



Idaho State Department of Agriculture 2013 Grasshopper and Mormon Cricket Suppression Program Summary

Introduction

Grasshoppers and Mormon crickets continue to be 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, APHIS. Congress addressed this issue in 2004 with special one-time funding to the impacted states of Idaho, Utah and Nevada.

Background

Sixty-four percent of Idaho lands are administered by the Federal Government. Forty-three percent or 21.8 million acres in Idaho is classified for use as rangeland. The Bureau of Land Management administers 11.8 million acres in Idaho, much of it prime grasshopper/Mormon cricket habitat. There is a significant area of grasshopper and Mormon cricket habitat on federal lands that borders private rangeland and irrigated cropland in the state. Mormon crickets and grasshoppers (primarily about six species) are cyclical economic pest problems, particularly in southern Idaho. In recent years, however, significant outbreaks have also occurred in north-central and northern Idaho.

Summary of Grasshopper Survey Results

Grasshopper outbreaks in 2013 increased from 2012. In 2013, drought conditions in Southwest Idaho allowed for early spring scouting at higher elevations that normally are snowbound. The drought also resulted in seasonal streams not flowing this year. Despite these drought conditions, insect emergence was normal. *Camnula* was the main genus to cause economic thresholds statewide. In Central and North Idaho, Carbaryl bait was distributed in five (5) counties to fifteen (15) landowners. One of those landowners to request and apply Carbaryl bait was the Coeur d'Alene, Idaho airport.

In Southern Idaho, Valley County (elevation 5,000) reported the most damage statewide, with damage to dryland and irrigated grazing lands. A cost-share spray project was conducted in this county (see next section). The only other area where there were complaints in Southern Idaho was Elmore County, which had three (3) complaints; these were treated with Carbaryl bait by the landowners.

In Southeast Idaho, mostly notably south and east of Preston, there were also reports of grasshoppers, most notably south and east of Preston, Idaho. However, only four (4) complaints were treated with Carbaryl bait by the landowners. One of those requests treated was the Bear Lake County Airport.

No state lands, county or state road rights-of-way were treated by the (ISDA) for grasshopper or Mormon cricket infestations.

Summary of actions in Valley County:

ISDA became aware of a grasshopper problem in Valley County the first week of June. An ISDA Scout visited a ranch on June 7, 2013 and documented that grasshoppers were at an economic threshold (over 8 per square yard). In the next 35 days, ISDA Scouts made nine (9) visits to Valley County, scouting agricultural properties that were at or beyond the economic threshold for treatment. These property owners were given Carbaryl bait and liquid Diflubenzuron. APHIS and ISDA provided bait spreaders for landowners to use on their ATVs. Most of these properties were dryland (non-irrigated) grazing lands. On July 11, ISDA and Animal Plant Health Inspection Service (APHIS) Scouts came to the conclusion that the southern portion of Valley County was heavily infested with flying adult grasshoppers. Two-striped Grasshopper, (*Melanoplus bivittatus*) and Clearwinged Grasshopper, (*Camnula pellucida*) were the most common species. Estimated densities of fifty (50) grasshoppers per square yard were found during these surveys. Most of the effected properties were irrigated grazing lands. Under the Idaho Plant Pest Act of 2002, ISDA declared this area a grasshopper emergency area. ISDA officials met and decided to conduct a cost-share program with landowners. ISDA officials also discussed which insecticides would be best for control. Carbaryl bait was ruled out because of its lack of efficacy on irrigated lands residue impacts on pollinators, Diflubenzuron was ruled out because it was late in the season and its lack of efficacy on adult grasshoppers. ISDA used Cheminova Fyfanon AG ULV (Malathion) aerially at (eight) 8 ounces per acre. This product was chosen based on several factors including: growth stage of insect, efficacy, cost, and environmental concerns. Grasshopper populations were defoliating livestock grazing lands and livestock producers told ISDA that without treatment, they would have to remove their livestock 30 days sooner than normal (this high elevation region only has a 150 day grazing season). This would result in higher feed costs, especially for the calves that are weaned and removed 30 days sooner than the cows. This program was an emergency cooperative effort requested by landowners and Valley County officials. Only private lands were treated and participation in this program was voluntary. ISDA set a deadline for participating in the aerial program; thirty eight (38) landowners committed to approximately 25,000 acres. Additional landowners contacted ISDA after the deadline to participate in the aerial treatment; these landowners were provided Carbaryl bait or liquid Malathion. Valley County used 82% of the Carbaryl bait distributed statewide in 2013 (55,050 total pounds), which covered approximately 2,753 acres (at 20 pounds per acre). Valley County used 100% of the liquid Malathion distributed statewide to be applied by ground application, which covered approximately 991 acres (at 1.4 pints per acre). The aerial Malathion treatment controlled grasshoppers on 21,040 acres of private land and prevented adults from reproducing. Approximately 4,000 acres were not treated aerially because of environmental concerns and terrain hazardous to the applicator. Post treatment inspections indicated excellent control and landowners were pleased with the results of the project. Hatching bed areas were located and recorded by ISDA and AHPIS staff; this should give ISDA a good starting point where to survey in 2014.

Total acres treated in Valley County

Aerial, Fyfanon (liquid Malathion):	21,040
Ground, Carbaryl bait (estimated.):	2,753
Ground, Malathion, liquid (estimated.):	991
Ground, Dimilin, liquid (estimated)	128

Total: 24,912

2014 Forecast:

Carbaryl bait usage from 2002 to 2013 indicates that bait distribution tends to peak one to two years after the lowest year of usage (2012); however, as always, winter and spring weather will dictate an insect's numbers. ISDA will be out scouting in April in the lower elevations and keeping a close eye on Valley County grasshopper populations. ISDA will also be educating landowners to do the same. While there were few grasshopper complaints from Southern and Southeastern Idaho, there were significant population levels noted in some areas in 2013. These areas will be scouted early in 2014.

Summary of Mormon cricket Survey Results

The Mormon cricket, (*Anabrus simplex*), outbreaks continued to decrease in 2013. No request for assistance from private landowners due to Mormon cricket infestations were received at ISDA in 2012 or 2013. Scouting of state lands by ISDA personnel did not find any Mormon cricket infestations that met the criteria to consider treatment of state lands.

Summary of ISDA Program

In 2013, ISDA continued to suppress outbreaks of grasshoppers. No suppression of Mormon crickets and related katydids were necessary in 2013.

A cost-share aerial spray project was conducted in Valley County to control grasshoppers. Thirty five (35) landowners received assistance in the form of liquid Malathion insecticide and application cost, valued at \$73,640.00.

Thirty seven (37) private landowners in Valley County received assistance in the form of 173.5 gallons of liquid Malathion valued at \$5,653.00 in 2013. The average cost was \$32.58 per gallon.

In 2013, seventy four (74) private landowners in eleven (11) counties received assistance in the form of 67,400 pounds of Carbaryl bait valued at \$60,997.00 (2013 cost of \$0.905 per pound). This was an increase of 31,850 pounds in bait distributed from 2012 to private landowners.

Total 2013 Landowner Assistance

Cost Share-Aerial, Malathion & Application:	\$ 73,640.00
Carbaryl bait:	\$ 60,997.00
Malathion, liquid:	\$ 5,653.00

Total: \$140,290.00

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.

2013 COST-SHARE PROJECTS WITH PRIVATE LANDOWNERS FOR GRASSHOPPER SUPPRESSION – ONE CONDUCTED IN 2013

Project Location: Valley County	Acres Treated	Total Protected Acres	Insecticide	Cost to ISDA (1/2)	Cost to Private Landowner (1/2)	Total Project Cost	Cost Per Acres Protected
Totals	21,040	21,040	Fyfanon (Malathion) ULV AG	\$73,640	\$73,640	\$147,280	\$7

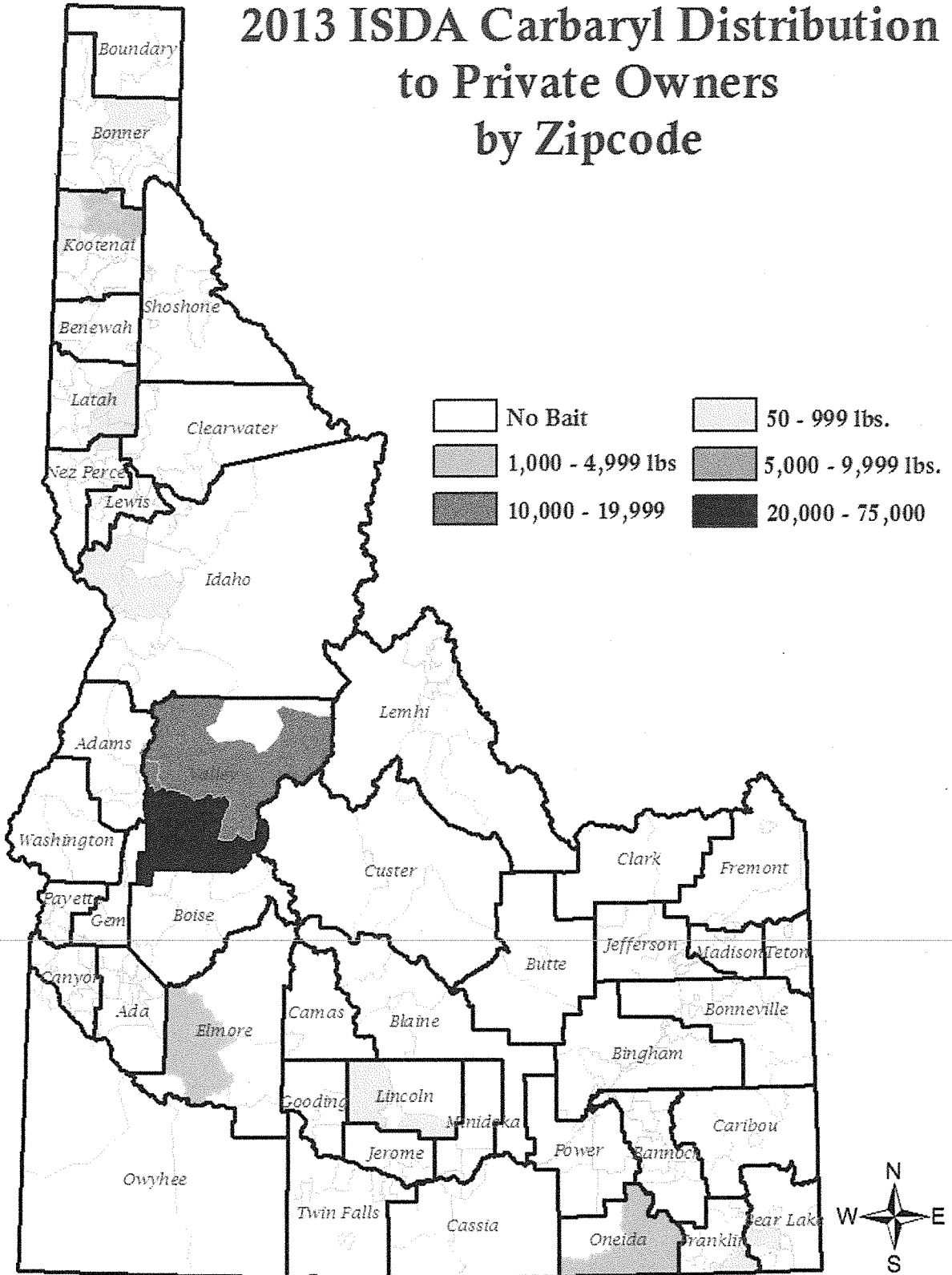
MULTI-YEAR SUMMARY OF CARBARYL TREATMENTS ON COUNTY ROAD RIGHTS-OF-WAY AND STATE LANDS

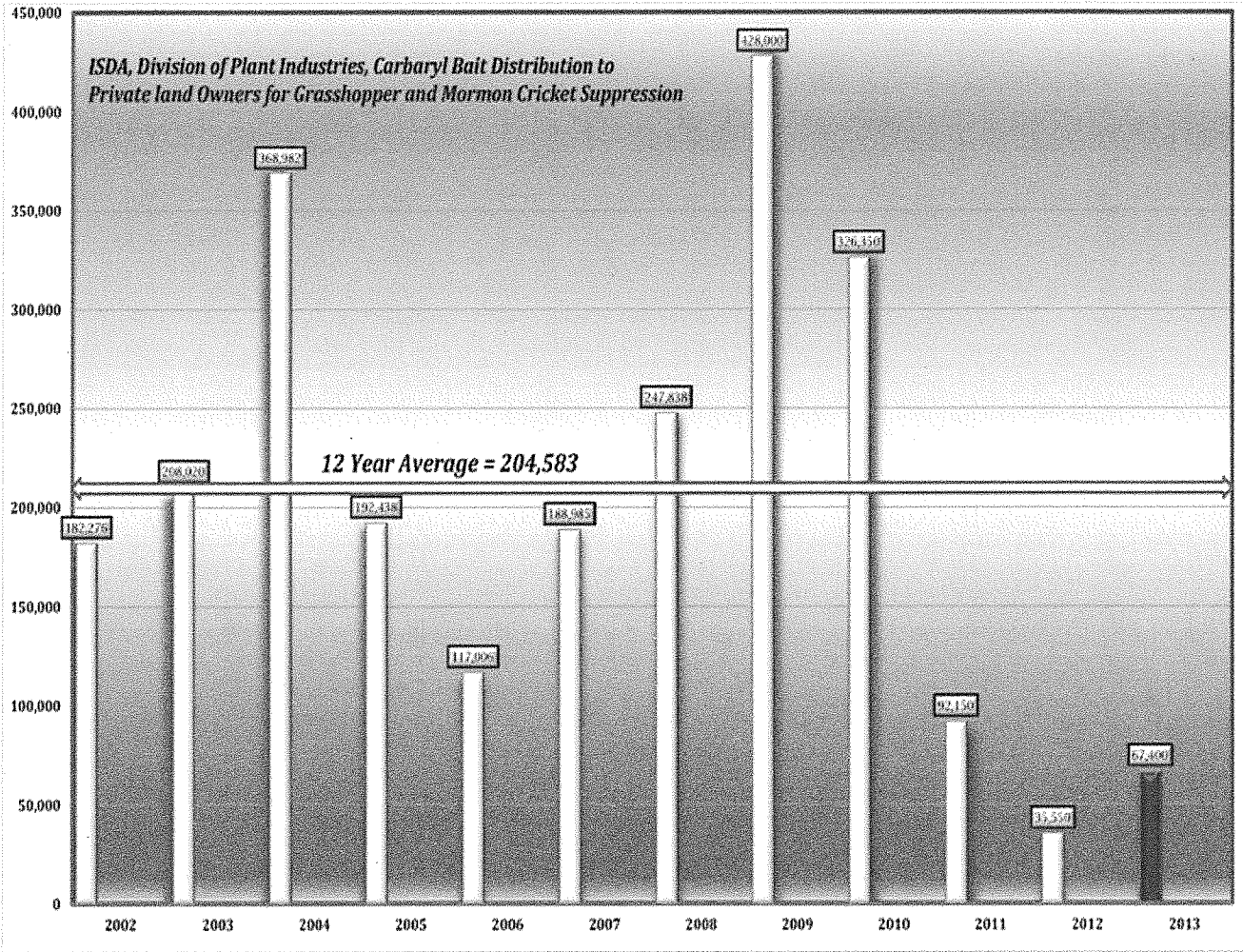
Year	Total Pounds Applied	Acres Treated
2005	12,175	1,218
2006	6,612	661
2007	3,906	340
2008	3,750	194
2009	21,200	1,446
2010	4,300	428
2011	900	92
2012	2,650	267
2013	0	0

2013 BAIT DISTRIBUTIONS TO PRIVATE LANDOWNERS FOR GRASSHOPPER SUPPRESSION

Rank	County	Carbaryl Bait Distributed (lbs)	Number of Distributions
1	Valley	55,050	59
2	Elmore	3,350	3
3	Kootenai	2,800	7
4	Oneida	2,500	1
5	Idaho	1,300	4
6	Bonner	750	2
6	Franklin	750	1
7	Latah	400	1
8	Bear Lake	300	1
9	Lincoln	100	1
9	Nez Perce	100	1
Totals	11 Counties	67,400	81

2013 ISDA Carbaryl Distribution to Private Owners by Zipcode

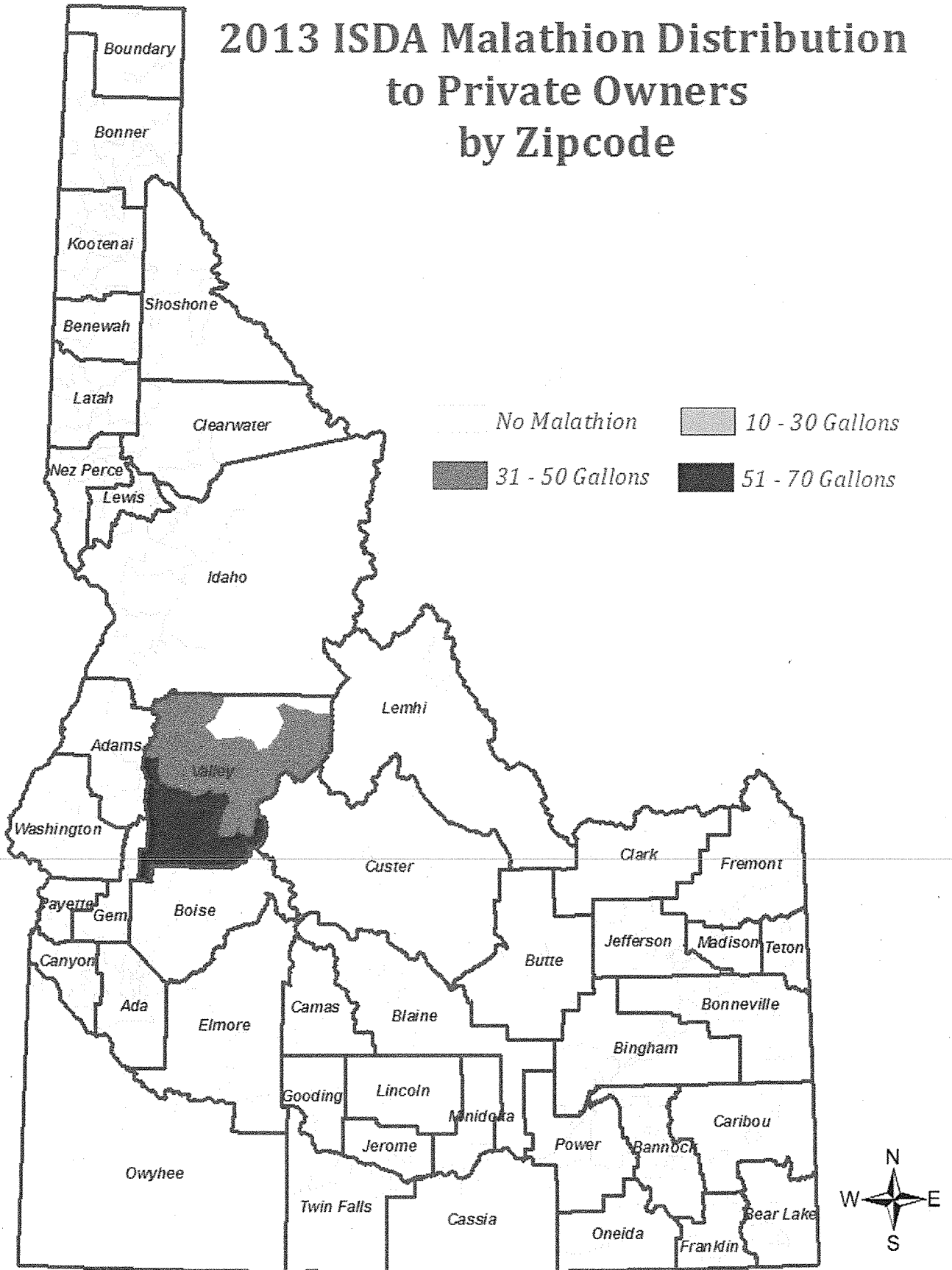




2013 LIQUID MALATHION AND DIMILIN DISTRIBUTIONS TO PRIVATE LANDOWNERS FOR GRASSHOPPER SUPPRESSION

<u>RANK</u>	<u>COUNTY</u>	<u>AMOUNT DISTRIBUTED GALLONS</u>	<u>NUMBER OF DISTRIBUTIONS</u>
<u>1</u>	<u>VALLEY</u>	<u>173.5 (MALATHION)</u>	<u>44</u>
<u>1</u>	<u>VALLEY</u>	<u>12 (DIMILIN)</u>	<u>2</u>

2013 ISDA Malathion Distribution to Private Owners by Zipcode



MAJOR COOPERATORS FOR THE GRASSHOPPER/MORMON CRICKET PROGRAM

During the 2013 season, the following cooperators provided significant help in bait storage, distribution, and overall program delivery:

- Primeland Cooperative, Ferdinand, ID.
- University of Idaho, Extension Service, Elmore County
- University of Idaho, Extension Service, Franklin County
- Valley County Road and Bridge Dept., Cascade, ID
- Valley County Commissioners
- Valley County Clerk/Recorders Office
- Wilbur Ellis, Caldwell, ID

Program Contacts: ISDA, Plant Industries Division

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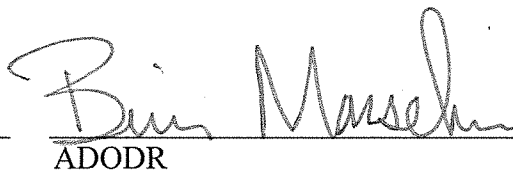
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ROAR
Date: 1/7/14

Michael E. Cooper, Bureau Chief


ADODR
Date: 1/7/14

Brain L. Marschman, SPHD