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State Public Health Officer & Director

# State of California—Health and Human Services Agency California Department of Public Health



GAVIN NEWSOM  
Governor

May 21, 2020

TO: CALIFORNIA PLAGUE SURVEILLANCE PROGRAM, COOPERATING  
AGENCIES, AND INTERESTED PARTIES

SUBJECT: PLAGUE SURVEILLANCE AND LABORATORY TESTING FOR 2020

The information in this document is provided by the California Department of Public Health (CDPH) to assist agencies that participate in California's statewide plague surveillance program. Areas of highest priority for surveillance are those with a recent history of plague activity and locations that pose a higher risk for human exposure (e.g., campgrounds). Sampling should be restricted to species involved in sylvatic plague transmission. As in 2019, procedures for rodent serology testing require participants to send blood samples to their local CDPH, Vector-Borne Disease Section (VBDS) field office for processing.

In 2019, plague surveillance was conducted in 29 counties. Plague activity was detected in 15 rodents from five counties (El Dorado, Inyo, Mono, Nevada, and Plumas) and in one coyote from Plumas County. No human or domestic pet cases were confirmed in 2019.

## **Humans**

Shipping and testing of suspect human plague specimens can be coordinated with the local health department and public health laboratory, which will route specimens to the appropriate Level B laboratory in the California Laboratory Response Network (LRN). The High Risk Pathogen Section within the CDPH Microbial Diseases Laboratory is available for consultation and confirmatory support (510-412-3700). The local health officer must be notified immediately of any case or suspected case of human plague.

## **Domestic pets**

Level B LRN laboratories are available to test specimens from domestic pets (particularly cats) with signs compatible with plague. Veterinarians who desire information on the testing of cats or other pets should contact their local health department. CDPH staff are available to assist (916-552-9740). The local health officer must be notified immediately of any case or suspected case of animal plague.

## **Wild rodents (carcasses, tissues)**

CDPH will accept for testing rodent carcasses from areas where plague is recognized as enzootic (see page 4). Carcasses should be fresh, in good condition, and not compromised by contamination or trauma. All specimens should be individually double-bagged into



separate clear plastic bags and packaged with frozen blue-ice packs in appropriate insulated containers and labeled as "Biological Substance, Category B". Ship the containers in accordance with applicable laws and regulations to:

California Department of Public Health  
Specimen Receiving  
Attn: VBDS personnel  
850 Marina Bay Parkway  
Richmond, CA 94804

NOTE: Prior to shipping, you must contact your CDPH VBDS Public Health Biologist (see page 5 for county list) and/or the VBDS Laboratory (510-412-4650/510-412-6253) to ensure proper screening and timely testing. A carcass submission form (see page 7) must be completed. Please see Appendix A of the *California Compendium of Plague Control* for a list of rodent species appropriate for plague testing (<https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/CAPlagueCompendium.pdf>).

Test results are reported typically two to three days after specimens are received.

### **Rodent and wild carnivore blood samples (Nobutos)**

Testing for serum antibodies to *Yersinia pestis* is available through CDPH. Blood samples on filter-paper strips (Nobutos) will be accepted for appropriate rodent and wild carnivore species from areas where plague is endemic (see page 4). Samples from non-endemic areas will not be tested unless first cleared by VBDS. Contact your local VBDS biologist (see page 5) before submitting samples from non-endemic areas.

One Nobuto filter-paper strip should be submitted for each rodent or carnivore sampled. Blood samples on Nobutos must be air-dried and placed into small manila envelopes (approx. 4"x2"). All paper envelopes must be placed in a zip-lock plastic bag with silica dessicant prior to mailing. See page 6: Instructions for Nobuto Filter-paper Strips.

**For rodent samples**, an updated two-part VBDS mammal collection form is attached. Please complete and include this form for submission of all rodent and related flea collections. Latitude-longitude and/or township-range-section information should be recorded for each collection event. A unique field identification number for each rodent sample should be written in permanent ink on each envelope containing Nobuto samples. The identification numbers must correspond to those on the mammal collection field form.

All rodent blood samples collected on Nobutos will be submitted to the agency's local VBDS field office for processing. Contact your local VBDS field office for further information.

**For wild carnivore samples**, pre-labeled collection envelopes should be used. Envelopes are available from VBDS by request (916-686-8083). Collection information must be recorded on each envelope and include the location, collection date, the carnivore species, age, sex, and either latitude-longitude or township-range-section.

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All wild carnivore blood samples on filter-paper Nobuto strips should be sent to:

California Department of Public Health, Vector-Borne Disease Section

Attn: Greg Hacker

8633 Bond Road

Elk Grove, CA 95624

Test results for Nobuto blood samples are available typically within three weeks of submission. Questions regarding submission processing should be addressed to **Greg Hacker** at **916-686-8083**.

### **Rodent fleas**

CDPH will accept for testing fleas collected from rodents associated with a human case investigation or an apparent plague epizootic. Only flea species known or suspected to be plague vectors should be submitted for testing. Fleas should be preserved in 70% ethanol.

**All requests for flea testing must be coordinated with Greg Hacker (916-686-8083) prior to shipment.**

### **Summary of Contacts:**

CDPH Microbial Diseases Laboratory (510-412-3700): human plague specimens

CDPH Veterinary Public Health (916-552-9740): domestic pet specimens

VBDS Laboratory (510-412-4650/510-412-6253): rodent carcass testing

Plague Program contact: Greg Hacker (916-686-8083): carnivore, rodent, flea testing, or general questions

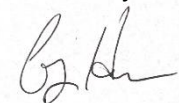
VBDS Biologists by county (see page 5): rodent blood samples or general questions.

Additional information on surveillance and control of plague in California can be found in the *California Compendium of Plague Control*

(<https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/CAPlagueCompendium.pdf>).

If additional assistance or information is required, please email: [greg.hacker@cdph.ca.gov](mailto:greg.hacker@cdph.ca.gov)

Sincerely,



Gregory M. Hacker

Senior Public Health Biologist

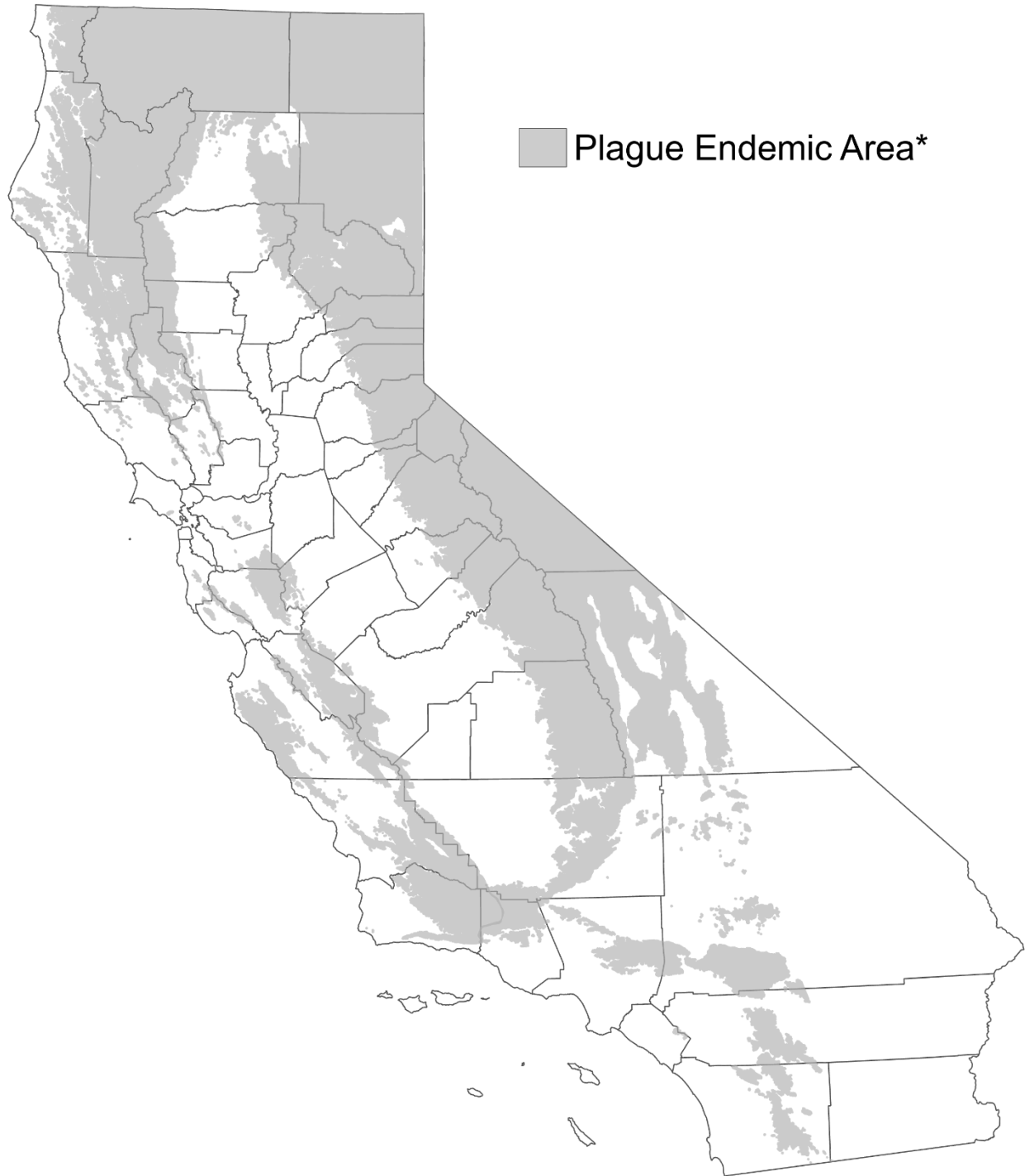
Enclosures: Plague Distribution Map

County Assignment List for VBDS Public Health Biologists

Instructions for the Use of Nobuto Filter-paper Strips

Plague Carcass Submission Form

Attached (electronic file): 2020 Mammal Collection Form



\*Plague endemic areas in California are estimated based on the location of surveillance indicators (plague positive rodent or carnivore samples) collected from 1983-present, with appropriate regional elevation limits (e.g., > 3,000 feet for interior areas) and distance buffers.

**VECTOR-BORNE DISEASE SECTION**  
**CALIFORNIA DEPARTMENT OF HEALTH SERVICES**  
County Assignments for Public Health Biologists

**NORTHERN REGION**

***Novak, Mark***     **916/686-8414**  
Andrews, Elizabeth     916/686-8416  
Hacker, Greg     916/686-8083  
Jackson, Bryan     916/686-8421  
Niemela, Mike     916/686-8411

**COASTAL REGION**

***Padgett, Kerry***     **510/412-6252**  
Feiszli, Tina     510/412-6253  
Kilonzo, Chris     510/412-4650  
Saunders, Megan     510/412-6298

**SOUTHERN REGION**

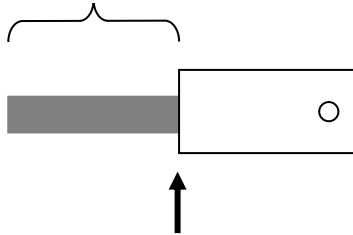
***Hu, Renjie***     **909/937-3449**  
Billeter, Sarah     909/937-3443  
Burns, Joe     909/937-3447  
Metzger, Marco     909/937-3448

**CALIFORNIA COUNTIES**

Alameda	Tina Feiszli	Orange	Sarah Billeter
Alpine	Bryan Jackson	Placer	Elizabeth Andrews
Amador	Bryan Jackson	Plumas	Greg Hacker
Butte	Elizabeth Andrews	Riverside	Marco Metzger
Calaveras	Bryan Jackson	Sacramento	Bryan Jackson
Colusa	Greg Hacker	San Benito	Tina Feiszli
Contra Costa	Tina Feiszli	San Bernardino	Joe Burns
Del Norte	Mark Novak	San Diego	Marco Metzger
El Dorado	Bryan Jackson	San Francisco	Tina Feiszli
Fresno	Megan Saunders	San Joaquin	Bryan Jackson
Glenn	Greg Hacker	San Luis Obispo	Sarah Billeter
Humboldt	Mark Novak	San Mateo	Megan Saunders
Imperial	Marco Metzger	Santa Barbara	Sarah Billeter
Inyo	Joe Burns	Santa Clara	Chris Kilonzo
Kern	Sarah Billeter	Santa Cruz	Tina Feiszli
Kings	Sarah Billeter	Shasta	Mark Novak
Lake	Megan Saunders	Sierra	Greg Hacker
Lassen	Mark Novak	Siskiyou	Mark Novak
Los Angeles	Marco Metzger	Solano	Chris Kilonzo
Madera	Megan Saunders	Sonoma	Chris Kilonzo
Marin	Chris Kilonzo	Stanislaus	Mike Niemela
Mariposa	Mike Niemela	Sutter	Elizabeth Andrews
Mendocino	Megan Saunders	Tehama	Greg Hacker
Merced	Mike Niemela	Trinity	Mark Novak
Modoc	Mark Novak	Tulare	Joe Burns
Mono	Joe Burns	Tuolumne	Mike Niemela
Monterey	Chris Kilonzo	Ventura	Sarah Billeter
Napa	Tina Feiszli	Yolo	Bryan Jackson
Nevada	Elizabeth Andrews	Yuba	Elizabeth Andrews

## INSTRUCTIONS FOR BLOOD COLLECTION ON NOBUTO FILTER-PAPER STRIPS

**Blood absorbing area**



**Figure A**

Animal _____	
Age, if known (young, adult, etc.) _____	Sex _____
Location to nearest town or landmark _____	
Date _____	Name and affiliation _____
Latitude _____ Longitude _____ or T _____ R _____ Sec. _____	

**Figure B**

**Collect one (1) blood sample on a Nobuto filter-paper strip from each animal** (see Figure A, above).

1. Grasp the large end of a Nobuto filter-paper strip.
2. Dip the small end into blood until blood absorbs up to notch.
3. Air dry the Nobuto strip.
4. Place Nobuto strip in the small brown collection envelope.

**Fill out collection information on brown envelope** (see Figure B, above).

1. **Animal.**
  - a. Identify the animal by either a common name or scientific name.
    - i. Differentiate striped skunk from spotted skunk.
    - ii. Differentiate gray fox from red fox.
2. **Age of animal (immature or adult).**
3. **Sex of animal (male, female, or unknown).**
4. **Location to nearest town or landmark.**
  - a. Identified by the straight-line distance and direction from the nearest town or landmark that appears on standard maps (example: 5 miles southeast of Redding)
5. **Date of collection is very important and should be filled out in full.**
6. **Name and affiliation of the collector.**
7. GPS readings of **longitude** and **latitude** or the **township, range and section coordinates** are extremely useful for our disease surveillance program and should be filled in on the collection envelope.

**PLAGUE CARCASS SUBMISSION FORM**  
**VECTOR-BORNE DISEASE SECTION LABORATORY**

Collector(s):

Collecting agency:

Jurisdiction (e.g. Forest Service, State Park, Private):

Date Collected:

Location (general):

Specific location (e.g. campsite number, by dumpster):

County:

Elevation:

Latitude:

Longitude:

Comments about condition/behavior:

Address shipment to:  
California Department of Public Health  
Specimen Receiving  
Vector-Borne Disease Section Laboratory  
850 Marina Bay Parkway  
Richmond, CA 94804  
Telephone: (510-412-4650/510-412-6253)