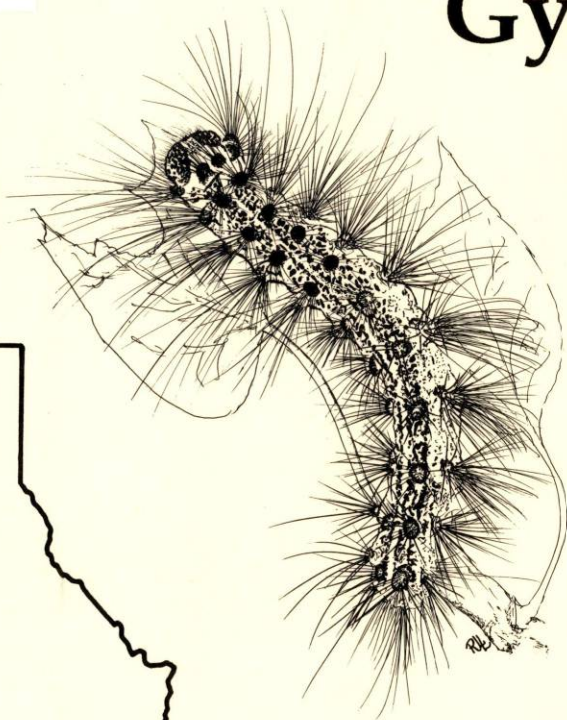


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Gypsy Moth Report 2004



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STATE OF IDAHO
GYPSY MOTH SURVEY TRAPPING PROGRAM
SUMMARY REPORT

2004



by
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R. Ladd Livingston

Idaho Department of Lands
3780 Industrial Avenue South
Coeur d'Alene, Idaho

Report No. IDL 04-2
December 2004

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ABSTRACT

In 2004, one gypsy moth was captured in Idaho. This moth was determined to be of the Asian strain (AGM). The moth was caught in a detection trap in North Idaho near Hauser Lake, in Kootenai County (Figure 1). No delimitation or mass trapping was conducted in 2004.

INTRODUCTION

Surveys to detect the introduction of the gypsy moth, *Lymantria dispar* L., have been conducted in Idaho each year since 1974 (Table 1). The first gypsy moth was discovered in 1986 at Sandpoint in Bonner County. The following year numerous additional moths were caught in Sandpoint and Coeur d'Alene. Ground treatments were done in 1988 and aggressive aerial spray eradication programs followed in 1989 and 1990 using a naturally occurring bacterium, *Bacillus thuringiensis* var. *kurstaki* (B.t.k.) as the pesticide (Tisdale and Livingston 1990, Livingston 1990). No gypsy moths have been caught in the treated areas since 1989. Gypsy moths have been caught in various areas throughout the state in the annual detection surveys every year from 1986 through 1995. No gypsy moths were caught in 1996 or 1997 (Mason and Livingston 1991, 1992, 1993, 1994, 1995, 1996, 1997). Seven gypsy moths were caught in 1998, 5 at one site. The other 2 were at widely separated locations of the state (Mason and Livingston 1998). An aerial spray eradication program was conducted in 1999 using B.t.k. No gypsy moths were caught in 1999 or 2000 (Mason and Livingston 1999 & 2000). Two gypsy moths were caught in 2001 (Casey and Livingston 2001), one each at widely separated locations of the state. No gypsy moths were caught in 2002 or 2003 (Casey and Livingston 2002 & 2003).

Cooperating agencies, with accompanying responsibilities in the Idaho gypsy moth program, include the following:

- Idaho Department of Lands - Overall program coordination and trapping in northern Idaho, except in Forest Service campgrounds.
- Idaho Department of Agriculture - Trapping in southwestern Idaho and submission of data to the National Agricultural Pest Information System (NAPIS) data library.
- USDA, APHIS - Provides cost share funding, traps, baits, and technical expertise.
- USDA Forest Service, Region 4 - Trapping in southeastern Idaho.
- USDA Forest Service, Region 1 - Trapping in Forest Service campgrounds in northern Idaho.
- Idaho Department of Transportation - Provides monthly reports of vehicle registrations in Idaho from states that are generally infested with gypsy moths.

A summary of the number of traps placed in the 2004 survey is shown in Table 2.

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Table 1 - Gypsy moth trapping history in Idaho.

YEAR	NUMBER OF TRAPS SET				NUMBER OF MOTHS CAUGHT				# POS. TRAPS
	DET. ²	DEL. ³	MASS ⁴	TOTAL	DET. ²	DEL. ³	MASS ⁴	TOTAL	
1974 ¹									
1975	45			45					
1976	254			254					
1977	232			232					
1978	248			248					
1979 ¹									
1980	121			121					
1981	95			95					
1982	35			35					
1983 ¹									
1984 ¹									
1985 ¹									
1986	208			208	1			1	1
1987	420			420	35			35	9
1988	1558	1457		3015	8	414		422	210
1989	2248		7303	9551	17		51	68	54
1990	5640	358	3268	9266	4	2		6	3
1991 ⁵	4641	121		4762	4			4	4
1992	4823	130		4953	2	1		3	3
1993	4314	115		4429	2			2	1
1994	4239	96		4335	1	2		3	3
1995	4522	136		4658	1			1	1
1996	4290	117		4407					
1997	5085	20		5105					
1998	4904			4904	7			7	3
1999	4837	155	90	5082					
2000	5398	36		5434					
2001	5346			5346	2			2	2
2002	5024	35		5059					
2003	5582	35		5617					
2004	5875			5875	1			1	1

¹Trapping did occur in Idaho in these years, and no moths were found. However, records are not complete as to the exact number of traps placed.

²Detection.

³Delimitation.

⁴Mass trapping for control at approximately 9 traps/acre.

⁵Number of traps set in 1991 revised after receipt of final data.

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Table 2 - Number of gypsy moth traps placed, by agency, in Idaho in 2004.

AGENCY	DETECTION TRAPS	DELIMITING TRAPS	MASS TRAPS	TOTAL TRAPS
Idaho Dept. of Lands	3270	0	0	3270
Idaho Dept. of Agriculture	1926	0	0	1926
USFS - Region 4	577	0	0	577
USFS - Region 1	102	0	0	102
TOTALS	5875	0	0	5875

2004 SURVEY PROGRAM

Detection Trapping - In 2004, the cooperating agencies in the Idaho gypsy moth detection program placed 5875 detection traps throughout the state (Table 2). Trapping costs for the 2004 gypsy moth survey program in Idaho are shown in Table 3. Table 4 shows trap placements by county. Pheromone-baited traps were placed on a grid basis at a density of approximately four traps per square mile. Traps were placed throughout the state in cities, towns, surrounding urban areas, and rural communities in accordance with a predetermined rotation schedule (see appendix A). Cities and communities where 20 or more move-ins occur are trapped irrespective of their place in the schedule. A move-in is defined as an individual or family moving to Idaho from a state that is generally infested with gypsy moths. This information is derived from vehicle registration information supplied on a monthly basis by the Idaho Department of Transportation. Most infestations are initiated when an egg mass or other life stage of the gypsy moth arrives on an outdoor household article brought by someone moving into the area. Between May 2003 and April 2004, there were 8922 move-ins to the state, a 13% decrease from the previous year. Campgrounds, tourist attractions, and other high-risk locations were also trapped. Trapping will also be adjusted accordingly based upon relative risk of AGM introductions.

One male gypsy moth was caught in a detection trap in 2004. The trap was located in North Idaho, near Hauser Lake in Kootenai County. This moth was sent for genetic analysis, and it was determined to be of the Asian strain. Introductions of the Asian gypsy moth in the United States are rare, and are usually associated with large vessels carrying cargo across the ocean from Asia. The specific route of introduction in this case has not been located, however many potential routes were assessed.

Delimitation Trapping - No delimitation trapping was conducted in Idaho in 2004.

Mass Trapping - No mass trapping was conducted in Idaho in 2004.

Life Stage Survey- In October and November of this year, an intensive survey was conducted in the area surrounding the AGM capture site for evidence of gypsy moth life stages. This survey was negative, and no further evidence was found.

2005 Season- Delimitation traps will be placed for a 5 mile radius surrounding the AGM capture site during the 2005 trapping season. These traps will be at an approximate density of 25 traps/mile². In addition, based upon the recommendation made by a Science Panel convened by APHIS, next year's trapping season will include an eradication project encompassing approximately 640 acres surrounding the capture site.

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Table 3 - Costs of the 2004 gypsy moth survey program.

AGENCY	COST	
	European GM	Asian GM
Idaho Department of Lands	\$47,527	\$24,977
Idaho Department of Agriculture	\$16,578	
US Forest Service- Region 1	\$4,480	
US Forest Service- Region 4	\$12,000	
USDA- APHIS Direct Costs for traps, baits and travel	\$2,000	
USDA- APHIS Cooperative grants	\$22,506	
Total	\$105,091	\$24,977
GRAND TOTAL	\$130,068	

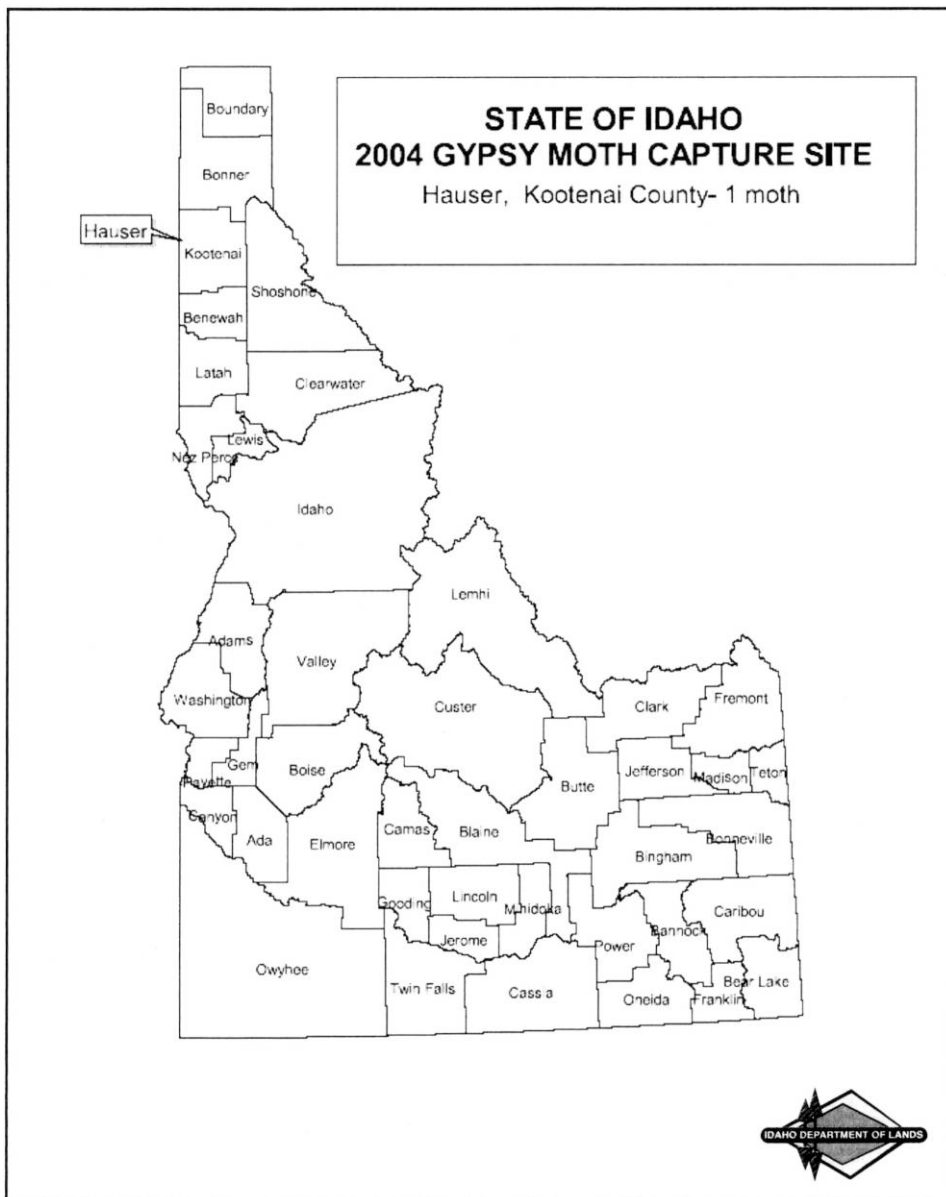
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Table 4 - 2004 Trap placements by counties.

COUNTY NAME	NO.	DETECTION 4/MILE ²	DELIMITATION 16/MILE ²	MASS 9/ACRE	TOTAL TRAPS
Ada	1	432			432
Adams	2	40			40
Bannock	3	112			112
Bear Lake	4	20			20
Benewah	5	161			161
Bingham	6	50			50
Blaine	7	170			170
Boise	8	52			52
Bonner	9	1170			1170
Bonneville	10	110			110
Boundary	11	208			208
Butte	12	12			12
Camas	13	12			12
Canyon	14	247			247
Caribou	15	18			18
Cassia	16	35			35
Clark	17	6			6
Clearwater	18	227			227
Custer	19	23			23
Elmore	20	103			103
Franklin	21	12			12
Fremont	22	31			31
Gem	23	62			62
Gooding	24	90			90
Idaho	25	317			317
Jefferson	26	22			22
Jerome	27	41			41
Kootenai	28	1022			1022
Latah	29	66			66
Lemhi	30	32			32
Lewis	31	9			9
Lincoln	32	24			24
Madison	33	25			25
Minidoka	34	30			30
Nez Perce	35	90			90
Oneida	36	8			8
Owyhee	37	66			66
Payette	38	54			54
Power	39	17			17
Shoshone	40	120			120
Teton	41	8			8
Twin Falls	42	241			241
Valley	43	227			227
Washington	44	53			53
TOTALS		5875	0	0	5875

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Figure 1: State of Idaho 2004 Gypsy Moth Capture Site



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GYPSY MOTH DECISION CRITERIA FOR AREAS TO TRAP

Original decision criteria as to what areas (zones) or cities to do detection trapping for gypsy moth in and on what schedule to trap were developed by the Gypsy Moth Technical Advisory Committee in 1989. Revisions have been made in succeeding years. The cities, towns, communities and rural areas of the state are categorized as follows.

Category 1. Detection Surveys conducted annually. This category includes larger cities and towns where numerous people or families moving into the area (move-ins) each year cause a substantial risk of gypsy moth infestation and dictate annual detection trapping. Consideration was also given to cities with colleges, industry, a military base, or tourism that would influence the risk of infestation or that otherwise made annual detection trapping advisable. There are currently 50 category 1 zones in Idaho.

Category 2. This category includes smaller cities and towns with populations greater than 2000 but which normally have fewer move-ins. Detection trapping will normally be done every second year. There are currently 15 category 2 zones in Idaho.

Category 3. This category includes communities and other areas with populations generally less than 2000. Detection trapping is normally done every third year. There are currently 193 category 3 zones in Idaho.

Category 4. This category includes small isolated towns or communities where limited or non-contiguous host interrupts the natural or unaided spread of the insect. These zones will be trapped only every third year, without regard to move-ins. There are currently 41 category 4 zones in Idaho.

Category 5. This category was developed for rural communities or areas where little or no risk of introduction exists due to lack of host or limited population. These areas are not trapped unless something occurs that would increase the risk of introduction in a particular year. There are currently 8 category 5 zones in Idaho that have been trapped.

A large percentage of the gypsy moth movement around the nation is brought about by families moving into a community and bringing gypsy moths in various life stages (particularly egg masses) with them, usually on outdoor household articles. For this reason, it was determined by the Technical Advisory Committee that if more than 20 move-ins occurred in a category 1, 2 or 3 zone in a one year period, that zone would be trapped that year, regardless of where it was in the normal schedule. This additional trapping will not interrupt or alter the regular schedule. A move-in is defined as an individual or family moving to Idaho from a state that is generally infested with gypsy moths. This information is provided to the program by the Idaho Department of Transportation.

The following pages comprise a list of Idaho cities and towns and the category into which they fall.

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GYPSY MOTH TRAP ZONE CATEGORIES

<u>City</u>	<u>County</u>	<u>Category</u>	<u>City</u>	<u>County</u>	<u>Category</u>
American Falls	Power	1	Rathdrum	Kootenai	1
Athol	Kootenai	1	Rexburg	Madison	1
Bellevue	Blaine	1	Rigby	Jefferson	1
Blackfoot	Bingham	1	Rupert	Minidoka	1
Boise/ Garden City	Ada	1	Salmon	Lemhi	1
Bonnors Ferry	Boundary	1	Sandpoint	Bonner	1
Burley	Cassia	1	Shelley	Bingham	1
Caldwell	Canyon	1	Soda Springs	Caribou	1
Cascade	Valley	1	St. Anthony	Fremont	1
Coeur D'Alene	Kootenai	1	Sun Valley	Blaine	1
Driggs	Teton	1	Twin Falls	Twin Falls	1
Eagle	Ada	1	Victor	Teton	1
Elk City	Idaho	1	Weiser	Washington	1
Elkhorn Village	Blaine	1	Buhl	Twin Falls	2
Emmett	Gem	1	Filer	Twin Falls	2
Farragut	Kootenai	1	Gooding	Gooding	2
Fruitland	Payette	1	Grangeville	Idaho	2
Hailey	Blaine	1	Heyburn	Minidoka	2
Idaho Falls	Bonneville	1	Kellogg/Pinehurst	Shoshone	2
Jerome	Jerome	1	Malad City	Oneida	2
Ketchum	Blaine	1	Montpelier	Bear Lake	2
Kimberly	Twin Falls	1	Orofino	Clearwater	2
Kuna	Ada	1	Osborn	Shoshone	2
Lake Fork	Valley	1	Parma	Canyon	2
Lewiston	Nez Perce	1	Sagle	Bonner	2
McCall	Valley	1	Silver City	Owyhee	2
Meridian	Ada	1	St. Maries	Benewah	2
Middleton	Canyon	1	Wolf Lodge	Kootenai	2
Moscow	Latah	1	Aberdeen	Bingham	3
Mountain Home	Elmore	1	Ahsahka	Clearwater	3
Mountain Home AFB	Elmore	1	Ashton	Fremont	3
Nampa	Canyon	1	Atlanta	Elmore	3
Payette	Payette	1	Bancroft	Caribou	3
Pocatello	Bannock	1	Banida	Franklin	3
Post Falls	Kootenai	1	Banks	Boise	3
Preston	Franklin	1	Basalt	Bingham	3
Priest River	Bonner	1	Beauty Bay	Kootenai	3

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<u>City</u>	<u>County</u>	<u>Category</u>
Benewah	Benewah	3
Bliss	Gooding	3
Bloomington	Bear Lake	3
Bovill	Latah	3
Bowmont	Canyon	3
Bruneau	Owyhee	3
Calder	Shoshone	3
Cambridge	Washington	3
Cameron	Nez Perce	3
Cardiff	Clearwater	3
Carey	Blaine	3
Careywood	Bonner	3
Castleford	Twin Falls	3
Cavendish	Clearwater	3
Centerville	Boise	3
Challis	Custer	3
Chatcolet	Benewah	3
Clark Fork	Bonner	3
Clarkia	Shoshone	3
Clayton	Custer	3
Clearwater	Idaho	3
Clifton	Franklin	3
Coolin	Bonner	3
Cottonwood	Idaho	3
Council	Adams	3
Craigmont	Lewis	3
Crouch	Boise	3
Culdesac	Nez Perce	3
Dayton	Franklin	3
Deary	Latah	3
Deep Creek	Latah	3
Desmet	Benewah	3
Dietrich	Lincoln	3
Donnelly	Valley	3
Downey	Bannock	3
Eastport	Boundary	3
Eden	Jerome	3
Elk City	Idaho	3
Elk River	Clearwater	3

<u>City</u>	<u>County</u>	<u>Category</u>
Elmira	Bonner	3
Emida	Benewah	3
Fairfield	Camas	3
Featherville	Elmore	3
Ferdinand	Idaho	3
Fernwood	Benewah	3
Firth	Bingham	3
Fish Haven	Bear Lake	3
Fort Hall	Bingham	3
Four Corners	Bonner	3
Franklin	Franklin	3
Fraser	Clearwater	3
Fruitvale	Adams	3
Gannett	Blaine	3
Garden Valley	Boise	3
Gardena	Boise	3
Genesee	Latah	3
Georgetown	Bear Lake	3
Gleason Meadows	Bonner	3
Glenns Ferry	Elmore	3
Glenwood	Idaho	3
Gold Hill	Latah	3
Grace	Caribou	3
Grandview	Owyhee	3
Grangemont	Clearwater	3
Greenleaf	Canyon	3
Hagerman	Gooding	3
Hammett	Elmore	3
Hansen	Twin Falls	3
Harris Ridge	Idaho	3
Harrisburg	Idaho	3
Harrison	Kootenai	3
Hazelton	Jerome	3
Headquarters	Clearwater	3
Helmer	Latah	3
Homedale	Owyhee	3
Hope	Bonner	3
Horseshoe Bend	Boise	3
Idaho City	Boise	3

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<u>City</u>	<u>County</u>	<u>Category</u>
Indian Valley	Adams	3
Inkom	Bannock	3
Iona	Bonneville	3
Island Park	Fremont	3
Jaype	Clearwater	3
Juliaetta	Latah	3
Kamiah	Lewis	3
Kendrick	Latah	3
King Hill	Elmore	3
Kooskia	Idaho	3
Kreiger Creek	Bonner	3
Laclede	Bonner	3
Lamb Creek	Bonner	3
Lapwai	Nez Perce	3
Larson	Clearwater	3
Lava Hot Spring	Bannock	3
Leland	Nez Perce	3
Lenore	Nez Perce	3
Letha	Gem	3
Lewisville	Jefferson	3
Lowell	Idaho	3
Lowman	Boise	3
Lucile	Idaho	3
Mackay	Custer	3
Marsing	Owyhee	3
McAbee Falls	Bonner	3
McCammon	Bannock	3
Melba	Canyon	3
Menan	Jefferson	3
Mesa	Adams	3
Mica Bay	Kootenai	3
Midvale	Washington	3
Moyie Springs	Boundary	3
Murphy	Owyhee	3
Murray	Shoshone	3
Murtaugh	Twin Falls	3
Naples	Boundary	3
New Meadows	Adams	3
New Plymouth	Payette	3

<u>City</u>	<u>County</u>	<u>Category</u>
Nordman	Bonner	3
North Fork	Lemhi	3
Notus	Canyon	3
Oakley	Cassia	3
Ola	Gem	3
Oreana	Owyhee	3
Orofino SE	Clearwater	3
Oxford	Franklin	3
Pack River	Bonner	3
Paris	Bear Lake	3
Paul	Minidoka	3
Pearl	Gem	3
Peck	Nez Perce	3
Picabo	Blaine	3
Pierce	Clearwater	3
Pine	Elmore	3
Pioneerville	Boise	3
Placerville	Boise	3
Plummer	Benewah	3
Pollock	Idaho	3
Porthill	Boundary	3
Potlatch	Latah	3
Reubens	Lewis	3
Reynolds	Owyhee	3
Richfield	Lincoln	3
Riddle	Owyhee	3
Riggins	Idaho	3
Ririe	Bonneville	3
Roberts	Jefferson	3
Rock Creek	Twin Falls	3
Rockford Bay	Kootenai	3
Rogerson	Twin Falls	3
Rose Lake	Kootenai	3
Roswell	Canyon	3
Samaria	Oneida	3
Shoshone	Lincoln	3
Slickpoo Mission	Nez Perce	3
Smiths Ferry	Valley	3
Southwick	Nez Perce	3

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<u>City</u>	<u>County</u>	<u>Category</u>	<u>City</u>	<u>County</u>	<u>Category</u>
Spalding	Nez Perce	3	Dubois	Clark	4
Spirit Lake	Kootenai	3	Hamer	Jefferson	4
St. Charles	Bear Lake	3	Heise	Madison	4
Stanley	Custer	3	Holbrook	Oneida	4
Star	Elmore	3	Howe	Butte	4
Starkey	Adams	3	Huston	Canyon	4
Stites	Idaho	3	Leadore	Lemhi	4
Sugar City	Madison	3	Malta	Cassia	4
Sweet	Gem	3	May	Lemhi	4
Syringa	Idaho	3	Minidoka	Minidoka	4
Tahoe Ridge	Idaho	3	Mink Creek	Franklin	4
Tamarack	Adams	3	Montevieu	Jefferson	4
Teton	Madison	3	Moore	Butte	4
Tetonia	Teton	3	Moreland	Bingham	4
Tuttle	Gooding	3	Mud Lake	Jefferson	4
Ucon	Bonneville	3	Newdale	Fremont	4
Wallace	Shoshone	3	Ovid	Bear Lake	4
Warm Lake	Valley	3	Parker	Fremont	4
Warren	Idaho	3	Pingree	Bingham	4
Weippe	Clearwater	3	Riverside	Bingham	4
Wendell	Gooding	3	Robin	Bannock	4
Weston	Franklin	3	Rockford	Bingham	4
White Bird	Idaho	3	Rockland	Power	4
Wilder	Canyon	3	Springfield	Bingham	4
Winchester	Lewis	3	Stibnite	Valley	4
Worley	Kootenai	3	Stone	Oneida	4
Wrenco	Bonner	3	Swan Valley/Irwin	Bonneville	4
Yellow Pine	Valley	3	Tendoy	Lemhi	4
Acequia	Minidoka	4	Terreton	Jefferson	4
Albion	Cassia	4	Thornton	Madison	4
Almo	Cassia	4	Cobalt	Lemhi	5
Arco	Butte	4	Corral	Camas	5
Arimo	Bannock	4	Hill City	Camas	5
Bennington	Bear Lake	4	Kimama	Lincoln	5
Bern	Bear Lake	4	Lolo	Idaho	5
Chester	Freemont	4	Powell	Idaho	5
China Cap	Caribou	4	Sunbeam	Custer	5
Declo	Cassia	4	Triangle	Owyhee	5
Dingle	Bear Lake	4			

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