

**American Badger surveys on San Diego County Land summary of 2020-2021 field efforts.**



Prepared for:

San Diego Management & Monitoring Program

U.S. Department of the Interior  
U.S. Geological Survey  
Western Ecological Research Center



## **Summary 2020**

American Badger Surveys in San Diego County were performed in 2020 from February 4 to December 17, we surveyed for badger sign across eleven reserves/sites within San Diego County. We focused on predefined focal areas and where fresh sign was found during our 2015 surveys in order to better characterize badger use of these areas and to locate denning and burrow areas. We started by setting infrared cameras in areas with confirmed badger sign at our core sites Volcan Mountain Wilderness Preserve and Lake Morena County Park. Once cameras were set, repeat visits were conducted every 8-10 weeks to check and reset cameras and to survey for fresh sign. If fresh badger sign was found, cameras were checked within 3-4 weeks. Surveys were performed based on procedures described in the USGS Badger Report Synthesis (Brehme et al, 2020). We continued to add cameras and survey at sites in response to phone calls and emails from our badger outreach hotline.

Surveys focused on two core locations (Volcan Mountain Wilderness Preserve and Lake Morena County Park) from February - December 2020 with Ramona Grasslands County Preserve, Barnett Ranch County Preserve, Santa Ysabel East and West County Preserves, Clover flats Wildlife Preserve, Denlinger Valley, Rancho Guejito, San Diego River Park Property and Pamo Valley visited for discovery in response to historical badger activity or reported sightings from our badger hotline. We verified American badger at seven of the sites on nine different occasions (Volcan Mountain Wilderness Preserve, Lake Morena County Park, Clover Flats Wildlife Preserve, Denlinger Valley, Rancho Guejito, and Santa Ysabel East and West County Preserves). We received 23 phone calls or emails from citizen scientists to our badger hotline, with 10 of those contacts being high confidence of badger observations (Badger\_Hotline\_2020to2021\_Datasheet). At our other core site of Lake Morena County Park badger activity was observed on many occasions from March through December, with multiple camera captures throughout the area (Figure 1). At the core site of Volcan Mountain Wilderness Preserve we documented fresh badger sign in August with a badger captured on camera on 8/7/2020 visiting a burrow (Figure 2). See attached spreadsheet (Badger\_SDCounty\_2020to2021\_Datasheet) for 2020 summary data and for specific survey dates, locations, and results. Many of our surveys were performed by our USGS badger volunteer team, after training from USGS biologists on survey procedures and badger sign.

## **Summary 2021**

In 2021, we surveyed for badger sign across six reserves/sites within San Diego County from January 7 to November 29. Repeat surveys focused on two core locations (Volcan Mountain Wilderness Preserve and Lake Morena County Park) where repeated badger activity has been documented since 2013 and in 2020 to better characterize badger use of these areas and to locate denning and burrow areas. Rancho Jamul Ecological Preserve, Cuyamaca State Park (7 Survey visits), Santa Ysabel Cauzza County Preserve (3 survey visits), and Clover Flats Wildlife Preserve were surveyed for discovery or in response to reported sightings from our badger hotline.

We verified American badger activity at three of the sites (Lake Morena County Park, Cuyamaca State Park and Santa Ysabel Cauzza County Preserve). At the core site of Volcan Mountain Wilderness Preserve, no badger activity was detected during surveys in 2021. Surveys at Lake Morena County Park detected fresh badger activity from February through November (Figure 3). We received 27 phone calls or emails from citizen scientists to our badger hotline, with 15 reports confirmed by USGS to be high confidence badger observations (General Locations-Lake Morena County Park, Cuyamaca State Park, Ramona, CA, Pine Valley, CA, Anza Borrego,

CA, San Clemente, CA, Redlands, CA, and Riverside County, CA.) (Badger\_Hotline\_2020to2021\_Datasheet). Of those 13 high confidence reports, 6 were roadkill badgers, 6 were photos from wildlife cameras and one badger was brought to Project Wildlife after getting into a fight with two dogs. See attached spreadsheet (Badger\_SDCounty\_2020to2021\_Datasheet) for 2021 summary data and for survey dates, locations, and results.

#### Surveyors:

Devin Adsit-Morris, Cheryl Brehme, Bob Ollerton (Volunteer), Dick Chadwick (Volunteer), Nancy Butsumyo (Volunteer), Vince Butsumyo (Volunteer) and Phoenix Von Hendy (Volunteer)

Special thanks to our USGS badger volunteer team (Figures 4-7) that conducted over 35 badger sign surveys during 2020-2021 and covered hundreds of acres across San Diego County. Without their help we would not be able to collect and provide the much-needed data on badger activity in the county.

More complete data and analysis will be provided in our next synthesis.

#### References:

Brehme, C.S., D.T. Adsit-Morris, and R.N. Fisher. 2020. American Badger Research in Western San Diego County; Results Synthesis, Literature Review and Pathway for Future Research and Monitoring, Draft Final.

San Diego County Badger Surveys 2020- 2021 (Badger\_SDCounty\_2020to2021\_Datasheet)

Badger Hotline and Email Contacts 2020- 2021 (Badger\_Hotline\_2020to2021\_Datasheet)



Figure 1. Badger Burrow with Hair Snag, Lake Morena May 15, 2020.



Figure 2. Badger captured at Volcan Mountain Wilderness Preserve, August 7, 2020.



Figure 3. Badger captured at Lake Morena County Park, July 17, 2021.



Figure 4. Nancy Butsumyo and Dick Chadwick surveying Volcan Mountain Wilderness Preserve.



Figure 5. Dick Chadwick inspecting a burrow at Santa Ysabel County Preserve.



Figure 6. Devin Adsit-Morris (USGS) training the volunteer team at Lake Morena County Park.

A.



B.



Figure 7. (A) Nancy Butsumyo inspecting a burrow and (B) Vince Butsumyo collecting habitat data.

Table 1. Badger Activity Summary

Date	Location	Survey/ Hotline	Badger Sign? (Y/N)	Sign Type	UTM Easting	UTM Northing
1/7/2020	Lake Morena	Hotline	Yes	Burrows and Digs	544205.92	3619337.88
2/4/2020	Volcan Mountain Wilderness Preserve	Surveyed and cam check	No new badger sign	NA	NA	NA
2/4/2020	San Diego River Park	Surveyed and cam check	No new badger sign	NA	NA	NA
3/25/2020	Lake Morena	Hotline	Yes	Burrows and Digs	544124.54	3619215.56
4/13/2020	Lake Morena County Park	Badger Sign Survey	Yes	Burrows and Digs	545501	3618092
4/15/2020	Border area and Shockey Truck Trail	Hotline	Yes	Badger with babies	558206.75	3607375.64
4/16/2020	Border area and Shockey Truck Trail	Hotline	Yes	Badger	560042.6	3606944.61
4/26/2020	Anza Borrego	Hotline	Yes	Badger	575002.75	3634343.72
5/13/2020	4730 Quiet Oaks Trail, Julian	Hotline	Yes	Badger	536205.69	3656003.27
5/13/2020	Frisius Drive, YMCA Camp	Hotline	Yes	Badger	536337.43	3656268.4
5/15/2020	Lake Morena County Park	Badger Sign Survey	Yes	Burrows and Digs (Figure 1)	54539.78	3618103.46
5/16/2020	Otay Area	Hotline	Yes	Digs	507556.5	3613947.81
5/19/2020	Mountain Warfare Training in La Posta	Hotline	Yes	Burrows and Digs	550594	3616248
5/19/2020	Denlinger Valley	Badger Sign Survey	Yes	Old Burrows	551276.71	3615840.23
5/21/2020	Pamo Valley	Badger Sign Survey	No	NA	NA	NA
7/1/2020	Clover Flats Wilderness Preserve	Badger Sign Survey	Yes	Burrows	555140.24	3614131.62
7/2/2020	Rancho Guejito	Badger Sign Survey	Yes	Burrow	510926.92	3671915.99
7/14/2020	Camp Pendleton, 4611 Sleeping Indian Road, Fallbrook	Hotline	Yes	Badger	475005.76	3685432.81
7/14/2020	Lake Morena County Park	Surveyed and cam check	Yes	Badger on Cam (Figure 2)	545393.27	3618110.66
8/4/2020	Jackrabbit trail, Redlands CA	Hotline	Yes	Badger	494080.31	3751049.06
8/5/2020	Clover Flats Wilderness Preserve	Badger Sign Survey	Yes	Tracks	555406.78	3613494.76
8/5/2020	Volcan Mountain Wilderness Preserve	Surveyed and cam check	Yes	Burrow	539319.7	3662813.57
9/1/2020	Volcan Mountain Wilderness Preserve	Surveyed and cam check	Yes	Camera (Figure 5)	539319.7	3662813.57
9/28/2020	Barnett Ranch County Preserve	Badger Sign Survey	No	NA	NA	NA
10/8/2020	Barnett Ranch County Preserve	Badger Sign Survey	No	NA	NA	NA
10/21/2020	Santa Ysabel East County Preserve	Badger Sign Survey	Yes	Old Digs	536122.3	3664651
10/29/2020	Santa Ysabel East County Preserve	Badger Sign Survey	Yes	Old Digs	535156.7	3664952.3
11/6/2020	Santa Ysabel West County Preserve	Badger Sign Survey	No	NA	NA	NA
11/24/2020	Santa Ysabel West County Preserve	Badger Sign Survey	Yes	Old Digs	528049.1	3662857.4
12/17/2020	Ramona Grasslands County Preserve	Badger Sign Survey	No	NA	NA	NA
1/19/2021	Cuyamaca Rancho State Park	Hotline	Yes	Burrows and Digs	540351.96	3648695.87
3/11/2021	Jacumba, CA	Hotline	Yes	Badger	581769.65	3614799.26
1/7/2021	Lake Morena County Park	Badger Sign Survey	Yes	Digs	545445.46	3618142.88
2/25/2021	Cuyamaca State Park	Badger Sign Survey	Yes	Burrows and Digs	540247.21	3648575.85
3/22/2021	Cuyamaca State Park	Surveyed and cam check	Yes	Digs	539975.4	3648688.6
4/1/2021	Cuyamaca State Park	Badger Sign Survey	Yes	Burrows and Digs	539603.87	3648540.46
4/2/2021	Redlands Blvd.	Hotline	Yes	Dead Badger	485632.7	3760264.29
4/6/2021	Cuyamaca State Park	Surveyed and cam check	Yes	Burrows and Digs	540090.04	3648636.98
4/7/2021	Cuyamaca State Park	Badger Sign Survey	No	NA	NA	NA
4/23/2021	Cuyamaca State Park	Badger Sign Survey	Yes	Burrows and Digs	541351.74	3648751.49
5/3/2021	Anza Borrego Desert	Hotline	Yes	Badger	583242.98	3609908.6
5/5/2021	Anza Borrego/ Cuyamaca State Park	Badger Sign Survey	Yes	Burrows and Digs	543509.2	3650978
5/10/2021	Anza Borrego/ Cuyamaca State Park	Badger Sign Survey	Yes	Burrows and Digs	543333.1	3650774.4
5/25/2021	Trabuco Canyon/San Juan Capistrano	Hotline	Yes	Badger	447587.8	3715423.48
5/26/2021	Lake Morena	Hotline	Yes	Badger	545342.46	3618257.16
6/3/2021	Rancho Jamul Ecological Preserve	Badger Sign Survey	No	NA	NA	NA
6/16/2021	Avenida La Pata, San Juan Capistrano	Hotline	Yes	Dead Badger	443184.98	3705551.15
6/19/2021	Woodcrest, CA	Hotline	Yes	Dead Badger	464764.73	3749154.11
7/22/2021	Clover Flats Wilderness Preserve	Badger Sign Survey	No	NA	NA	NA
7/31/2021	Buckman Springs Road	Hotline	Yes	Dead Badger	549359.22	3610303.28
8/5/2021	Lake Morena	Surveyed and cam check	Yes	Camera (Figure3)	545465.28	3618180.5
8/16/2021	60 westbound freeway, Riverside	Hotline	Yes	Dead Badger	497333.98	3754686.07
8/19/2021	Buckman springs Rd.	Hotline	Yes	Dead Badger	547446.89	3623859.3
8/25/2021	Pine Valley	Hotline	Yes	Live Badger	543844.31	3631437.14
9/23/2021	Ramona, San Diego Habitat Conservancy	Hotline	Yes	Badger	505274	3654677
10/19/2021	Santa Ysabel Cauzza County Preserve	Badger Sign Survey	Yes	Digs	529780.1	3665116.1
11/1/2021	Cuyamaca State Park	Badger Sign Survey	No	NA	NA	NA
11/22/2021	Volcan Mountain Wilderness Preserve	Badger Sign Survey	No	NA	NA	NA
11/29/2021	Cuyamaca State Park	Badger Sign Survey	Yes	Digs	540994.8	3643067.3