



Prepared and distributed by the Vector-Borne Disease Section
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Oropsylla montana, a common flea of ground squirrels in California and the primary vector for plague

California Plague Report, Winter 2012

The California Department of Public Health (CDPH) collaborates with local, state, and federal agencies to conduct a statewide plague surveillance program. The CDPH, Vector-Borne Disease Section (VBDS) collects, collates, and analyzes information on suspect and confirmed plague activity among humans, domestic pets, and wild animals throughout California. This year-end report summarizes plague surveillance results received through December, 2012. Finalized surveillance results for 2012 will be published in the VBDS Annual Report.

Human surveillance

No cases of plague in humans were reported in 2012.

Domestic pets

No cases of plague in domestic pets were reported in 2012.

Wild animals

The VBDS plague surveillance program received test results for 569 wild rodents and 289 carnivores from 30 counties (see Table 1). Thirty-five rodents and one carnivore from 8 counties tested positive for serum antibodies to *Yersinia pestis*. One rodent carcass tested positive for *Y. pestis* bacteria.

The tested rodents totaled: 229 California ground squirrels (*Otospermophilus beecheyi*) from ten counties, 229 chipmunks (*Tamias* spp.) from thirteen counties, 52 mice (*Peromyscus* spp.) from seven counties, 9 golden-mantled ground squirrels (*Callospermophilus lateralis*) from six counties, 23 Belding's ground squirrels (*Urocitellus beldingi*) from two counties, 16 Douglas squirrels (*Tamiasciurus douglasii*) from four counties, 4 wood rats (*Neotoma*

spp.) from three counties, 6 antelope ground squirrels (*Ammospermophilus leucurus*) from one county and one long-tailed meadow vole (*Microtus longicaudus*). Earlier this year VBDS reported that San Diego County detected plague antibodies in a California ground squirrel (titer 1:1024) collected in April from Palomar Mountain State Park, Cedar Grove Group Camp (Chris Conlan: County of San Diego, Department of Environmental Health). VBDS surveillance in this area in August found two additional antibody positive California ground squirrels (titers 1:32). Surveillance conducted by VBDS in August detected a seropositive lodgepole chipmunk (titer 1:32) from the upper-track residential area of Twin Falls, Inyo National Forest in Mono County. Seropositive ground squirrels were reported earlier in 2012 from this eastern Sierra region (Four Jeffrey Campground, Inyo Co.). In September VBDS and Riverside County surveillance detected a seropositive California ground squirrel (titer 1:256) from Fern Basin campground in the San Bernardino National Forest. Evidence of plague activity has not been observed in this area since 1996, despite annual surveillance. Further north, *Y. pestis* antibody was detected in 24 of 90 rodents sampled in September from Martis Creek Recreational Area,

Boca Lake Campground and Boca Spring Campground in the Tahoe National Forest, Nevada County. A yellow-pine chipmunk from nearby Martis Peak Lookout in Placer County tested positive for plague antibodies. Also in September, direct evidence of plague activity was detected when a yellow-pine chipmunk tested positive for *Y. pestis* bacteria at the Taylor Creek Visitor Center, U.S. Forest Service Lake Tahoe Basin Management Unit, El Dorado County. Subsequent plague surveillance at the visitor center found two additional yellow-pine chipmunks with plague antibody (titers 1:256, 1:128). In all instances the local authorities were notified and appropriate measures were taken to inform the public and assess the risk of plague exposure to people and pets. The 289 carnivores tested for plague antibody in 2012 included: 215 coyotes (*Canis latrans*) from seventeen counties, 32 black bears (*Ursus americanus*) from twelve counties, 8 bobcats (*Lynx rufus*) from five counties, 4 red foxes (*Vulpes vulpes*) from two counties, 7 mountain lions (*Felis concolor*) from four counties, 7 raccoons (*Procyon lotor*) from five counties, 7 gray fox (*Urocyon cinereoargenteus*) from three counties and 9 striped skunks (*Mephitis mephitis*) from two counties.

One raccoon from the Beckwourth area of Plumas county tested positive (titer 1:32) for plague antibody and two black bears from Yosemite National Park also tested plague antibody positive (titer 1:64 each). All other carnivores were negative for serum antibody to *Y. pestis*. Additionally, 2 Nuttall's cottontail rabbits (*Sylvilagus nuttallii*) from two counties and 2 feral pigs (*Sus scrofa*) from one county tested negative.

Table 1. VBDS plague surveillance results through December 2012¹

County Location	No. rodents	No. carnivores	Positive specimens		
			Species	Result	Month
Butte		4			
Calaveras	1				
El Dorado	61				
LTBMU, Tallac Historical Site			Chipmunk, YP	1:256	October
LTBMU, Taylor Creek Visitor Center			Chipmunk, YP	1:128	October
LTBMU, Taylor Creek Visitor Center			Chipmunk, YP	<i>Y. pestis</i>	September
Fresno	3	12			
Inyo	63				
Inyo NF, Four Jeffrey Campground			CA G Sq	1:128	June
Inyo NF, Four Jeffrey Campground			CA G Sq	1:64	June
Inyo NF, Four Jeffrey Campground			BE G Sq	1:64	June
Inyo NF, Four Jeffrey Campground			BE G Sq	1:32	June
Kern	9	11			
Lake	1	1			
Lassen	1	2			
Los Angeles		5			
Mariposa		11			
Yosemite National Park			Black Bear	1:64	October
Yosemite National Park			Black Bear	1:64	October
Mendocino		21			
Modoc	10	41			
Mono	44	1			
Inyo NF, Twin Falls Upper Tract Residences			Chipmunk, LP	1:32	August
Monterey		22			
Napa		8			
Nevada	122				
Martis Creek Reservoir: Alpine Meadows CG			Chipmunk, YP	1:1024	September
Martis Creek Reservoir: Alpine Meadows CG			Chipmunk, YP	1:128	September
Martis Creek Reservoir: Alpine Meadows CG			Chipmunk, YP	1:128	September
Martis Creek Reservoir: Alpine Meadows CG			Chipmunk, YP	1:256	September
Martis Creek Reservoir: Alpine Meadows CG			Chipmunk, YP	1:512	September
Martis Creek Reservoir: Alpine Meadows CG			Chipmunk, YP	1:512	September
Martis Creek Reservoir: Alpine Meadows CG			Chipmunk, YP	1:64	September
Martis Creek Reservoir: Alpine Meadows CG			Pine Squirrel	1:64	September
Martis Creek Reservoir: Alpine Meadows CG			Chipmunk, YP	1:64	September
Martis Creek Reservoir: Alpine Meadows CG			Chipmunk, YP	1:64	September
Tahoe NF, Boca Lake Campground			Chipmunk, YP	1:1024	September
Tahoe NF, Boca Lake Campground			Chipmunk, YP	1:128	September
Tahoe NF, Boca Lake Campground			Chipmunk, YP	1:128	September
Tahoe NF, Boca Lake Campground			Chipmunk, YP	1:128	September
Tahoe NF, Boca Lake Campground			Chipmunk, YP	1:256	September
Tahoe NF, Boca Lake Campground			Chipmunk, YP	1:32	September
Tahoe NF, Boca Lake Campground			Chipmunk, YP	1:32	September
Tahoe NF, Boca Lake Campground			Chipmunk, YP	1:32	September
Tahoe NF, Boca Lake Campground			Chipmunk, YP	1:512	September
Tahoe NF, Boca Lake Campground			Chipmunk, YP	1:512	September
Tahoe NF, Boca Lake Campground			Chipmunk, YP	1:64	September
Tahoe NF, Boca Lake Campground			Chipmunk, YP	1:64	September
Tahoe NF, Boca Lake Campground			Chipmunk, YP	1:64	September
Tahoe NF: Boca Spring CG			Chipmunk, YP	1:64	September
Placer	6	1			
Martis Peak Lookout			Chipmunk, YP	1:512	September
Plumas	21	15			
Beckwourth, approximately 8 mi. NW			Raccoon	1:32	September
Riverside	89				
San Bernardino NF, Fern Basin Campground			CA G Sq	1:256	September
San Benito		77			
San Bernardino	87	1			
San Diego	43				
Palomar Mtn SP, Cedar Grove Group Campground			CA G Sq	1:32	August
Palomar Mtn SP, Cedar Grove Group Campground			CA G Sq	1:32	August
San Luis Obispo		14			
Santa Barbara		9			
Shasta		2			
Sierra	1	5			
Siskiyou		22			
Sonoma		2			
Stanislaus	2	2			
Ventura	6				
Total	569	289			

Chipmunk, YP: Yellow-pine chipmunk
CA G Sq: California ground squirrel
BE G Sq: Belding ground squirrel

NF: National Forest
LTBMU: Lake Tahoe Basin Management Unit

¹Results do not include data collected from plague surveillance programs of local agencies that conduct their own testing.