

October 2019

Dear blunt-nosed leopard lizard surveyor,

Attached is the revised survey methodology for the blunt-nosed leopard lizard (*Gambelia sika*). The protocol was developed by the Central and South Coast Regions of the California Department of Fish and Wildlife (CDFW) with input from the United States Fish and Wildlife Service (USFWS), the Bureau of Land Management, and various species experts. This protocol supercedes previous versions of CDFW survey protocols for the blunt-nosed leopard lizard (BNLL). The range-wide decline of population numbers in the past decade has provided the impetus for development of a more rigorous methodology to detect species presence. Additionally, since CDFW is not able to issue any form of take authorization for the blunt-nosed leopard lizard due to its status as a fully protected animal pursuant to Fish and Game Code section 5050, except as allowed in a Natural Communities Conservation Plan under Fish and Game Code section 2800 et seq., detection of species presence on a project site is crucial.

This standard methodology has been developed to provide consultants, local, state and federal agencies with minimum acceptable standards for surveys conducted to determine the status of this State and federally endangered species. The survey methods described within this protocol were designed to optimize the likelihood of detecting the presence of blunt-nosed leopard lizards should they occur on a project site.

When the presence of blunt-nosed leopard lizards is detected, we request that you notify the appropriate CDFW Region (Central or South Coast Regions) Permitting and Project Review staff for further instructions of additional information needed to assess the project's potential impact on the species. This will assist in expediting the review of the project and help control the project proponent's biological survey costs. Additionally, the USFWS should be contacted for further advice since this is also a federally-listed species. Use of this protocol and notification of CDFW does not exempt you from any required consultation with the USFWS.

CDFW is willing to coordinate with surveyors who have circumstances or needs not addressed by this protocol and who may wish to propose alternative methods to comply with State law prohibiting take of BNLL. If you have any questions or comments regarding this methodology or if you want to propose the use of a different methodology, please contact CDFW's Central Region Habitat Conservation Planning staff at (559) 243-4014 or South Coast Region Habitat Conservation Planning staff at (858) 467-4201 (for Santa Barbara and Ventura Counties).

# CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

## APPROVED SURVEY METHODOLOGY FOR THE BLUNT-NOSED LEOPARD LIZARD

October 2019 (Revised)

### **Blunt-nosed leopard lizard, *Gambelia sila***

**STATUS:** State Endangered, Federal Endangered, State fully protected

This protocol has been developed to provide a minimum level of protection for blunt-nosed leopard lizards (BNLL) when projects or maintenance activities are scheduled to occur within potential BNLL habitat. Disturbing activities should not proceed until appropriate surveys are conducted to determine if the species is present on the site. Surveys conducted according to the following protocol by qualified biologists provide a reasonable, although not conclusive, indication of BNLL presence at a particular site and yield critical information needed to prevent mortality and minimize impacts to the species. Individuals conducting the surveys are expected to understand the basic biological requirements of the species and have the ability to recognize potential BNLL habitat. This protocol satisfies the California Department of Fish and Wildlife (CDFW) requirements when it is determined that formal (e.g. "Protocol Level") BNLL surveys are needed. [Note: This protocol is appropriate for pre-project BNLL surveys, however, population monitoring over time on a site is best conducted using a permanent survey grid, such as described in Tollestrup (1976).]

### **METHODS:**

A minimum of two surveyors, walking parallel on adjacent transects, should conduct a BNLL survey. Optimum BNLL activity periods occur when air temperature is between 25C-35C (77F-95F) (Tollestrup 1976; USFWS 1985, 1998). Surveys must be conducted when the air temperature falls within the optimal range. Air temperature should be measured at 1-2 cm above the ground over a surface most representative of the area being surveyed. Surveyors must shade the thermometer from direct sunlight while taking the reading. Surveys may begin after 0800 hours and the minimum air temperature criterion is met and must end by 1400 hours or when the maximum temperature is reached, whichever occurs first (Tollestrup 1976; Germano *in press*). Time of day and air temperature should be recorded at the start and end of each survey. Air temperature should be periodically checked to ensure that the maximum has not been exceeded. Other factors that affect BNLL activity, such as soil temperature (measured at 1 cm below soil surface with a shaded thermometer) and weather conditions, must be recorded at the start and end of each survey. Surveys should not be conducted on overcast days (cloud cover >90%) or when sustained wind velocity exceeds 10 mph (force >3 on Beaufort wind scale) (Montanucci 1965; Tollestrup 1976; J. Vance, pers. comm.).

Surveys must be conducted on foot, and all areas with potential BNLL habitat must be surveyed. BNLL are often difficult to detect, particularly in areas where shrubs are fairly numerous (>30% cover) and/or the herbaceous vegetation is dense and tall (>30 cm). In such conditions, no greater than 10-meter-wide transects should be walked at a slow pace. In areas with few shrubs and shorter herbaceous vegetation (<10 cm), transects as wide as 20 meters are acceptable. When feasible, transects should be walked in a north-south orientation to minimize glare from the sun. The surveyor should stop periodically and scan

the transect for BNLL using close-focusing binoculars (minimum 7X35 magnification), including areas surrounding the project site. In addition to recording the location of all BNLL observed (UTM or latitude/longitude WGS84 coordinates), the presence of habitat features important for BNLL (washes, playas, relative abundance of small mammal burrows) should also be recorded for each transect. Streambeds, washes, roads, etc., should be walked in addition to transect lines since BNLL are often seen in these areas.

#### **TIMING AND LENGTH OF SURVEY:**

Survey intensity should be commensurate with the anticipated level of disturbance to the BNLL habitat. The primary concern for BNLL when disturbance occurs during maintenance activities is direct mortality from equipment or personnel. Removal of intact BNLL habitat has a much greater potential for take due to direct impact on animals aboveground as well as any hibernating animals or eggs underground. A longer survey effort including both spring adult surveys and fall hatchling surveys is therefore required for activities that cause impacts to BNLL habitat. The more intensive survey effort increases the chances of observing the species, even if the population is small. Once a BNLL has been observed, consultation with CDFW must begin regarding whether surveys should continue to determine distribution within the project site and to develop avoidance measures. If BNLL are observed incidentally while conducting surveys for other species, specific surveys for BNLL may not be required since presence has been established unless they are necessary to determine distribution within the project site. Surveys will be accepted for one year from the date of completion.

#### **SURVEYS FOR DISTURBANCES FOR MAINTENANCE ACTIVITIES:**

Examples of maintenance activities include grading existing roads, grass mowing on roadsides, and maintaining existing structures (except for maintenance requiring excavation for underground infrastructure). BNLL are active and above ground from April through September, but optimum activity periods for adults occur between April 15 and July 15 (Montanucci 1965; Tollestrup 1979; USFWS 1985, 1998, 2010). BNLL surveys should be conducted for a total of 8 days over the course of the 90-day time span. A minimum of 3 survey days should be conducted consecutively, with a maximum of 6 survey days completed within any 30-day time period. Fall hatchling surveys are not required for activities in this category.

#### **SURVEYS FOR DISTURBANCES LEADING TO HABITAT REMOVAL:**

Examples of disturbances that impact intact habitat include establishment of new roads or structures, solar development, oil development, residential development, changes in land use (e.g. conversion to irrigated agriculture), and excavations such as installation or maintenance of underground infrastructure. Adult BNLL surveys should be conducted for 12 days over the course of the 90-day adult optimal survey period (April 15 to July 15), with a maximum of 4 survey days per week and 8 survey days within any 30-day time period. At least one survey session should be conducted for 4 consecutive days. BNLL hatchlings and subadults are most commonly observed from August 15 to September 30, along with a few adults that are still active above ground (Germano et. al 1994; Montanucci 1965; Tollestrup 1979; USFWS 1985, 1998, 2010; J. Battistoni, pers. comm.). In addition to the 12 days of adult BNLL surveys required for activities in this category, 5 additional survey days are required during the hatchling optimal survey period listed above, with at least 2 survey days conducted between August 15-30 and at least 2 survey days between September 15-30, for a total of 17 survey days overall within the same survey season/calendar year.

## **QUALIFICATIONS OF SURVEYORS:**

An acceptable BNLL survey crew should consist of no more than 3 Level I surveyors for every Level II surveyor. This restriction should reduce the number of incorrect/missed identifications. The names and affiliations of all surveyors must be recorded for each survey day.

Level I: Surveyor has demonstrated the ability to distinguish BNLL from other common lizard species that may inhabit the area;

Level II: Surveyor has demonstrated the ability to distinguish BNLL from other common lizard species that may inhabit the area and has participated in at least 50 survey days for BNLL (or 25 survey days and a BNLL identification course recognized by/acceptable to CDFW). Surveyor has made at least one confirmed\* field sighting of a BNLL.

Before surveys commence, CDFW recommends that surveyor qualifications be submitted to CDFW for the assessment of surveyor level qualifications.

\*A minimum of one confirmed field sighting must be documented for each Level II surveyor and be available to CDFW upon request. As with all BNLL sightings, it should also be submitted to the CNDDDB. Information to be included in documentation of BNLL sighting: Name of surveyor, date of survey, location of survey, names of accompanying Level II surveyors who can confirm the sighting, and details of sighting (distance, BNLL activity, etc).

## **REPORTING:**

All BNLL survey results should be submitted to CDFW. Survey report(s) should include, at a minimum, the project contact, a brief project description, type of habitat disturbance, project location, habitat description, survey methodologies, survey dates, weather conditions, surveyors and their qualifications (identify the Level II surveyor(s)), acres or areas surveyed per day, mapping, other special status species sightings, and survey results with data sheets (sample data sheet is attached). Adequate mapping should include general project location, survey area with aerial imagery, and special status species locations with UTM or latitude/longitude WGS84 coordinates.

In order for a BNLL survey effort (that resulted in a negative finding of BNLL on a project site) to be accepted by CDFW as a negative finding, a survey report must be submitted to CDFW for review a minimum of 30 calendar days prior to Project commencement.

Submit report to:

California Department of Fish and Wildlife  
Central Region  
ATTN: Habitat Conservation Planning Supervisor  
1234 E. Shaw Ave  
Fresno, CA 93710

OR

California Department of Fish and Wildlife  
South Coast Region  
ATTN: Habitat Conservation Planning Supervisor  
3883 Ruffin Road  
San Diego, CA 92123

In addition, all BNLL observations should be reported to the California Natural Diversity Database (CNDDDB) and the appropriate CDFW Region within 30 days of survey completion. Data submission guidance to CNDDDB can be obtained at <https://www.wildlife.ca.gov/Data/CNDDDB/Submitting-Data>.

## **SPECIAL REQUIREMENT FOR SURVEYS IN SAN LUIS OBISPO, SAN BENITO, SANTA BARBARA, AND VENTURA COUNTIES**

Projects with potential BNLL habitat in San Luis Obispo, San Benito, Santa Barbara, and Ventura Counties have different conditions compared to potential BNLL habitat in the San Joaquin Valley. The sites with habitat in these counties tend to be at higher elevations, where nighttime temperatures can remain low even though daytime temperatures meet minimum survey criteria. In such conditions, BNLL activity is likely to be low and surveys could result in non-detection of the species even though they are present. As such, an additional requirement of a visit to a known voucher site to check for BNLL activity applies to surveys conducted in these counties. Once the species has been observed at the voucher site, formal surveys can begin. The Carrizo Plain ER located on the Elkhorn Plain has been selected as the voucher site for these counties.

## **CONTACT INFORMATION**

### **California Department of Fish and Wildlife**

Central Region  
Habitat Conservation Planning  
1234 Shaw Ave  
Fresno, CA 93710  
(559) 243-4005

South Coast Region  
Habitat Conservation Planning  
3883 Ruffin Road  
San Diego, CA  
(858) 467-4201

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CDFW is willing to coordinate with surveyors who have circumstances or needs not addressed by this protocol and who may wish to propose alternative methods to comply with State law prohibiting take of BNLL.

## **LITERATURE CITED**

- Germano, D.J., D.F. Williams, W. Tordoff III, 1994. Effect of drought on blunt-nosed leopard lizards (*Gambelia sila*). *Northwestern Naturalist* 75(1): 11-19.
- Germano, D.J., *in press*. Activity and Thermal Biology of Blunt-nosed Leopard Lizards in the San Joaquin Desert of California. *Western North American Naturalist*.
- Montanucci, R.R., 1965. Observations of the San Joaquin leopard lizard, *Crotaphytus wislizenii silus* Stejneger. *Herpetologica* 21(4): 270-283.
- Tollestrup, K. 1976. A standardized method of obtaining an index of densities of blunt-nosed leopard lizards, *Crotaphytus silus*. Unpub. Rpt. U. S. Fish and Wildlife Service, Sacramento, CA. 11pp + Appendices.

Tollestrup, K. 1979. The ecology, social structure, and foraging behavior of two closely-related leopard lizards, *Gambelia silus* and *Gambelia wislizenii*. PhD Dissertation, University of California Berkeley.

United States Fish and Wildlife Service (USFWS). 1985. Revised blunt-nosed leopard lizard recovery plan. United States Fish and Wildlife Service. Region 1, Portland, OR. 85 pp.

USFWS. 1998. Recovery plan for upland species of the San Joaquin Valley, California. United States Fish and Wildlife Service. Region 1, Portland, OR. 319 pp.

USFWS. 2010. Blunt-nosed leopard lizard (*Gambelia sila*) 5-year review: summary and evaluation. Sacramento Fish and Wildlife Office, USFWS, Sacramento, CA, USA.

## **PERSONAL COMMUNICATIONS**

Julie Vance, California Department of Fish and Wildlife, Central Region, 1234 East Shaw Ave., Fresno, California, 93710.

John Battistoni, California Department of Fish and Wildlife, Central Region, 1234 East Shaw Ave., Fresno, California, 93710.

# Blunt-Nosed Leopard Lizard Survey Reporting Form

**SURVEY DATE(S)** (up to 5 days of surveys from a single site can be reported on this form):

\_\_\_\_\_

**SURVEYORS:** \_\_\_\_\_

\_\_\_\_\_

**SITE NAME** [Please also attach or sketch a map on back]: \_\_\_\_\_

**County:** \_\_\_\_\_ **Landowner/Mgr:** \_\_\_\_\_

**Quad Name:** \_\_\_\_\_ **Elevation:** \_\_\_\_\_

**T** \_\_\_\_\_ **R** \_\_\_\_\_  $\frac{1}{4}$  of Section \_\_\_\_\_

**UTM Zone (10,11):** \_\_\_\_\_ **Datum:** \_\_\_\_\_ (NAD83, NAD27, WGS84, other)

**Source (GPS, map & type, other):** \_\_\_\_\_ **Point Accuracy** \_\_\_\_\_ meters

**COORDINATES:** \_\_\_\_\_

## SURVEY RESULTS

| DATE | START TIME | END TIME | START AIR TEMP | END AIR TEMP | # BNLL OBSERVED<br>Adults/Hatchlings | PERSON-HOURS<br>(# Surveyors) X<br>(# Hours Walked) | APPROXIMATE<br>DISTANCE<br>COVERED<br>(IN TENTHS OF A<br>MILE) |
|------|------------|----------|----------------|--------------|--------------------------------------|-----------------------------------------------------|----------------------------------------------------------------|
|      |            |          |                |              | /                                    |                                                     |                                                                |
|      |            |          |                |              | /                                    |                                                     |                                                                |
|      |            |          |                |              | /                                    |                                                     |                                                                |
|      |            |          |                |              | /                                    |                                                     |                                                                |
|      |            |          |                |              | /                                    |                                                     |                                                                |

### TOTAL NUMBER OF OBSERVATIONS FOR THE THREE MOST COMMON LIZARD SPECIES ENCOUNTERED (combined numbers for all survey days):

Species \_\_\_\_\_

Number Observed: \_\_\_\_\_

Species \_\_\_\_\_

Number Observed: \_\_\_\_\_

Species \_\_\_\_\_

Number Observed: \_\_\_\_\_

**HABITAT DESCRIPTION:** General description of vegetation community, overall habitat quality, surrounding land use, threats, etc: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**HABITAT DESCRIPTION:** Estimation of Average Vegetative Cover on the Site  
[circle the correct value]:

|                |        |         |         |         |      |
|----------------|--------|---------|---------|---------|------|
| % Shrub:       | 0-10%, | 10-25%, | 25-50%, | 50-75%, | >75% |
| % Forb:        | 0-10%, | 10-25%, | 25-50%, | 50-75%, | >75% |
| % Grass:       | 0-10%, | 10-25%, | 25-50%, | 50-75%, | >75% |
| % Bare Ground: | 0-10%, | 10-25%, | 25-50%, | 50-75%, | >75% |

**NOTES ABOUT THE SURVEY/HABITAT/SPECIAL-STATUS SPECIES/ETC:**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**PLEASE RETURN THIS SURVEY REPORTING FORM TO THE APPROPRIATE CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE REGION AT THE FOLLOWING ADDRESS:**

California Department of Fish and Wildlife  
Central Region  
ATTN: Habitat Conservation Planning Supervisor  
1234 East Shaw Avenue  
Fresno, CA 93710

OR

California Department of Fish and Wildlife  
South Coast Region  
ATTN: Habitat Conservation Planning Supervisor  
3883 Ruffin Road  
San Diego, CA 92123

**\*\*\*ALL OBSERVATIONS OF BLUNT-NOSED LEOPARD LIZARDS AND OTHER SPECIAL STATUS SPECIES SHOULD BE PROMPTLY REPORTED TO THE CALIFORNIA NATURAL DIVERSITY DATABASE (CNDDDB). SUBMISSION OF THIS FORM DOES NOT ENTAIL REPORTING TO THE DATABASE, WHICH IS MAINTAINED BY THE BIOGEOGRAPHIC DATA BRANCH OF CDFW. PLEASE SEE THE SURVEY PROTOCOL FOR DIRECTIONS ON REPORTING TO CNDDDB.**