529.86 acres inspected due to multiple inspection requirements for certain diseases. To meet requirements of IDAPA 02.06.06, Rules Governing the Planting of Beans, all fields inspected were found apparently free from Bean anthracnose (*Colletotrichum lindemuthianum*), 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 223.5 acres; the remaining acres inspected were found apparently free from Brown spot.
- **Bean bacterial wilt** (*Curtobacterium flaccumfaciens*), was confirmed in 55 acres; the remaining acres inspected were found apparently free from Bean bacterial wilt.
- **Bean common mosaic potyvirus** was confirmed in 26.1 acres.

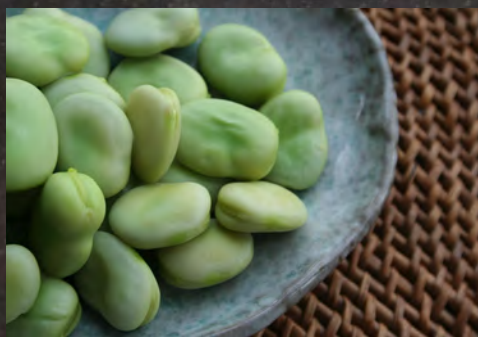
Beans, Soybeans: A total of 13.59 acres were submitted for inspection during the 2019 growing season. In total, there were 27.18 acres inspected due to multiple inspection requirements for certain diseases. To meet requirements of IDAPA 02.06.06, Rules Governing the Planting of Beans, all fields inspected 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*), Soybean anthracnose (*Colletotrichum truncatum*) and Pepper Anthracnose (*Colletotrichum* spp.).

Beans, Trial Ground – Non-Phaseolus sp. (Azuki/Cowpeas): A total of 1.06 acres were submitted for inspection during the 2019 growing season. In total, there were 5.30 acres inspected due to multiple inspection requirements for certain diseases. To meet requirements of IDAPA 02.06.06, Rules Governing the Planting of Beans, 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 Pepper Anthracnose (*Colletotrichum* spp.).

Beans, Trial Ground – Phaseolus sp.: A total of 259.11 acres were submitted for inspection during the 2019 growing season. In total, there were 1,295.55 acres inspected due to multiple inspection requirements for certain diseases. To meet requirements of IDAPA 02.06.06, Rules Governing the Planting of Beans, 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*).

- **Bean common mosaic potyvirus** was confirmed in 20 acres.
- **Brown spot** (*Pseudomonas syringae* pv. *syringae*) was confirmed in 2 acres; the remaining acres inspected were found apparently free from Brown spot.

Brassica, Chinese Cabbage: A total of 8 acres were submitted for inspection during the 2019 growing season. All fields inspected were found apparently free from Black leg (*Leptosphaeria maculans*), Black rot of crucifers (*Xanthomonas campestris* pv. *campestris*) and Crucifer bacterial leaf spot (*Pseudomonas syringae* pv. *maculicola*).ext



Brassica, Collards: A total of 46 acres were submitted for inspection during the 2019 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*).

Brassica, Kale: A total of 20 acres were submitted for inspection during the 2019 growing season. All fields inspected were found apparently free from Black leg (*Leptosphaeria maculans*), Black rot of crucifers (*Xanthomonas campestris* pv. *campestris*) and Crucifer bacterial leaf spot (*Pseudomonas syringae* pv. *maculicola*).

Brassica, Mustard: A total of 99 acres were submitted for inspection during the 2019 growing season. All fields inspected were found apparently free from Black leg (*Leptosphaeria maculans*), Black rot of crucifers (*Xanthomonas campestris* pv. *campestris*) and Crucifer bacterial leaf spot (*Pseudomonas syringae* pv. *maculicola*).

Brassica, Pak Choi: A total of 22 acres were submitted for inspection during the 2019 growing season. All fields inspected were found apparently free from Black leg (*Leptosphaeria maculans*), Black rot of crucifers (*Xanthomonas campestris* pv. *campestris*) and Crucifer bacterial leaf spot (*Pseudomonas syringae* pv. *maculicola*).

Brassica, Turnip: A total of 152 acres were submitted for inspection during the 2019 growing season. All fields inspected were found apparently free from Black leg (*Leptosphaeria maculans*), Black rot of crucifers (*Xanthomonas campestris* pv. *campestris*) and Crucifer bacterial leaf spot (*Pseudomonas syringae* pv. *maculicola*).

Carrot: A total of 2,255.21 acres were submitted for inspection during the 2019 growing season (in total there were 2,181.41 acres inspected). All fields inspected were found apparently free from Bacterial blight of carrot (*Xanthomonas hortorum* pv. *carotae*).

- **Alternaria leaf blight** (*Alternaria dauci*) was confirmed in 8.6 acres; the remaining acres inspected were found apparently free from *Alternaria* leaf blight
- **Black rot of carrot** (*Alternaria radicina*) was confirmed in 154 acres; the remaining acres inspected were found apparently free from Black rot of carrot

Catnip: A total of 5 acres were submitted for inspection during the 2019 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: A total of 6,088.82 acres were submitted for inspection during the 2019 growing season. In total, there were 12,136.74 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* subsp. *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 (*Mycosphaella zeae-maydis*).

- **Common smut** (*Ustilago maydis*) was confirmed in 2,455.03 acres.
- **Corn ear rot** (*Rhizopus arrhizus*) was confirmed in 15 acres
- **High plains virus** was confirmed in 278.07 acres.
- **Fusarium wilt** (*Fusarium subglutinans*) was confirmed in 45.6 acres.
- **Wheat streak mosaic virus** was confirmed in 31.58 acres



Garbanzo Beans/Chick Peas Trial Ground: A total of 0.28 acres were submitted for inspection during the 2019 growing season. In total, there were 0.56 acres inspected due to multiple inspection requirements for certain diseases. All fields inspected were found apparently free from *Ascochyta* blight chickpea (*Ascochyta rabiei*), Leaf spot chickpea (*Colletotrichum dematium*) and Pepper Anthracnose (*Colletotrichum* spp.).

Grain, Barley: A total of 30.54 acres of barley were submitted for inspection during the 2019 growing season. In total, there were 61.08 acres inspected due to multiple inspection requirements for certain diseases. All fields inspected were found apparently free from Smut (*Urocystis* sp.).

- **Bacterial leaf streak** (*Xanthomonas translucens*) was confirmed in 6.57; the remaining acres inspected were found apparently free from Bacterial leaf streak.

Grain, Grain Sorghum: A total of 60 acres of grain sorghum were submitted for inspection during the 2019 growing season. All fields inspected were found apparently free from Sorghum bacterial leaf streak (*Xanthomonas campestris* pv. *holcicola*) and Sorghum downy mildew (*Peronosclerospora sorghi*).

Grain, Oats: A total of 0.92 acres of oats were submitted for inspection during the 2019 growing season. In total, there were 1.84 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, Wheat: A total of 207.84 acres of wheat were submitted for inspection during the 2019 growing season. All fields inspected were found apparently free from Bacterial leaf streak (*Xanthomonas translucens*) and Smut (*Urocystis* sp.).

Herb, Oregano: A total of 2 acres of oregano were submitted for inspection during the 2019 growing season. All fields inspected were found apparently free from Mint rust (*Puccinia menthae*).

Lettuce: A total of 305.50 acres of lettuce were submitted for inspection during the 2019 growing season. All fields inspected were found apparently free from Lettuce mosaic potyvirus (LMV).

Peas: A total of 4,314.21 acres were submitted for inspection during the 2019 growing season. In total, there were 11,832.53 acres inspected due to multiple inspection requirements for certain diseases. All fields inspected were found apparently free from Anthracnose of lentil (*Colletotrichum truncatum*).

- **Bacterial blight of peas** (*Pseudomonas syringae* pv. *pisii*) was confirmed in 151.9 acres; the remaining acres inspected were found apparently free from Bacterial blight of peas.
- **Root and Crown rot** (*Phoma medicaginis*) was confirmed in 40.5 acres.
- **Sclerotinia rot** (*Sclerotinia* spp.) was confirmed in 16 acres.

Peppermint: A total of 104.3 acres were submitted for inspection during the 2019 growing season. In total, there were 208.60 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 nigra*) and Verticillium wilt of mint (*Verticillium dahliae*).

Potato: A total of 2,590.90 acres were submitted for inspection during the 2019 growing season.

Radish: A total of 393 acres were submitted for inspection during the 2019 growing season. All fields inspected 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: A total of 2,221.46 acres were submitted for inspection during the 2019 growing season. In total, there were 4,439.92 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 2019 Field Season

2019 Inspection Acres Report (compiled 1/02/2020)

Crop	Number of Applications	Acres Submitted for Inspection	Number of Inspections Based on Diseases Requested	Actual Acres Inspected
Alfalfa Total	69	923.84	1.00	923.84
Barley Total	27	30.54	2.00	61.08
Beans, Azuki Total	25	655.00	2.00	1,236.00
Beans, Dry	43	523.25	2.00	1,046.50
	12	401.50	3.00	1,204.50
Beans, Dry Total	55	924.75	3.00	2,251.00
Beans, Faba Total	1	0.01	3.00	0.03
Beans, Garden	411	4,549.03	2.00	9,085.56
	169	6,148.10	3.00	18,444.30
Beans, Garden Total	580	10,697.13		27,529.86
Beans, Soybeans Total	12	13.59	2.00	27.18
Beans Trial Ground - Non-Phaseolus Total	4	1.06	5.00	5.30
Beans Trial Ground - Phaseolus Total	45	259.11	5.00	1,295.55
Carrot Total	362	2,255.21	1.00	2,181.41
Catnip Total	2	5.00	1.00	5.00
Chinese Cabbage Total	1	8.00	1.00	8.00
Chives Total	2	15.00	2.00	30.00
Collards Total	4	46.00	1.00	46.00
Corn	6	40.90	1.00	40.90
	690	6,047.92	2.00	12,095.84
Corn Total	696	6,088.82		12,136.74
Garbanzo Bean/Chick Pea Trial Ground Total	2	0.28	2.00	0.56
Garlic Total	31	11.88	1.00	11.88
Grain Sorghum Total	3	60.00	1.00	60.00
Kale Total	2	20.00	1.00	20.00
Lettuce Total	46	305.50	1.00	305.50
Mustard Total	10	99.00	1.00	99.00
Oats Total	1	0.92	2.00	1.84
Onion	132	660.65	1.00	660.65
	11	70.60	2.00	141.20
Onion Total	143	731.25		801.85
Oregano (Herb) Total	1	2.00	1.00	2.00
Ornamental Allium Total	3	9.01	1.00	9.01
Pak Choi Total	4	22.00	1.00	22.00
Peas	56	254.10	1.00	254.10
	27	601.90	2.00	1,203.80
	220	3,458.21	3.00	10,374.63
Peas Total	303	4,314.21		11,832.53
Peppermint Total	9	104.30	2.00	208.60
Potato Total	24	2,590.90	1.00	2,590.90
Radish Total	32	393.00	1.00	393.00
Shallot Total	1	0.01	1.00	0.01
Sunflower	1	3.00	1.00	3.00
	29	2,218.46	2.00	4,436.92
Sunflower Total	30	2,221.46		4,439.92
Turnip Total	11	152.00	1.00	152.00
Welsh Onion Total	6	54.70	1.00	54.70
Wheat Total	17	207.84	1.00	207.84
Totals	2,564	33,223.32		68,950.13



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 2019, ISDA trained seventy-seven (77) people (the majority were NWFFS Inspectors) at seven (7) 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 2019, 26,574 acres of forage and straw was inspected and certified NWF by trained County cooperators for a farm value of over \$7.1 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. Below 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 fourteen (14) years. In addition, the ISDA NWFFS Program Manager has participated on its board, as an ex-officio member for fourteen (14) years.

- Updated NWFFS Website to include: NAISMA Prohibited Weed List Presentation and NAISMA Forage Standard Presentation

Counties Participating in NWFFS 2019





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 118,000 watercraft inspections were conducted in 2019.
- Over 718,000 watercraft inspections have been conducted in Idaho since the program began in 2009.
- 45 zebra/quagga mussel fouled vessels were intercepted in 2019.
- 290 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 three new roving inspection stations located at Sandpoint, Bonners Ferry and Twin Falls,
 - 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
 - Law enforcement support at every Idaho inspection station,
 - The operation of six roving inspection crews throughout the state.
- 1600 veliger samples for zebra/quagga mussel early detection monitoring were collected from over 80 waterbodies throughout the state in 2019.
- 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 1,329 surface acres were treated in 2019 for Eurasian watermilfoil and curlyleaf pondweed.
- Hydrilla populations are continuing to decrease due to eradication efforts.
- The Noxious Weeds Cost Share Program distributed a total of \$1.37 million to CWMA programs statewide.
- 27 CWMA's participated in the 2019 Cost Share Program, resulting in over 122,896 acres of noxious weeds being treated and over 910,919 acres of areas having been inventoried for noxious weeds.
- A total of 26,574 acres were certified under the Noxious Weed Free Forage and Straw Program.

Watercraft Inspection

Prevention of aquatic invasive species (AIS) is a significant component of the program. The 2019 season was the eleventh year of the watercraft inspection program, with 20 inspection stations operated statewide (Figure 1). In 2019, stations inspected 118,350 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).

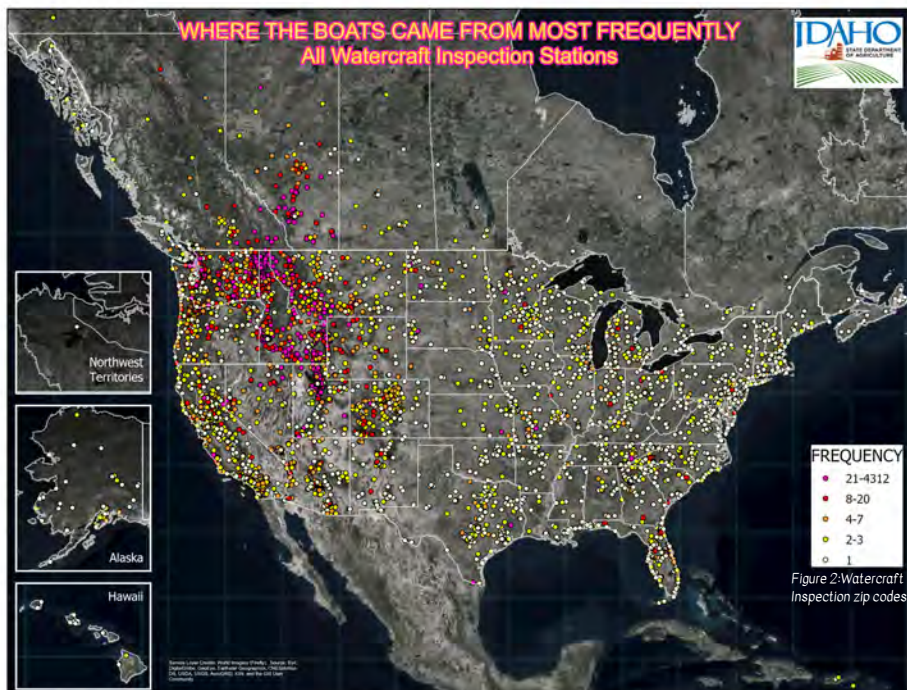
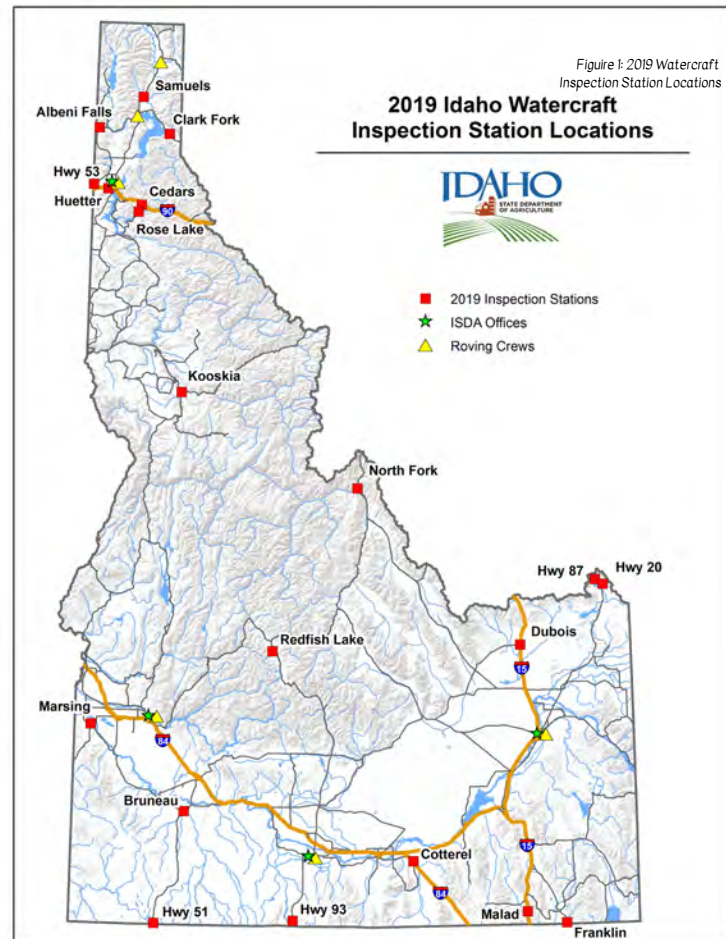
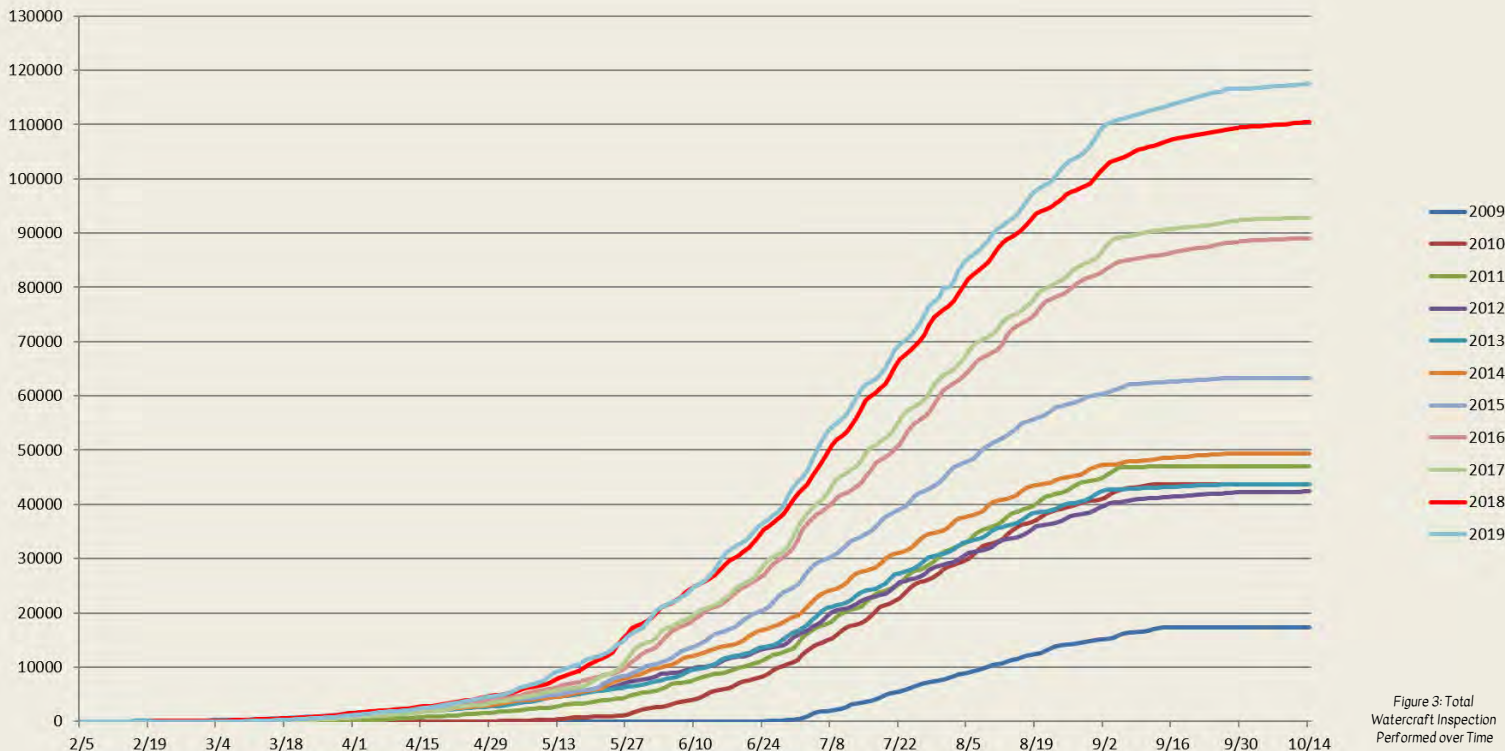


Figure 2: Watercraft Inspection zip codes

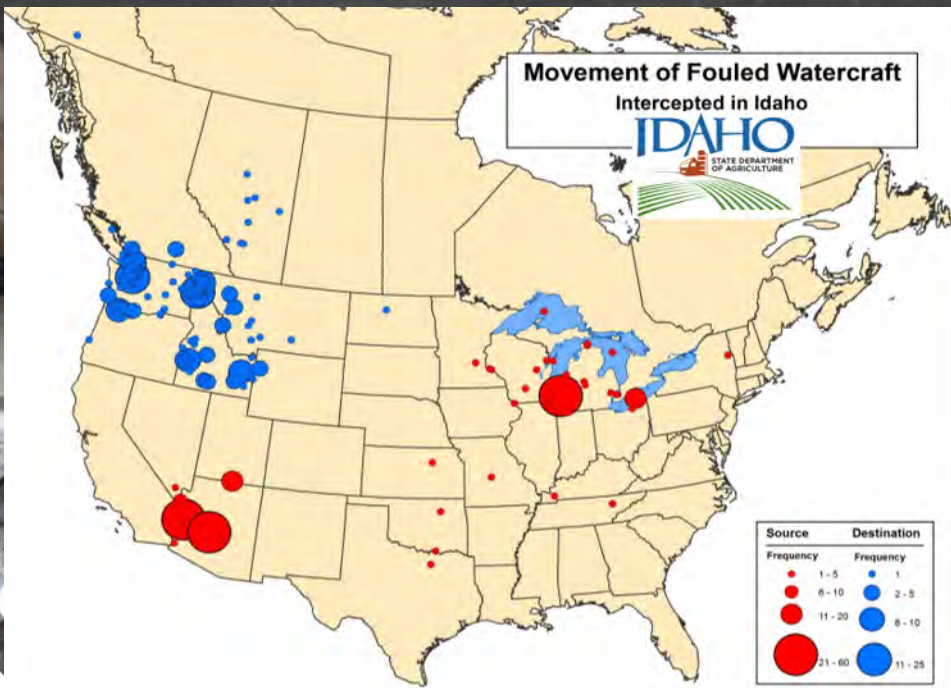


High Risk Inspections: 2,632 watercraft visited high-risk waters with zebra/quagga mussel infestations within the previous 30 days. Watercraft traveling from these areas represent the highest risk for transporting live zebra/quagga mussels into the state. Watercraft inspections at mussel-impacted waters are the most efficient and effective way to prevent the introduction of mussels into Idaho. 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/watercraft-inspection-stations>

Mussel-Fouled Watercraft: 45 watercraft were intercepted transporting zebra or quagga mussels in 2019. These vessels originated from mussel-impacted waters in the Southwest, as well as from waters in Michigan, Wisconsin, and Texas (Appendix 2). Eighteen 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 290 mussel-fouled vessels have been intercepted in Idaho since the program began in 2009 (Figure 4, page 26).

Additional watercraft inspection data from the 2019 season is displayed on the ISDA Invasive Species Program website at: <http://invasivespecies.idaho.gov/watercraft-inspection-stations/>.



CLEAN • DRAIN • DRY

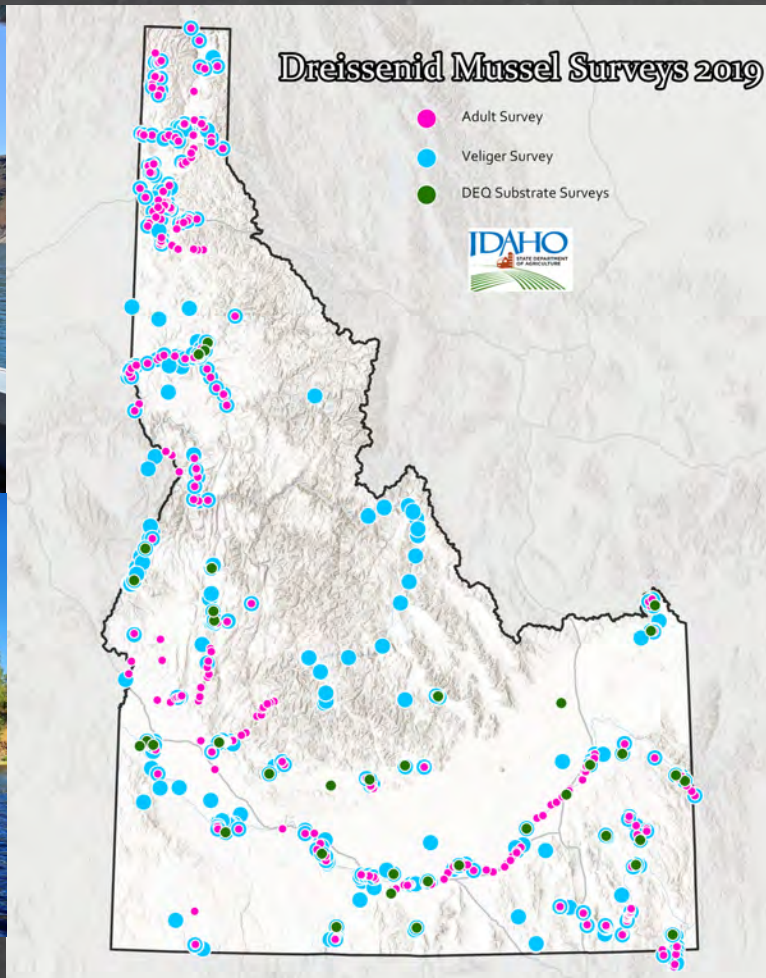
Idaho Watercraft Inspection Numbers by Station in 2019

Inspection Station	Inspections	Hotwash	Fouled	Weeds	Aquatic	Terrestrial
Albeni Falls	9,582	4	0	23	21	2
Bruneau	4,528	15	0	11	7	4
Cedars	13,468	201	11	175	155	20
Clark Fork	7,008	24	0	31	30	1
Cotterel	4,625	247	3	1	1	0
Dubois	1,292	17	0	1	1	0
Franklin	4,484	41	4	2	2	0
Huetter	13,849	13	0	170	128	42
Hwy 12 (Kooskia)	505	0	0	1	0	1
Hwy 20	6,724	2,738	1	10	6	4
Hwy 51 (Duck Valley)	351	10	0	4	4	0
Hwy 53	5,195	1	0	52	49	3
Hwy 87	6,244	2,007	1	4	1	3
IHwy 93	2,235	184	3	5	5	0
Malad	9,116	817	17	10	3	7
Marsing	2,443	34	0	11	8	3
North Fork	3,576	23	0	0	0	0
Redfish Lake	2,005	2	0	3	3	0
Rose Lake	3,909	2	0	35	30	5
Samuels	9,652	13	0	40	32	8
Boise Roving Crew	1,182	3	0	34	34	0
Twin Falls Roving Crew	445	2	0	11	8	3
Hayden Roving Crew	1,026	0	0	13	13	0
Sandpoint Roving Crew	787	0	0	81	66	15
Bonnars Ferry Roving Crew	17	0	0	0	0	0
Idaho Falls Roving Crew	581	0	0	1	1	0
Henrys Lake	3,180	11	0	0	0	0
ISDA Staff	212	4	5	2	2	0
Total	118,350	6,413	45	731	610	121



Invasive Species Early Detection Monitoring

ISDA's early detection monitoring program collected 1600 plankton samples from 80 waterbodies in Idaho in 2019. 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, the boating public, and private citizens 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, Paddle Sports Rendezvous, the BREN River Boogie, Green Sustainability Summit, Treasure Valley Boat Show, Western Whitewater Association, Idaho Whitewater Association, Boise Watershed Watch, and several more. Staff provided 22 watercraft inspection trainings, educating over 160 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 unveiled a new Invasive Species of Idaho website with the assistance of marketing experts at Drake Cooper in 2016. Two additional campaign messages were created, "Knock it Off" and "Know What You Grow," which added 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 generated in the same year to promote important campaign messages, form collaborative relationships, share ideas and articles, and drive internet traffic to the website for more detailed information. The programs website and social media presence is currently maintained in-house, with additional platforms utilized by our marketing agency to drive traffic to the website that include: radio spots, banner ads, and Pandora radio commercials, all of which are launched during peak season activities. Since its creation, The Invasive Species of Idaho website has generated over 410,000 page views with over 177,000 visits as of 2019.

Idaho Invasive Species Council



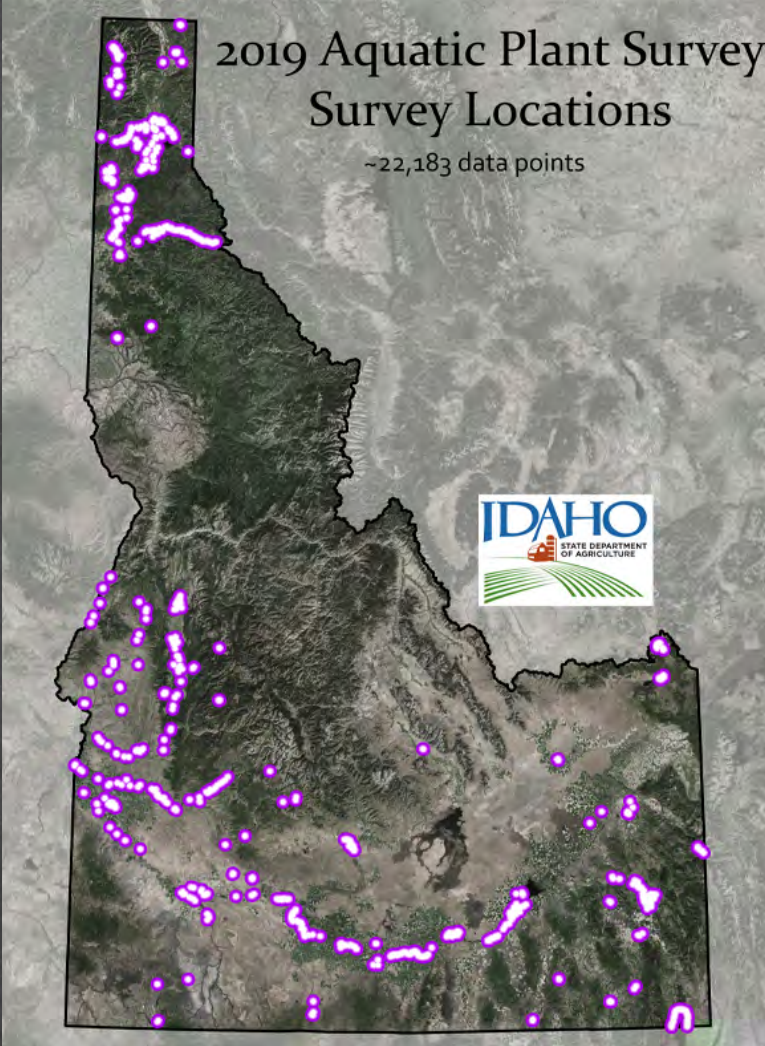
The Idaho Invasive Species Council (IISC) was created by Executive Order in 2001 as a forum for coordinating invasive species related efforts and initiatives in the state.

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. This is mainly due to its ability to out-compete native vegetation, which greatly degrades the aquatic habitat resulting in a greatly reduced biodiversity. EWM can form dense canopies or mats filling the entire water column in the littoral zone (where light can penetrate to the lake bed) of a waterbody. The results of which can lead to difficult access to waterways for recreation, fishing, and can result in a degrading property value. Eurasian watermilfoil for these reasons has earned it's place on the Idaho noxious weed list. During the 2019 season a total of 1,329 surface acres were chemically treated to reduce the populations infesting some of Idaho's waterways.

These treatments occurred in Hayden Lake, Cocolalla Lake, Lake Pend Oreille and the Pend Oreille River. Additionally thousands of pounds of EWM were removed by ISDA staff during several hand removal and suction removal projects. The projects occurred in Priest Lake, Round lake, Snake River (near Buhl), and Bear Lake. Also during the season a total of over 22,183 aquatic plant survey points were collected by field staff in an effort to pinpoint all known locations of Idaho's aquatic noxious weeds. This effort lead to the discovery of a new infestation in south east Idaho, in Bear lake in late September. ISDA will continue to survey and treat this new population in the coming years in an effort to control this species. (Aquatic Plant Survey Map, Bear lake Survey Map)

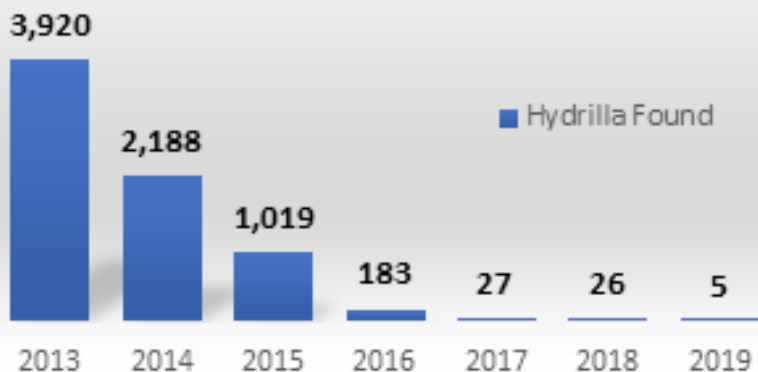




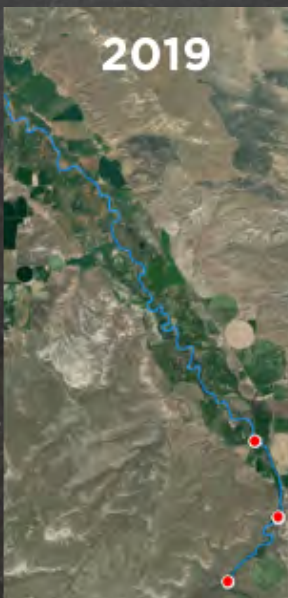
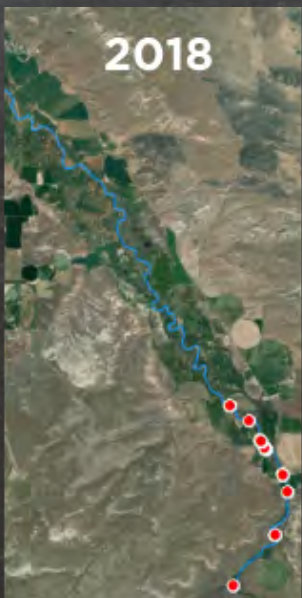
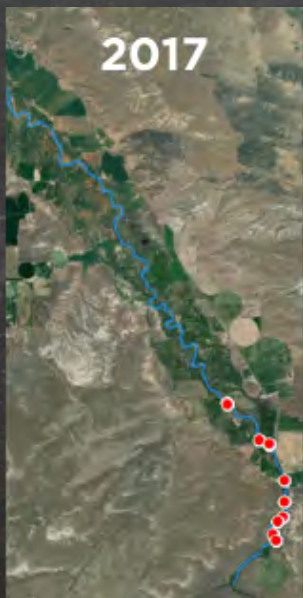
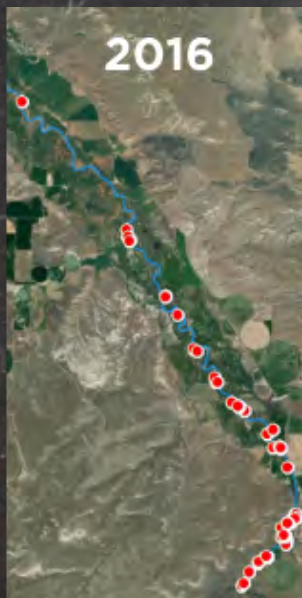
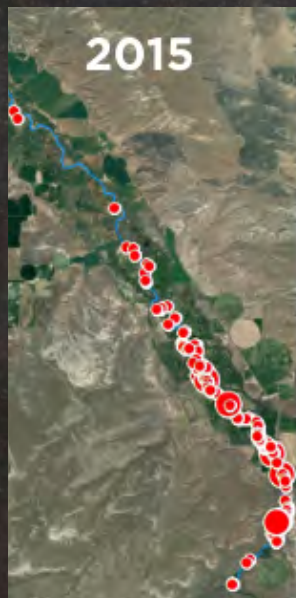
Hydrilla

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 is currently being observed. Plant surveys in 2019 found a decrease of overall hydrilla occurrence of 99.8% in the Bruneau River population with only 5 plants found this season. Eradication is hopeful for the Boise area population which is in its fourth consecutive year of 0 plants found.

Hydrilla Occurrence in the Bruneau River from 2013 to 2019

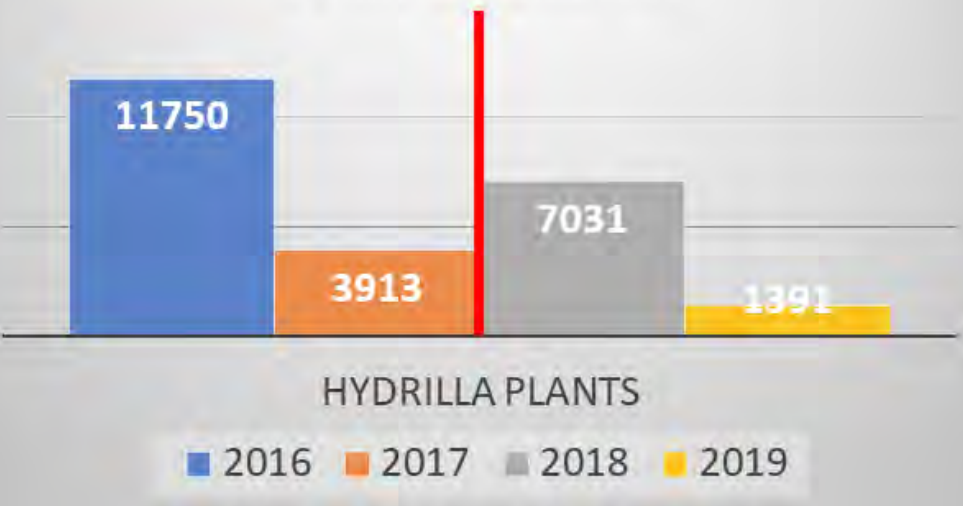


Hydrilla Occurrence in Boise Hot Ditch from 2013 to 2019



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. Additional populations were discovered in the Twin Falls infestation areas, that lead to a spike in number of plants in 2018. During the 2019 season these infestation populations have continued, with active management, to decrease. Management approaches have mirrored efforts in the Bruneau area and include manual, mechanical, and biological controls. 2019 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.

Hydrilla Plants Buhl & Twin Falls

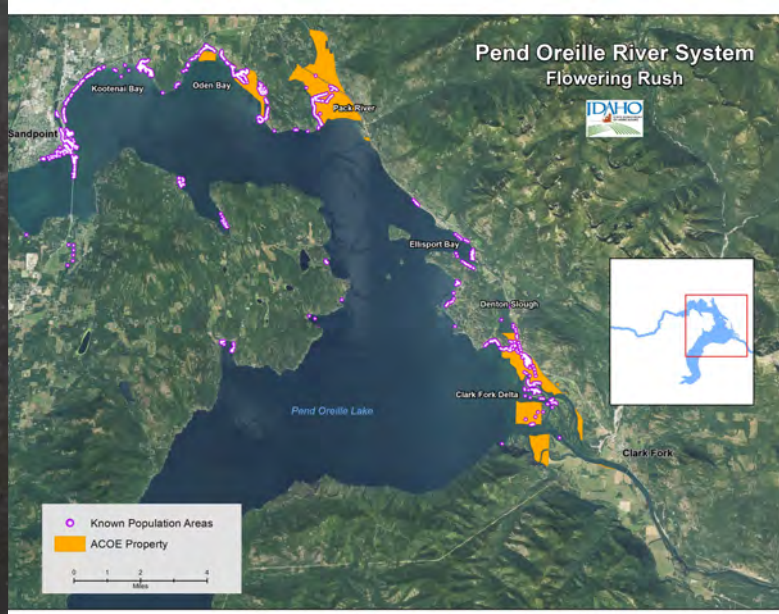
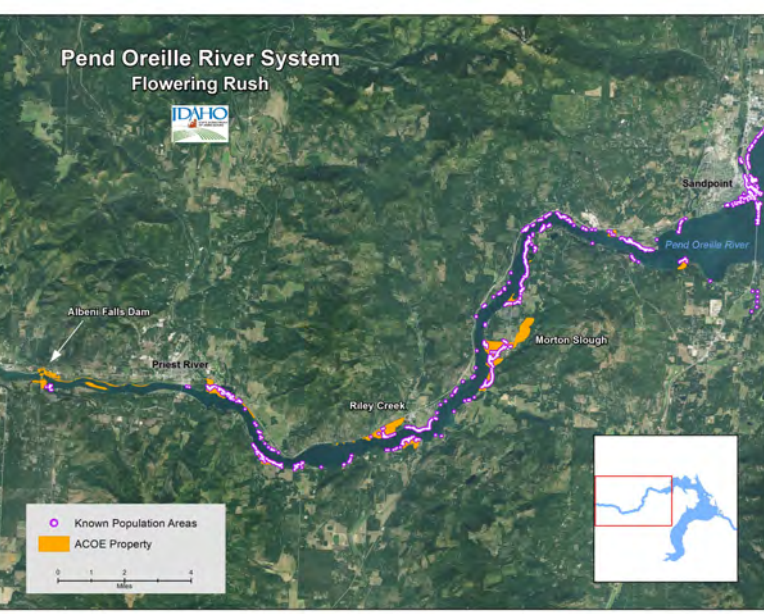
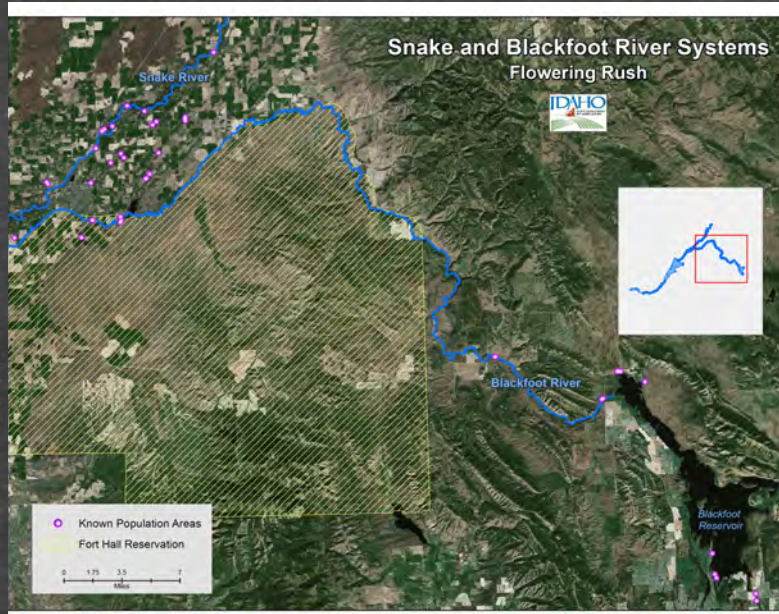
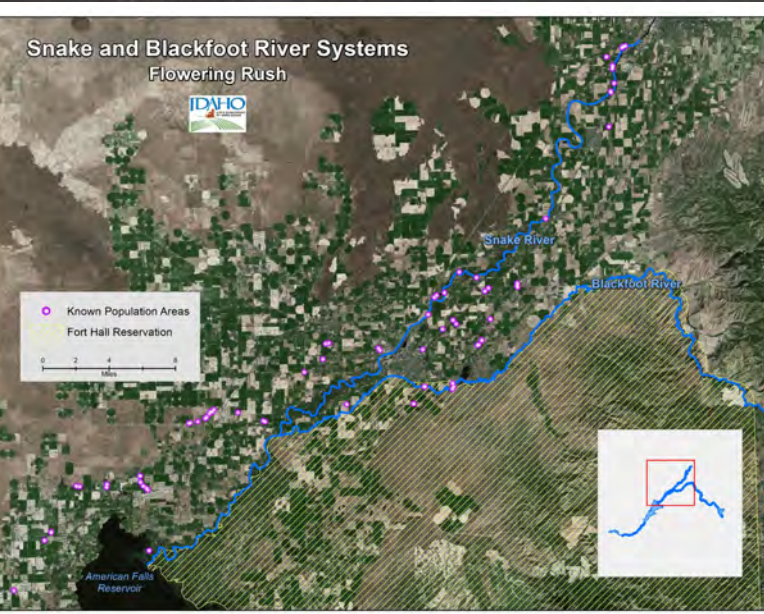
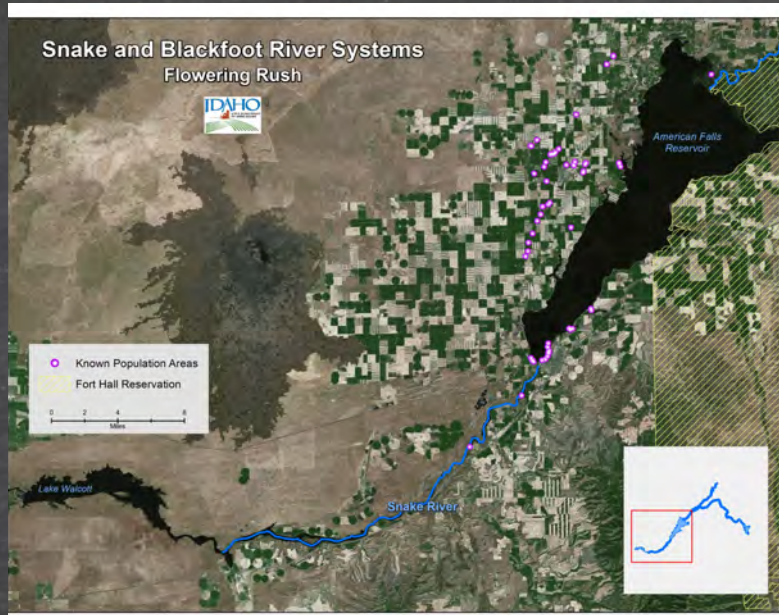


Flowering Rush

Flowering Rush is a submersed/emergent noxious weed that is expanding its presence in Idaho. It forms dense growth and causes significant problems for boating, fishing, 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 2019 ISDA surveyed known population areas to accurately capture the infestation of Flowering Rush in the state of Idaho. Survey crews were tasked with surveying three primary areas; Pend Oreille Basin, Blackfoot Reservoir, and the Snake and Blackfoot River from Gem Lake downstream. Hundreds of shoreline (river & lake) were surveyed during the 2019 season with a total of 9,625 individual surveys done.

Additionally ISDA staff removed hundreds of plants from low population density areas in an effort to start controlling the problematic species. The results of the 2019 surveys will assist in the development of treatment plans for Flowering Rush in 2020



CWMA Cost Share Program

ISDA facilitates a Noxious Weed Cost Share Program to assist Cooperative Weed Management Areas (CWMAs) throughout the state in the control of Idaho's noxious weeds. 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. These efforts help to protect wildland habitat, ecosystem diversity, recreational opportunities, and agriculture in Idaho.

In 2019, ISDA awarded over \$1.37 million dollars in cost share grants to 27 participating CWMAs. The CWMA cost share participants provided over \$4.1 million dollars in matching contributions, and treated over 129,267 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 970 thousand acres of previously uncharted lands. CWMA's also started to incorporate revegetation work to try and help lands to recover from the invasion of noxious weeds; CWMA's re-habilitated over 53,017 acres in 2019. The CWMAs also helped to educate citizens about the threat of noxious weeds, and they reached over 553,880 people in 2019. Table below are the CWMA cost share data for 2019.

CWMA	Total Award	Total In-Kind	Total Acres Treated (CH)	Total Acres Treated (MCH)	Acres Bio Control	Acres Inventoried	Acres Re-veg	Public Contacts
Adams	\$32,550.00	\$76,618.00	8,000.00	600.00	75.00	8,000.00	0.00	80.00
Blaine	\$11,550.00	\$22,653.00	152.00	0.00	1,000.00	1,050.00	0.00	120.00
Camas Creek	\$42,842.10	\$123,656.00	13,848.00	0.00	100.00	3,700.00	30.00	50.00
Clearwater Basin	\$65,751.00	\$93,791.00	2,119.00	0.00	0.00	8,191.00	104.00	116.00
Continental Divide	\$54,810.00	\$109,223.00	3,563.00	10.00	15.00	27,000.00	16.00	600.00
Eastern Owyhee	\$26,250.00	\$37,012.00	2,652.00	0.00	0.00	21,000.00	0.00	3,500.00
Frank Church	\$31,500.00	\$123,045.00	62.69	0.00	0.00	1,383.00	0.00	16.00
Henry's Fork	\$68,460.00	\$288,211.00	3,194.00	0.00	0.00	6,461.00	0.00	312.00
Highlands	\$24,675.00	\$29,628.00	15,000.00	0.00	0.00	150,000.00	1,500.00	3,500.00
Inland Empire	\$73,794.45	\$90,910.00	2,298.00	889.00	0.00	2,587.00	6.00	176,580.00
Jordan Valley	\$34,650.00	\$90,687.00	1,562.00	0.00	0.00	161,700.00	0.00	12,000.00
Joseph Plains	\$32,025.00	\$141,662.00	16,986.00	20.00	0.00	2,000.00	0.00	3,500.00
Lemhi	\$41,475.00	\$81,308.00	1,267.00	0.00	57.00	7,672.00	0.00	5,000.00
Lost Rivers	\$14,389.83	\$58,517.00	353.10	0.00	0.00	4,613.10	25.00	43.00
Lower Gem	\$7,350.00	\$47,315.00	694.00	0.00	20.00	4,333.00	0.00	102.00
Lower Weiser	\$20,895.00	\$505,511.00	3,513.64	0.00	315.00	8,078.21	0.00	117,700.00
Northside Tri-County	\$23,520.00	\$169,315.00	3,345.00	0.00	16.00	71,366.00	0.00	151.00
Northwest Owyhee	\$23,625.00	\$116,981.00	1,650.00	2,000.00	0.00	45,000.00	50,000.00	300.00
Palouse	\$39,322.50	\$121,449.00	897.00	3.00	95.00	3,730.00	21.00	185.00
Payette County	\$23,436.00	\$42,586.00	417.00	0.00	0.00	417.00	0.00	0.00
Power	\$23,625.00	\$60,784.00	771.00	0.00	6.00	47,000.00	15.00	2,695.00
Salmon River	\$81,375.00	\$133,178.00	13,089.00	3.00	0.00	114,000.00	0.00	11,550.00
Selkirk	\$46,200.00	\$117,237.00	4,581.00	200.00	125.00	13,255.00	50.00	15,000.00
Shoshone Basin	\$38,136.00	\$218,097.00	1,567.00	0.00	151.00	109,250.00	1,200.00	50,000.00
Upper Clearwater	\$76,125.00	\$138,053.00	5,908.00	1.00	0.00	5,908.00	0.00	5,500.00
Upper Payette	\$29,242.00	\$253,557.00	4,564.53	50.00	0.00	23,586.00	0.00	391.00
Upper Snake	\$64,851.15	\$343,552.00	3,482.50	0.00	0.00	58,586.00	0.00	20,000.00
Uath-Idaho	\$319,200.00	\$503,878.00	7,900.00	0.00	80.00	61,300.00	50.00	5,007.00
2019 Totals	\$1,371,025.53	\$4,138,414.00	123,436.46	3,776.00	2,055.00	970,753.31	53,017.00	553,880.00

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) 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 and owners 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, and the Bureau of Land Management; BLM; manages 11.8 million acres in Idaho. 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 6 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), South Western (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 2017-2020, ISDA has a statewide contract for use of Drexel 5% Carbaryl bait.

ISDA utilizes data collection tablets 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 forms to recording this information on electronic tablets. The data collection tools used in the field have 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" in the rest of the report) was the only insecticide distributed to landowners. In 2019 ISDA staff did not apply any bait to state lands or any Right of Ways. The bait was stored at 8 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, Latah and Oneida counties continued to be strong partners in the program, fielding complaints using the ISDA grasshopper/Mormon cricket website. County Weed Control offices in Elmore, Franklin, Gem, and Oneida 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.

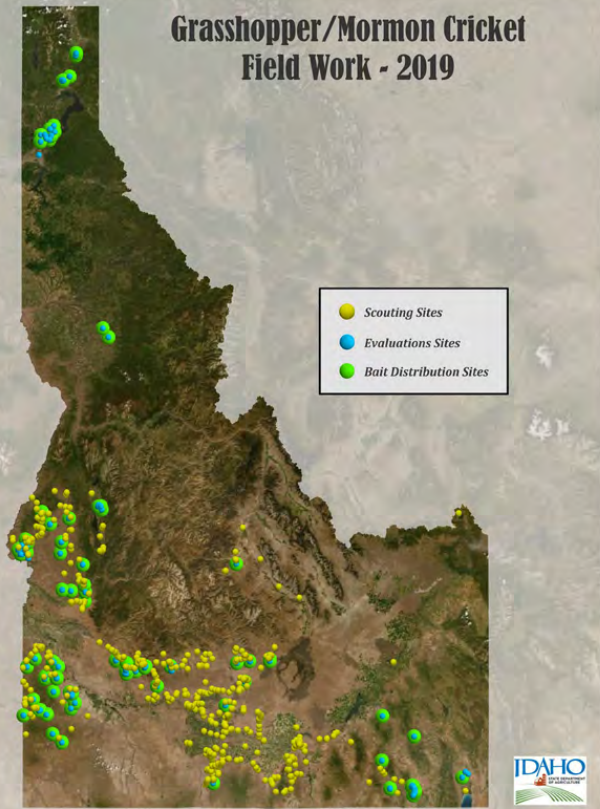


Summary of Grasshopper Action Statewide

Statewide, there were 57 landowner complaints, and 29,320 lbs of bait were distributed to landowners in 21 counties; a decrease from the total of 121,660 lbs that was distributed in 2018.

In addition to the bait that was distributed through the ISDA, we also reimbursed four 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 695 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 Action By Region

North Idaho

Northern Idaho received slightly below normal precipitation during the winter and spring (January 1 to June 30). The month of May received below normal precipitation which coincided with some of the grasshopper hatching. June had normal precipitation. February through June was cooler than normal. The first day above 50 °F; the temperature at which grasshopper development begins; was on March 21st, which is about a week earlier than normal for the 30 year average. The first 2 grasshopper complaints were received on June 11th, however, subsequent complaints did not come in until about 4 weeks later.

There were 21 complaints across 4 counties; of those 19 met the ISDA requirements and wished to receive assistance in the form of bait. Total bait distribution in Northern Idaho was 8,440 lbs; which was an increase from the 6,780 lbs that was distributed in 2018. Kootenai County received over half of the complaints this year.

Northern Idaho Private Landowner Grasshopper Complaints and Bait Distribution

County	Number of Complaints	Number of Landowners that received bait	Carbaryl Bait Distributed (lbs)
Bonner	3	3	3320
Boundary	3	2	280
Idaho	3	3	320
Kootenai	12	11	4520
Totals	21	19	8440

Southwestern Idaho

Southwestern Idaho received above normal precipitation during the winter and spring. May received record amount of rainfall (4"). It was warmer than normal in January, colder than normal in February, however, the remainder of the winter and spring months were normal. The first day above 50 °F was on January 9th, which is much earlier than the 30 year average of March 2nd. Scouting began in Washington County in early April; however, the first grasshopper complaint was not received until June 3rd in the Boise County.

There were a total of 16 complaints across 8 counties, and 13 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 8,360 lbs; which was a decrease of the 52,800 lbs of bait that was distributed in 2018. Valley County had 4 complaints in late August. In addition, there were 3 landowner reimbursements in the Southwestern Region. Two of those reimbursements were in Camas and Elmore County where alfalfa fields had significant infestations.

Southwestern Idaho Private Landowner Grasshopper Complaints and Bait Distribution

County	Number of Complaints	Number of Landowners that received bait	Carbaryl Bait Distributed (lbs)
Adams	1	1	160
Boise	3	3	520
Camas	1	0	0
Elmore	2	1	80
Gem	2	2	2920
Owyhee	1	1	480
Valley	4	3	2760
Washington	2	2	1440
Totals	16	13	8360

South-Central Idaho

South-Central Idaho received below normal precipitation during the winter and spring; however, February and May were above average. Temperatures were below average in February and March, however, normal from April to June. The first day above 50 °F was on January 27th, which is much earlier than the 30 year average of March 15th. Scouting began the first week of May but the first complaint was not received until July 8th in Blaine County.

There were 9 complaints across 4 counties, and 8 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 4,680 lbs; which was a decrease of the 2018 total of 13,520 lbs. Between 2016 and 2018, Cassia, Gooding, Jerome, and Twin Falls Counties had numerous complaints, however, this year; there were none in these counties with the exception of 1 complaint in Twin Falls County. There was one landowner with large acreage reimbursement in Blaine County.

The state range-land in the Cotterell area, located adjacent to the junction of Highway 84 and Highway 86 in Cassia County (aerially treated in 2016 with Dimilin 2L, 6,626 acres) was surveyed frequently in 2019. 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	Carbaryl Bait Distributed (lbs)
Blaine	5	4	3000
Custer	1	1	600
Lincoln	2	2	680
Twin Falls	1	1	400
Totals	9	8	4680



Eastern Idaho Private Landowner Grasshopper Complaints and Bait Distribution

County	Number of Complaints	Number of Landowners that received bait	Carbaryl Bait Distributed (lbs)
Bannock	2	2	1680
Bear Lake	1	1	400
Bingham	1	0	0
Franklin	1	0	0
Oneida	6	3	5760
Totals	11	6	7840

Eastern Idaho

Eastern Idaho received less precipitation than normal during the winter and spring, especially in May and June, and the temperatures were normal for the winter and spring. The first day above 50 °F was on March 17th, which was later than the 30 year average of March 2th. Scouting began in mid-May and the first complaint was received on July 2nd in Malad, which is located in Oneida County.

Bait was distributed from the Oneida County Road and Bridge facility and Franklin County Weed Control. There were 11 complaints in this region, and 6 landowners met the ISDA requirements and wished to receive assistance in the form of carbaryl bait. The total bait distribution in Eastern Idaho was 7,840 lbs; which was a decrease of the 48,560 lbs of bait distributed in 2018.

Summary of ISDA Grasshopper Program

In summary, the cost of insecticides to assist landowners statewide decreased in 2019; from \$105,269.54 in 2018 to \$54,554.57 for 2019. The amount of bait used in 2019, 29,320 lbs, was a decrease from the 121,660 lbs that were distributed in 2018; however, Landowner reimbursement costs in 2019, \$27,873.37, were more than the 2018 total of \$5,630.

Pesticides Distributed/Reimbursed Statewide for Grasshopper Control

	Lbs (\$.91/lb)	Value
Carbaryl 5% Bait, Ground	29,320	\$26,681.20
Landowner Reimbursement Program (this program reimbursed only the insecticide & adjuvant costs) Ground & Aerial Application		\$27,873.37
Total		\$54,554.57





Summary of Mormon Cricket Actions Statewide

All regions of Idaho (except Northern Idaho) received Mormon cricket complaints. Statewide, there were 80 landowner complaints, and 41,960 lbs of bait were distributed to landowners in 8 counties; a decrease from the total of 127,840 lbs that was distributed in 2018.

In Southwestern Idaho, the first day over 41°F temperature at which Mormon cricket development begins, was January 7th; which is earlier than the 30 year average of February 4th. Scouting began in early April and the first complaint was received on April 17th in Weiser. There were 61 landowner complaints, of those, 45 landowners met the ISDA requirements and wished to receive assistance in the form of carbaryl bait. The total bait distribution in Southwestern Idaho in 2019 was 36,440 lbs; which was a decrease from the 2018 total of 126,800 lbs. Owyhee, Elmore, and Washington Counties were where most of the complaints occurred. In Owyhee County outbreaks were concentrated in Murphy, Melba, Givens Hot Springs, Grandview, Oreana, Reynolds, and South Mtn Rd (south of Jordan Valley). Over 17,920 lbs of bait was distributed in Owyhee County. In Washington County outbreaks were concentrated north of Weiser, Midvale, and Cambridge; 11,800 lbs were distributed in this county. In Elmore County, outbreaks were concentrated in Mountain Home; 6,160 lbs were distributed in this County.

Southwestern Idaho Mormon Cricket Complaints and Bait Distribution

County	Number of Complaints	Number of Landowners that received bait	Carbaryl Bait Distributed (lbs)
Boise	1	1	400
Elmore	15	13	6160
Gem	2	1	160
Owyhee	28	23	17920
Washington	15	7	11800
Total	61	45	36440

South-Central Idaho Mormon Cricket Complaints and Bait Distribution

County	Number of Complaints	Number of Landowners that received bait	Carbaryl Bait Distributed (lbs)
Elmore	2	2	1080
Total	2	2	1080

Eastern Idaho Mormon Cricket Complaints and Bait Distribution

County	Number of Complaints	Number of Landowners that received bait	Carbaryl Bait Distributed (lbs)
Franklin	16	13	4280
Oneida	1	1	160
Total	17	14	4440

APHIS conducted large acreage aerial Diflubenzuron and Carbaryl bait treatments on Federal lands in Owyhee County; in addition APHIS also applied ground treatment of Carbaryl bait on Federal Lands in Owyhee County.

In South-Central Idaho, the first day over 41°F was January 5th, which is earlier than the 30 year average of February 19th. Scouting began in May and the first complaint was received on June 17th in Glens Ferry. There were 2 landowner complaints, and both landowners met the ISDA requirements and wished to receive assistance in the form of carbaryl bait, 1,080 lbs.

In Eastern Idaho, the first day over 41°F was February 3rd, which is consistent with the 30 year. Scouting began in May and the first complaint was received on July 2nd in Malad. There were 17 landowner complaints, of those, 14 landowners met the ISDA requirements and wished to receive assistance in the form of carbaryl bait, 4,440 lbs. The majority (16 of 17) of the complaints were concentrated in Franklin County in Clifton, Dayton, and Weston.

2019 Pesticides Distributed Statewide for Mormon Cricket Control

	Lbs (\$.91/lb)	Value
Private Landowners	41,960	\$38,183.60
State Land and Right- of-way Treatments	0	\$0.00
Landowners Reimbursement Program (this program reimbursed only the insecticide & adjuvant costs) Ground & Aerial Application		\$1,960.41
Total	41,960	\$40,144.01

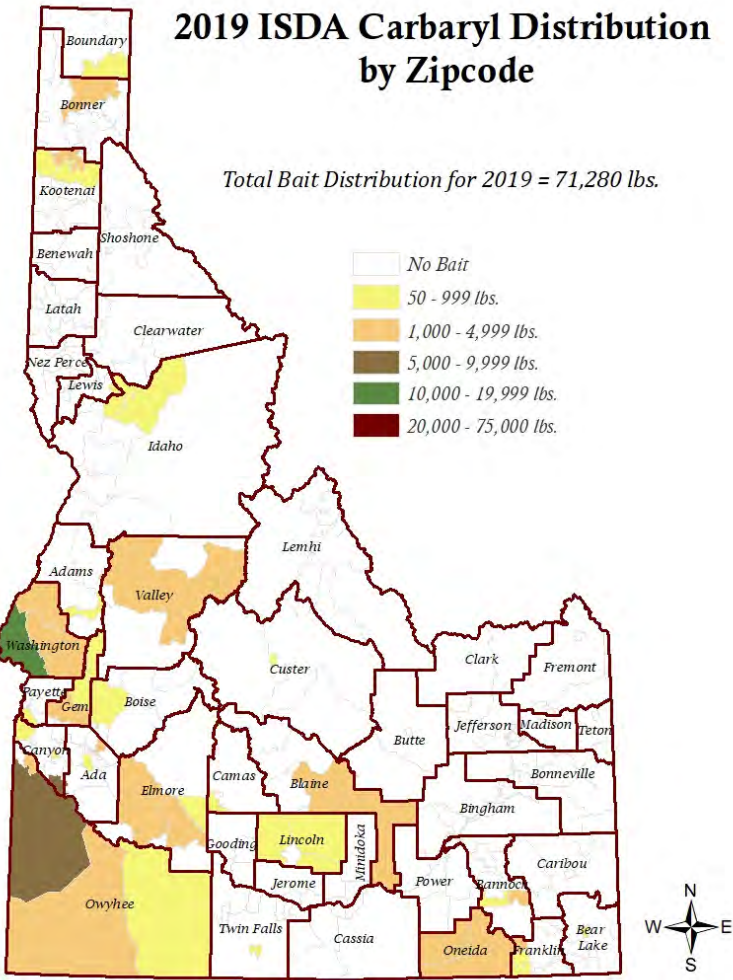
Summary of ISDA Grasshopper and Mormon Cricket Program

In 2019, ISDA continued to suppress outbreaks of grasshoppers and Mormon crickets. There were 137 complaints and 107 private landowners in 22 counties that received assistance in the form of bait. A landowner reimbursement program was again implemented for qualified landowners and 7 landowners (1783 acres) participated in 6 counties.

For additional information, go to the ISDA website www.agri.idaho.gov and search under the Plants and Insects tab for the Grasshopper/Mormon Cricket Program.

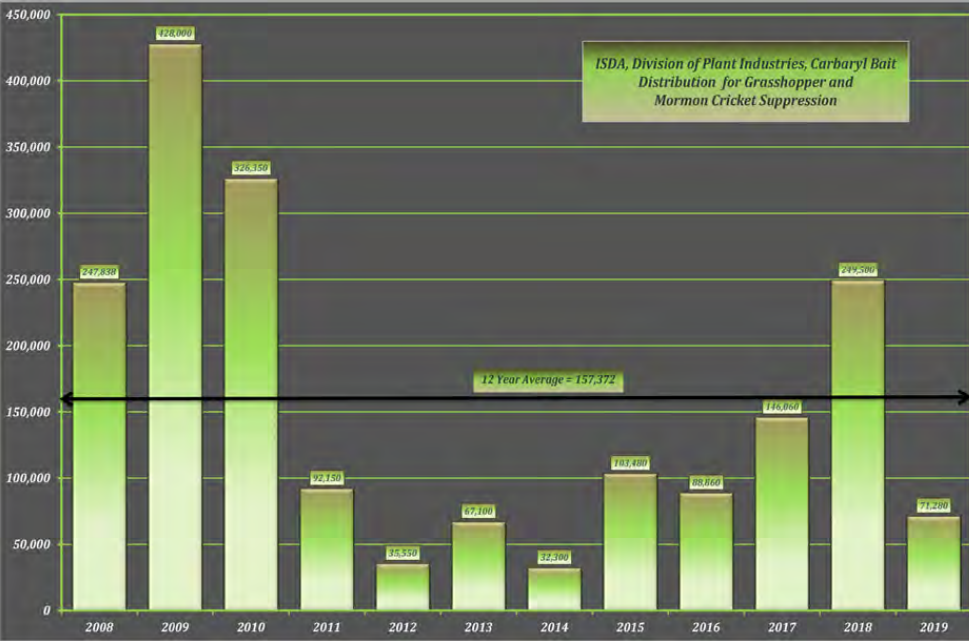
2019 ISDA Carbaryl Distribution by Zipcode

Total Bait Distribution for 2019 = 71,280 lbs.



2019 Number of Complaints and Bait Distributions for Grasshopper and Mormon Cricket Suppression (this includes ROW and other State Land Applications, when applicable) in each County

Rank	County	Number of Complaints	Number of Landowners that received bait	Carbaryl Bait Distributed (lbs)
1	Owyhee	29	24	18,400
2	Washington	17	9	13,240
3	Elmore	19	16	7,320
4	Oneida	7	4	5,920
5	Kootenai	12	11	4,520
6	Franklin	17	13	4,280
7	Bonner	3	3	3,320
8	Gem	4	3	3,080
9	Blaine	5	4	3,000
10	Valley	4	3	2,760
11	Bannock	2	2	1,680
12	Boise	4	4	920
13	Lincoln	2	2	680
14	Custer	1	1	600
15-tied	Bear Lake	1	1	400
16-tied	Twin Falls	1	1	400
17	Idaho	3	3	320
18	Boundary	3	2	280
19	Adams	1	1	160
20	Camas	1	0	0
21	Bingham	1	0	0
Total		137	107	71,280



Major Cooperators for the Grasshopper/Mormon Cricket Program

During the 2019 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, Moscow, and Mountain Home)
- Oneida County Road and Bridge
- Oneida County Weed Control
- Pineview Horticulture Services, LLC, Hayden
- 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
- University of Idaho, Extension Service, Oneida County, Idaho



2019 Plant Industries Public Outreach and Educational Presentations

DATE	ISDA STAFF	EVENT	TARGET AUDIENCE
1/4-6/2019	Bethany Muffley/ Phoebe Wallace	Informational Booth and Demonstration on Aquatic Invasive Species	Boise Boat Show
1/10/2019	Dan Safford	Far West Agribusiness Association Conference	Agronomists & Farmers
1/14/2019	Jeremy Varley	Idaho Association of Weed Control Superintendents	Weed Superintendents
1/16/2019	Jeremy Varley	Idaho Noxious Weed Annual Conference	General Public
1/16-18/2019	Plants Team	Informational Booth and Demonstration on Aquatic Invasive Species	Idaho Horticulture Expo
1/21/2019	Dan Safford	Informational Booth and Demonstration on Aquatic Invasive Species	Weed Superintendents and Professional Applicators
1/23/2019	Kim Holzer	Avista Wetlands	Utility
1/31/2019	Paul Castrovillo	Canyon County Extension: Degree-Day Calculation and Predictive Modelling for Insect Pests	Advanced Master Gardeners
2/4/2019	Cole Morrison	Henry's Fork Foundation Quarterly Meeting	Henry's Fork Stakeholders
2/6/2019	Paul Castrovillo	College of Western Idaho: Sharing the World with Bugs/ISDA's War on Invasive Insect Pests	Insect and Disease Horticulture Class
2/13/2019	Bethany Muffley	Aquatic Invasive Plant and Animal ID	Idaho Power Hosted Irrigation Workshop in Mountain Home
2/13/2019	Jeremy Varley	Legislative luncheon	Legislators
2/20/2019	Cole Morrison	Malad WIT	Check Station Employees
2/20-22/2019	Jeremy Varley	North Idaho Partner Meetings(5)	General Public
2/21/2019	Lloyd Knight	Bonner County	General Public
2/22/2019	Lloyd Knight	Kootenai Tribe of Idaho	Tribe
2/25/2019	Kim Holzer	Boundary Co. Commissioners	County Commissioners
2/26/2019	Paul Castrovillo	Idaho State Department of Agriculture: JB, BMSB and Spotted Lanternfly Updates	ISDA Field Investigators and staff
2/26/2019	Jeremy Varley	Union Pacific Railroad Meeting	Weed Control Professionals
2/26/2019	Dan Safford	Noxious Weed Free Forage & Straw Inspector Training, Twin Falls	Weed Superintendents
2/27/2019	Dan Safford	Noxious Weed Free Forage & Straw Inspector Training, Pocatello	Weed Superintendents
3/1/2019	Paul Rhoades	Northwest Expedition Academy	Students

2019 Plant Industries Public Outreach and Educational Presentations

DATE	ISDA STAFF	EVENT	TARGET AUDIENCE
3/3-4/2019	Aaron Ursenbach	Hwy 93 and Cotterell WIT	Mid Snake RCD & West Cas- sia SWCD Boat Inspectors
3/5/2019	Dan Safford	Noxious Weed Free Forage & Straw Inspector Training, Meridian	Weed Superintendents & their staff
3/6/2019	Dan Safford	Noxious Weed Free Forage & Straw Inspector Training, Idaho Falls	Weed Superintendents & their staff
3/6/2019	Kim Holzer	WIT K55WCD	SWCD
3/7/2019	Dan Safford	Noxious Weed Free Forage & Straw Inspector Training, Salmon	Weed Superintendents & their staff
3/7/2019	Paul Castrovillo	Bown Crossing Library: Pollinators ... and Other Insects That Need Our Help	General Public
3/7/2019	Bethany Muffley	Idaho Watercraft Inspection Training	Marsing Inspection Training - Sherrif's office
3/7/2019	Kim Holzer	Avista Weeds	Utility
3/7/2019	Jeremey Varley	HLWID	General Public
3/7/2019	Jeremey Varley	Cocolalla Lake Association	General Public
3/8/2019	Jeremey Varley	Hayden Lake	General Public
3/8/2019	Bethany Muffley	Idaho Watercraft Inspection Training	Bruneau & Marsing Station Training in Murphy, Idaho
3/12/2019	Paul Castrovillo	Idaho Botanical Garden: Sharing the World with Bugs/Pollinators ... and Other Insects That Need Our Help	Boise Master Naturalists
3/12/2019	Dan Safford	Noxious Weed Free Forage & Straw Inspector Training, Lapwai	Weed Superintendents & their staff
3/13/2019	Cole Morrison	University Seminar (Field Techniques in Natural Resources)	Students
3/13/2019	Dan Safford	NWFF&S	State
3/14/2019	Kim Holzer	Idaho Co. Invasive Species workshop	County
3/14/2019	Bethany Muffley	Aquatic Invasive Plant and Animal ID	Idaho Power Hosted Irrigation Workshop in Parma
3/19/2019	Bethany Muffley	Social Media Outreach for Noxious Weed Profes- sionals	SVI/WCA Spring Meeting in Caldwell
3/20/2019	Cole Morrison	Teton County Weed Seminar	Noxious Weed Professionals
3/21/2019	Paul Rhoades	Big Horn Outdoor Adventure Show	Recreation
3/25/2019	Cole Morrison	Preston WIT	Check Station Employees

2019 Plant Industries Public Outreach and Educational Presentations

DATE	ISDA STAFF	EVENT	TARGET AUDIENCE
3/27/2019	Bethany Muffley	Idaho Watercraft Inspection Training	Marsing Inspection Training - Sheriff's office
3/27/2019	Jeremey Varley	Hayden Lake Watershed Group	Homeowners in and around Hayden lake
3/28/2019	Bethany Muffley	Invasive Species and Noxious Weeds	Ponderosa Pine State Park - McCall Master Naturalists
4/1/2019	Bethany Muffley	Idaho Watercraft Inspection Training	Duck Valley Indian Reservation Inspection Staff Training
4/5/2019	Paul Castrovillo	Deer Flat NVWR: Sharing the World with Bugs/ Update on Deer Flat Insect Biodiversity Survey	Deer Flat National Wildlife Refuge Master Naturalists
4/10/2019	Dan Safford	NVWF&S	State
4/11/2019	Kim Holzer	Environmental Science & Health Fair	County
4/18/2019	Paul Castrovillo	Oxford Suites: Short Course on Pollinator ID	BLM Assessment, Inventory & Monitoring Terrestrial Field Methods course attendees
4/19/2019	Paul Castrovillo	Idaho Center for Outdoor Education: Insects in the Ecosystem and the Effects of Invasive Pests	Students, Parents, Teachers
4/20/2019	Paul Castrovillo	Marianne Williams Park: Insect ID	Boise Parks & Rec BioBlitz attendees
4/22/2019	Aaron Ursenbach	Sustainability Fair @ CSI (3 hour event We highlighted invasive Pest identification, Utilized the event for employment recruiting)	Collage students deciding a career path
4/23/2019	Kim Holzer	Rathdrum Prairie	County
4/25/2019	Kim Holzer	University of Idaho (FISHWLF 102)	University
4/28/2019	Kim Holzer	Coeur d'Alene Earth Day	Town
5/1/2019	Kim Holzer	WIT KKS WC D	SWCD
5/1/2019	Cole Morrison	Twin Lakes Canal Board Employee training	Twin Lakes Canal Board
5/5/2019	Paul Castrovillo	Deer Flat NVWR: Insects in the Ecosystem Hike	College of Idaho students
5/8/2019	Paul Castrovillo	Sawtooth Middle School: Identifying Aquatic Inver-	Students
5/8/2019	Kim Holzer	WIT BSWCB	SWCD
5/9/2019	Jeremey Varley	Idaho Invasive Species Council spring meeting	Committee members and
5/9-10/2019	Aaron Ursenbach	North Fork WIT	Lemhi County Boat Inspectors

2019 Plant Industries Public Outreach and Educational Presentations

DATE	ISDA STAFF	EVENT	TARGET AUDIENCE
5/13/2019	Aaron Ursenbach	Redfish WIT	ISDA Boat Inspectors
5/15/2019	Cole Morrison	87 & 20 WIT Training	Check Station Employees
5/16/2019	Phoebe Wallace	Noxious Weed ID and prevention, 3rd-5th graders	Bike Day in Council?
5/16/2019	Kim Holzer	Pen Oreille Water Summit	SWCD
5/18/2019	Kim Holzer	WIT K5SWCD	SWCD
5/21/2019	Bethany Muffley/ Phoebe Wallace	Watercraft Decontamination Exercise for Rapid Response Meeting (Nic presented at this one too)	Hells Canyon
5/21/2019	Paul Rhoades	Youth Water Summit	K12
5/21/2019	Cole Morrison	Cedars WIT	Check Station Employees
5/22/2019	Cole Morrison	Cedars WIT	Check Station Employees
5/22/2019	Kim Holzer	WIT Kooskia	General Public
5/25/2019	Cole Morrison	Dubois Check Station WIT	Check Station Employees
5/27/2019	Cole Morrison	Idaho Master Naturalist Idaho Falls Chapter	General Public
5/28/2019	Paul Castrovillo	Eagles' Lodge: Foulbrood Diseases of Honey Bees	Treasure Valley Beekeepers Club
5/30/2019	Paul Castrovillo	Boise State University: The World's War on Invasive Insects	Osher Institute students
5/30/2019	Kim Holzer	Capital For A Day	State
6/8/2019	Paul Castrovillo	Deer Flat NVR: Ask an Entomologist	Get Outdoors! Festival attendees
6/13/2019	Bethany Muffley	Social Media Outreach for Noxious Weed Professionals	Washington County Weed Tour, Weiser
6/17/2019	Cole Morrison	Idaho Master Naturalist Pocatello Chapter	General Public
6/19/2019	Kim Holzer	Lakes Commission	General Public
6/22/2019	Paul Castrovillo	Garden City Public Library: Bee City Pollinator Celebration	General Public
6/27/2019	Bethany Muffley	Social Media Outreach for Noxious Weed	Adams County Weed Tour, New
7/16/2019	Kim Holzer	Discovery Camp	Camp
7/16/2019	Aaron Ursenbach	Hwy 93 WIT	West Cassia SWCD New Hire Boat Inspectors

2019 Plant Industries Public Outreach and Educational Presentations

DATE	ISDA STAFF	EVENT	TARGET AUDIENCE
7/17/2019	Jeremy Varley	Middle Snake regional water resource commission	Water users in Twin Falls Area
7/19/2019	Paul Castrovillo	Global Gardens: Bees, Beetles, Butterflies, Oh My: A Pollinator & Beneficial Field Day	General Public
7/25/2019	Kim Holzer	Avista Weeds	Utility
7/31/2019	Paul Castrovillo	Ada County Extension: ISDA's War on Invasive Insect Pests	Advanced Master Gardeners class
8/5/2019	Aaron Ursenbach	North Fork WIT	Lemhi County New Hire Boat Inspectors
8/9/2019	Aaron Ursenbach	Cotterell WIT	West Cassia SWCD New Hire Boat Inspectors
8/15/2019	Jeremy Varley	Hayden Lake Watershed Group	Homeowners in and around Hayden lake
8/16/2019	Jeremy Varley	Cocolalla Lake Association	Homeowners in and around Cocolalla lake
8/19/2019	Paul Castrovillo	Albertson's Booth: Ask an Entomologist	Western Idaho Fair attendees (public)
8/24/2019	Paul Castrovillo	Idaho Botanical Garden Bug Day: Ask an Entomologist	Bug Day attendees (public)
9/18-19/2019	Bethany Muffley/ Phoebe Wallace	Invasive Species in Idaho - Train the Trainer	Watershed Watch at Boise
10/1/2019	Paul Castrovillo	Full Life Family Church: Insects and People	Magic Valley Homeschool Helpers; grade school students
10/3/2019	Paul Rhoades	Inland Empire CWMA	CWMA
10/4/2019	Jeremy Varley	Lakes Commission	General Public
10/5/2019	Bethany Muffley/ Phoebe Wallace	Invasive Species and Water Quality Demonstration in the Boise River	Watershed Watch, Julia Davis Park in Boise
10/9/2019	Jeremy Varley	CDC GIS training	CDC GIS techs and analysts from Idaho
10/10/2019	Bethany Muffley	Social Media Outreach for Noxious Weed Professionals	58th Annual Conference of the NW Mosquito and Vector Control Association, Boise
10/17/2019	Jeremy Varley	Idaho Noxious Weed Summit	General Public/Weed Control Professionals
10/22/2019	Kim Holzer	Coeur d'Alene Tribe Water Potato Festival	Tribe
10/26/2019	Kim Holzer	Southside Harvest Festival	General Public
10/28/2019	Bethany Muffley	Pesticide Recertification Training - Monitoring in IWM Plan	Pesticide Recertification Training, McCall City Hall

2019 Plant Industries Public Outreach and Educational Presentations

DATE	ISDA STAFF	EVENT	TARGET AUDIENCE
11/6/2019	Paul Castrovillo	Canyon Crest Event Center: Watching for Invasive Insect Pests	Idaho Association of Plant Protection annual meeting attendees
11/6/2019	Bethany Muffley	Invasive Species in Idaho and Watercraft Inspection Information	Idaho Whitewater Association, Aire Shop in Meridian
11/12/2019	Kim Holzer	Palouse CMVA	CVMA
11/18/2019	Aaron Ursenbach	Environmental Science Class @ CSI (1 hour lecture on the impact of invasive species, Idaho's response and how the community can get involved.)	College students deciding a career path
11/21/2019	Dan Stafford	Far West agribusiness Association Conference Grasshopper and Mormon cricket biology and Mgmt.	Agronomists & Farmers
11/21/2019	Kim Holzer	Coeur d' Alene High School	K12
11/21/2019	Jeremy Varley	Southwest Weed Control Association	Noxious Weed Professionals
11/25/2019	Kim Holzer	Clearwater CVMA	CVMA
12/3/2019	Jeremy Varley	Western Weed Coordinating Committee	State Weed Managers from the Western US
12/10/2019	Bethany Muffley	Pesticide Recertification Training - Monitoring in IWM Plan	Owhyee County Soil Conservation District, at the Extension office in Marsing
12/11/2019	Bethany Muffley	Pesticide Recertification Training - IWM for Aquatic Noxious Weeds	Canyon County U of I Extension - Caldwell Police Department
12/12/2019	Bethany Muffley	Pesticide Recertification Training - Monitoring in IWM Plan	Gern County U of I Extension - Emmett City Hall
12/12/2019	Jeremy Varley	Inovations in Invasive Species Management Conference	Invasive Species Scientists and Weed Professionals
12/19/2019	Kim Holzer	Joint Permit Application Coordination	State



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ISDA Division of Plant Industries Contacts

ISDA Contacts: <https://agri.idaho.gov/main/plants/plants-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>

