



SANTA CLARA VALLEY
HABITAT AGENCY

Santa Clara Valley Habitat Plan

Public Advisory Committee

February 3, 2022



SANTA CLARA VALLEY
HABITAT AGENCY



City of Gilroy

City of Morgan Hill

City of San José

County of Santa Clara

Santa Clara Valley Water District

Santa Clara Valley
Transportation Authority

Agenda

- **Summary of 2021 Survey Effort**
- **Population Trends at Key Nesting Sites**
- **Research/Conservation Projects**

Summary of 2021 Survey Effort

- Coordinated with South Bay Burrowing Owl Survey Network throughout the survey period on population status and trends
- Surveyed five extant breeding sites:
 1. San Jose-Santa Clara Regional Wastewater Facility
 2. Shoreline in Mountain View
 3. Moffett Airfield
 4. San Jose International Airport
 5. Don Edwards National Wildlife Refuge – Warm Springs



SANTA CLARA VALLEY
HABITAT AGENCY



City of Gilroy

City of Morgan Hill

City of San José

County of Santa Clara

Santa Clara Valley Water District

Santa Clara Valley
Transportation Authority



SANTA CLARA VALLEY
HABITAT AGENCY



City of Gilroy

City of Morgan Hill

City of San José

County of Santa Clara

Santa Clara Valley Water District

Santa Clara Valley
Transportation Authority

South Bay Burrowing Owl Survey Network

- **San Jose-Santa Clara Regional Wastewater Facility, Alviso**
- **Shoreline – City of Mountain View**
- **Sunnyvale Landfill & Baylands Park– City of Sunnyvale**
- **Don Edwards National Wildlife Refuge – Warm Springs Unit**
- **NASA Ames Research Center - Moffett Field**
- **ICF**
- **Albion Environmental**
- **San Jose State University**
- **San Jose International Airport – USDA**
- **Santa Clara Valley Audubon Society**
- **Talon Ecological Research Group**



SANTA CLARA VALLEY
HABITAT AGENCY



- City of Gilroy
- City of Morgan Hill
- City of San José
- County of Santa Clara
- Santa Clara Valley Water District
- Santa Clara Valley Transportation Authority

2021 Burrowing Owl Breeding Season Survey Results

Site Name/Location	Number of Adults	Number of Young Fledged
Within Permit Area		
San Jose International Airport	4	10
San Jose – Santa Clara Water Regional Wastewater Facility	12	9
Permit Area Subtotal	16	19
Within Expanded Burrowing Owl Conservation Area		
Shoreline at Mountain View	11	6
Don Edwards NWR – Warm Springs Unit	0	0
NASA Ames Moffett Airfield	5	7
Ohlone (Captive Breeding Facility)	4	4
Expanded Area Subtotal	20	17
Grand Total	36	36



SANTA CLARA VALLEY
HABITAT AGENCY



City of Gilroy

City of Morgan Hill

City of San José

County of Santa Clara

Santa Clara Valley Water District

Santa Clara Valley
Transportation Authority

Location		2014	2015	2016	2017	2018	2019	2020	2021
San Jose International Airport	Number of Adults	35	18	12	8	10	4	9	4
	Number of Chicks	34	24	21	14	8	11	17	10
SJ/SC Regional Wastewater Facility	Number of Adults	16	22	25	34	18	12	6	12
	Number of Chicks	17	46	58	29	23	21	9	9
Shoreline	Number of Adults	8	6	4	5	4	2	16	11
	Number of Chicks	6	3	4	0	14	6	35	6
Don Edwards NWR – Warm Springs	Number of Adults	17	6	8	12	6	3*	0	0
	Number of Chicks	4	13	13	7	5-6	0	0	0
Moffett Airfield	Number of Adults	24	17	12	13	12	12	4	5
	Number of Chicks	20	11	12	13	30	8	5	7
Ohlone (Captive Breeding)	Number of Adults	-	-	-	-	-	-	-	4
	Number of Chicks	-	-	-	-	-	-	-	4
Other Locations	Number of Adults	16	5	--	2	--	0	0	0
	Number of Chicks	6	--	--	1	--	0	0	0
Total	Number of Adults	116	74	61	74	50	33	35	36
	Number of Chicks	87	97	108	64	80-81	46	66	36



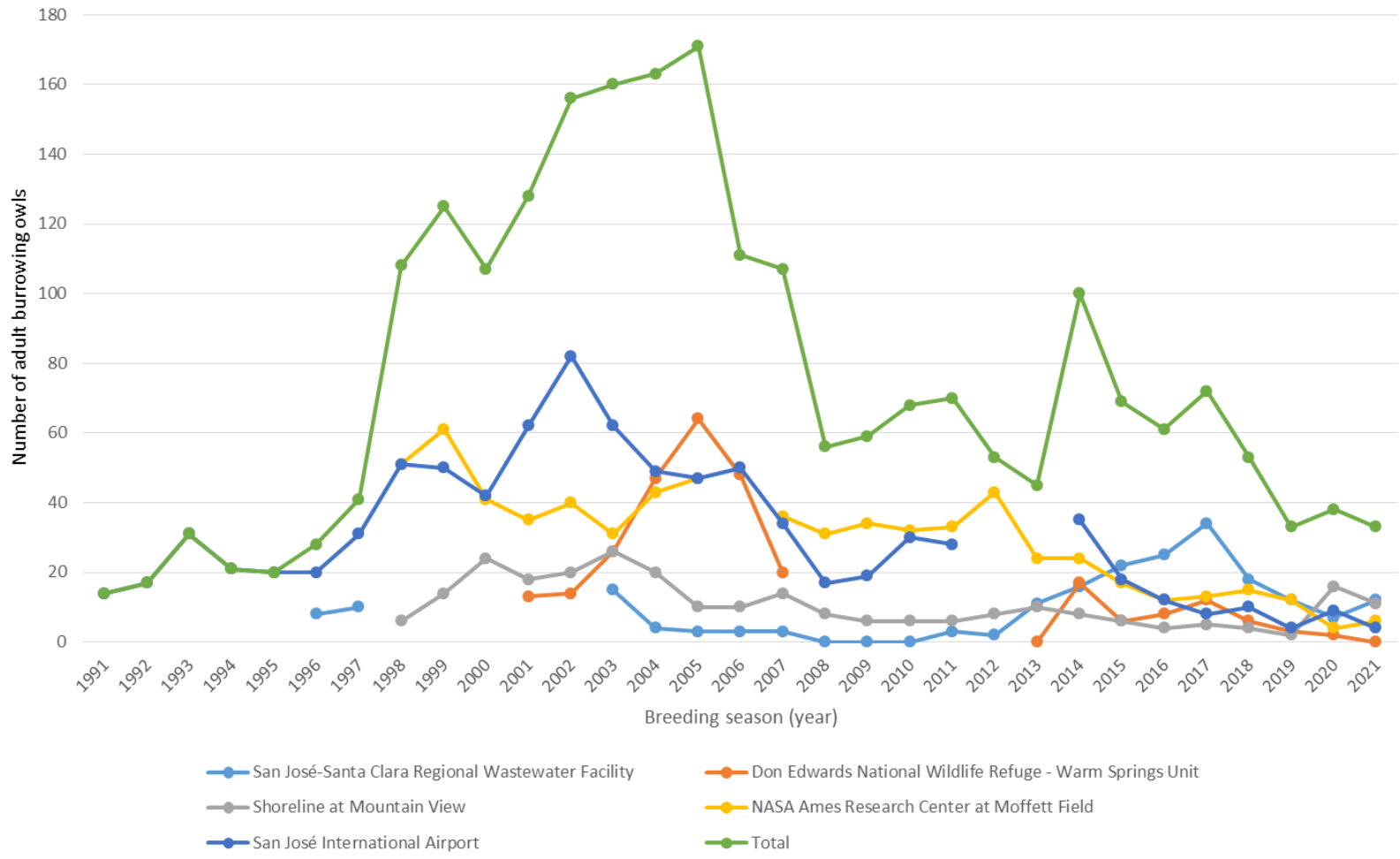
SANTA CLARA VALLEY
HABITAT AGENCY



- City of Gilroy
- City of Morgan Hill
- City of San José
- County of Santa Clara
- Santa Clara Valley Water District
- Santa Clara Valley Transportation Authority

Number of Adult Burrowing Owls 1991 - 2021

South Bay Area Annual Burrowing Owl Survey Results



2020-2021 Burrowing Owl Survey Coverage



SANTA CLARA VALLEY
HABITAT AGENCY



City of Gilroy

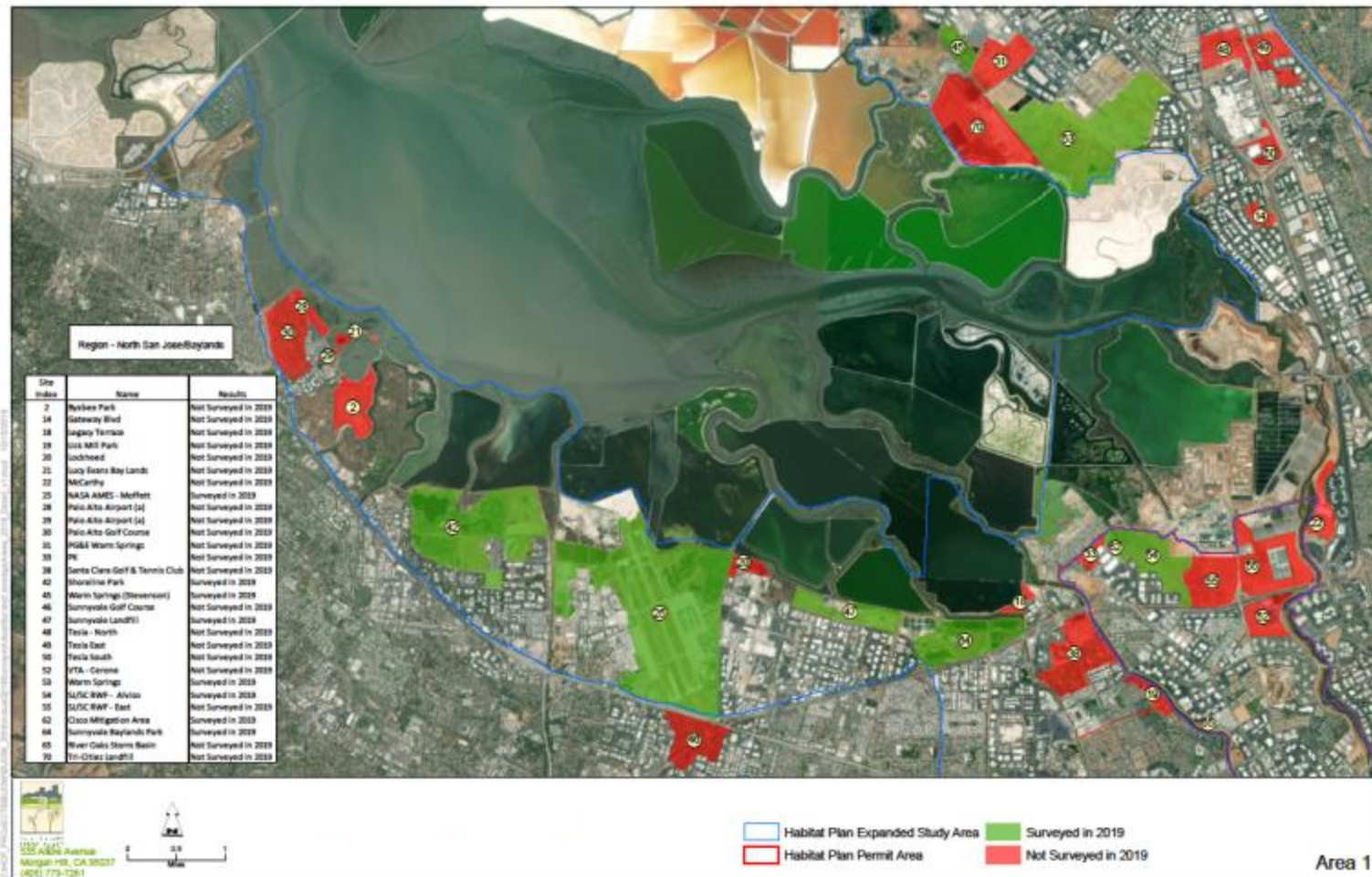
City of Morgan Hill

City of San José

County of Santa Clara

Santa Clara Valley Water District

Santa Clara Valley
Transportation Authority



Burrowing Owl Conservation Projects



SANTA CLARA VALLEY
HABITAT AGENCY



City of Gilroy

City of Morgan Hill

City of San José

County of Santa Clara

Santa Clara Valley Water District

Santa Clara Valley
Transportation Authority



Shoreline in Mountain View



SANTA CLARA VALLEY
HABITAT AGENCY



City of Gilroy

City of Morgan Hill

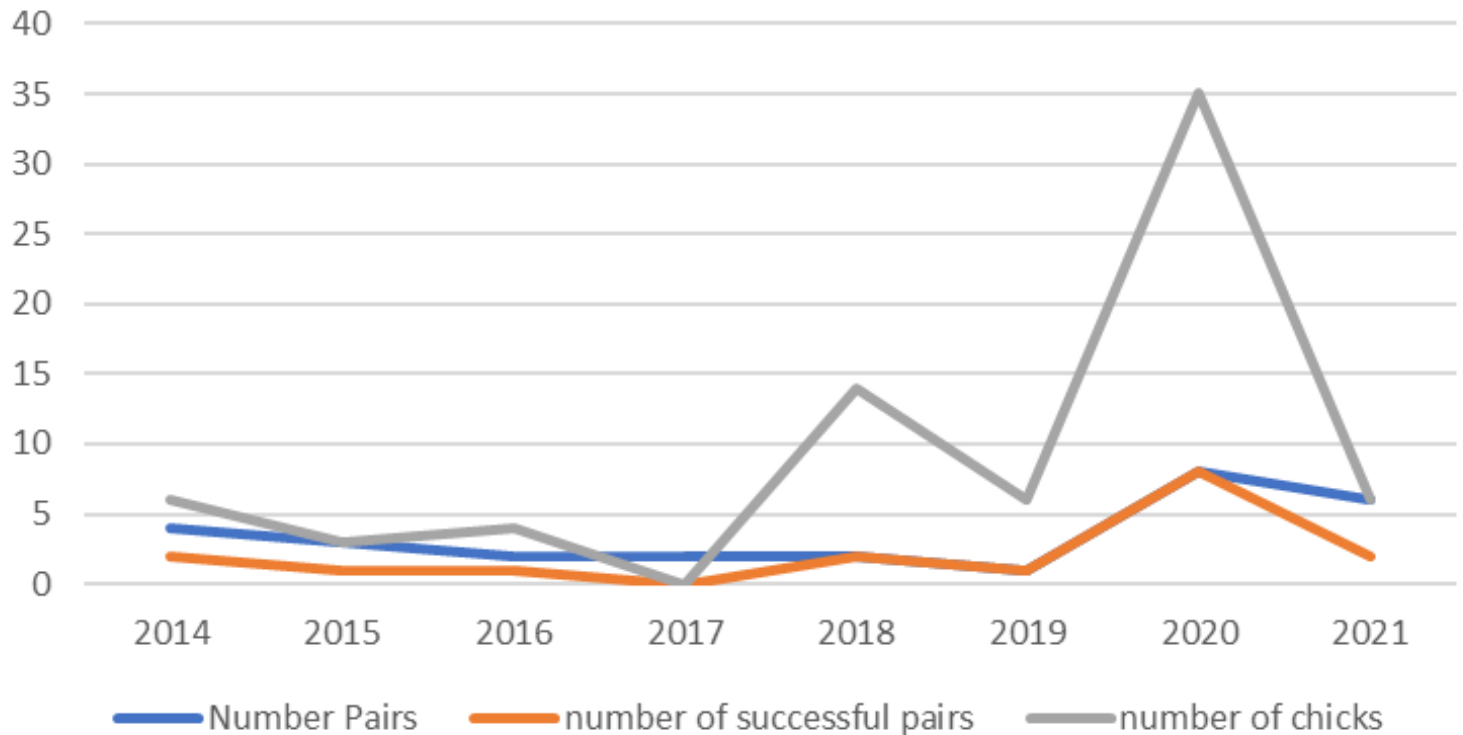
City of San José

County of Santa Clara

Santa Clara Valley Water District

Santa Clara Valley
Transportation Authority

Shoreline Breeding Data 2014-2021



Shoreline Breeding Data 2020 & 2021



SANTA CLARA VALLEY
HABITAT AGENCY



- City of Gilroy
- City of Morgan Hill
- City of San José
- County of Santa Clara
- Santa Clara Valley Water District
- Santa Clara Valley Transportation Authority

	Number of Potential Breeding Pairs	Number of Successful Breeding Pairs	Total Number of Young Produced
2020	8	8	36
2021	5	2	6

Shoreline Habitat Enhancement



SANTA CLARA VALLEY
HABITAT AGENCY



City of Gilroy

City of Morgan Hill

City of San José

County of Santa Clara

Santa Clara Valley Water District

Santa Clara Valley
Transportation Authority



Fence



No-mow
areas



Native
Plantings



Irrigation



Removal
of tall trees



New artificial
burrows



Shoreline in Mountain View

Six-foot tall chain link fence



Low-growing native plant islands



Irrigation-areas using water cannons



Ground Squirrel relocation program



SANTA CLARA VALLEY
HABITAT AGENCY



City of Gilroy

City of Morgan Hill

City of San José

County of Santa Clara

Santa Clara Valley Water District

Santa Clara Valley
Transportation Authority

RWF in Alviso

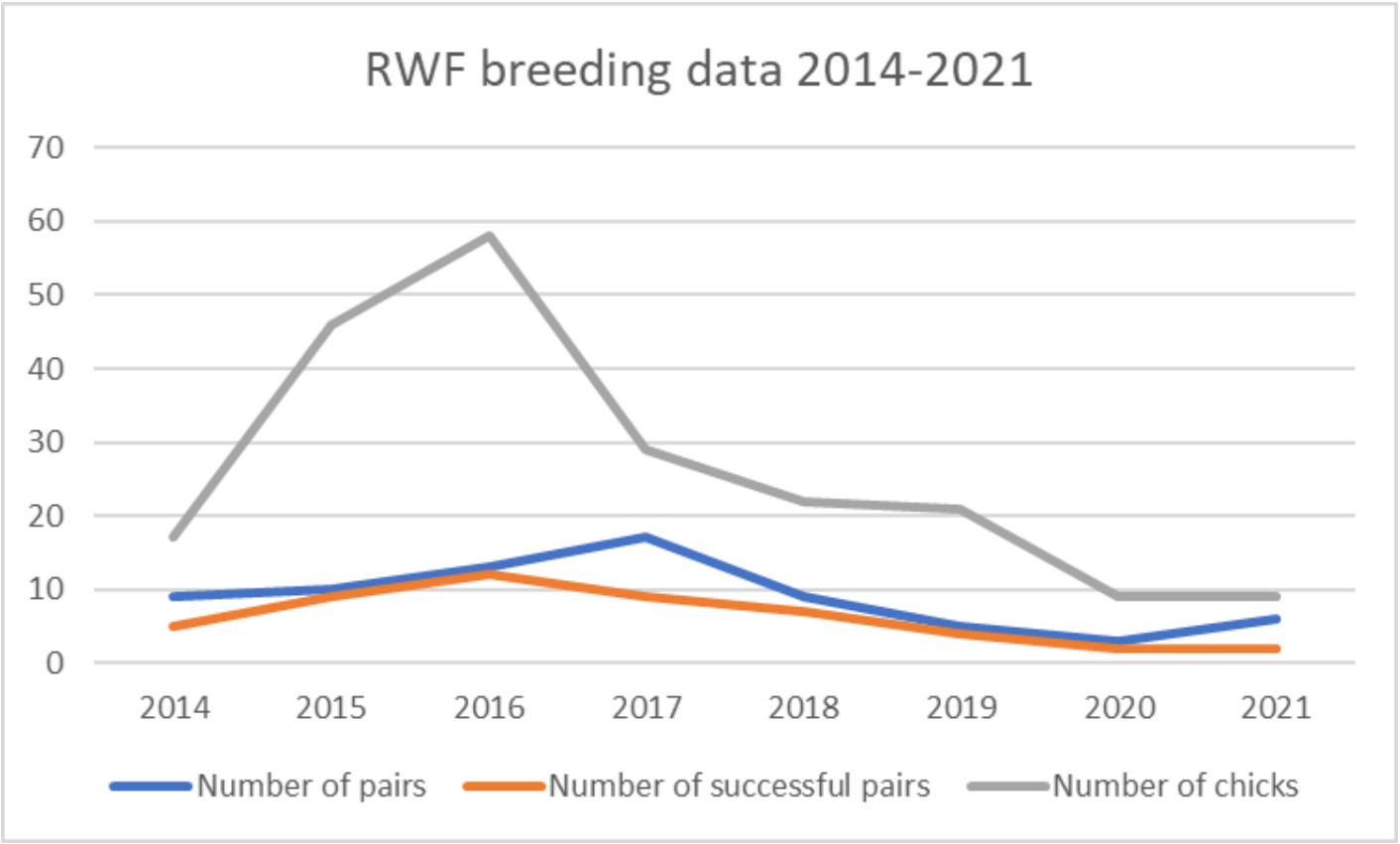


SANTA CLARA VALLEY
HABITAT AGENCY



City of Gilroy
City of Morgan Hill
City of San José
County of Santa Clara
Santa Clara Valley Water District
Santa Clara Valley Transportation Authority

RWF breeding data 2014-2021





SANTA CLARA VALLEY
HABITAT AGENCY



City of Gilroy
City of Morgan Hill
City of San José
County of Santa Clara
Santa Clara Valley Water District
Santa Clara Valley
Transportation Authority

RWF Breeding Data 2020 & 2021

	Number of Potential Breeding Pairs	Number of Successful Pairs	Number of Young Produced
2020	3	2	9
2021	6	2	9

RWF in Alviso



SANTA CLARA VALLEY
HABITAT AGENCY



City of Gilroy

City of Morgan Hill

City of San José

County of Santa Clara

Santa Clara Valley Water District

Santa Clara Valley
Transportation Authority



No-mow area



Native
Plantings



Removal of
trees



New artificial
burrows



RWF in Alviso

Spraying



Native Plants



Artificial Burrows



Weed Removal



SANTA CLARA VALLEY
HABITAT AGENCY



City of Gilroy

City of Morgan Hill

City of San José

County of Santa Clara

Santa Clara Valley Water District

Santa Clara Valley
Transportation Authority



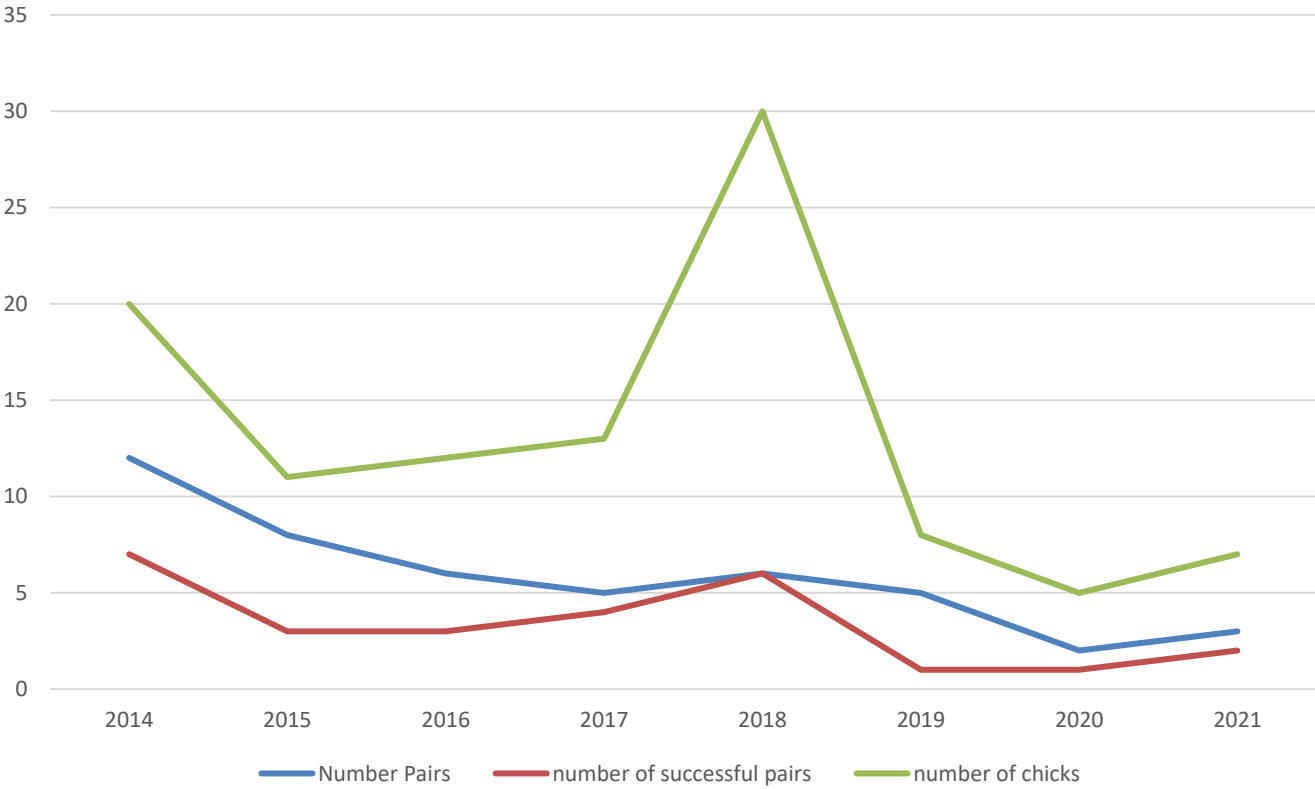
SANTA CLARA VALLEY
HABITAT AGENCY



- City of Gilroy
- City of Morgan Hill
- City of San José
- County of Santa Clara
- Santa Clara Valley Water District
- Santa Clara Valley Transportation Authority

Moffett Airfield

Moffett Breeding Data 2014-2021





SANTA CLARA VALLEY
HABITAT AGENCY



City of Gilroy
City of Morgan Hill
City of San José
County of Santa Clara
Santa Clara Valley Water District
Santa Clara Valley
Transportation Authority

Moffett Breeding Data 2020 & 2021

	Number of Potential Breeding Pairs	Number of Successful Pairs	Total Number of Young Produced
2020	2	1	5
2021	3	2	7

Moffett Habitat Enhancement



SANTA CLARA VALLEY
HABITAT AGENCY



City of Gilroy

City of Morgan Hill

City of San José

County of Santa Clara

Santa Clara Valley Water District

Santa Clara Valley
Transportation Authority



Increased mowing
& spraying



Artificial Burrows



Google Earth

Moffett



Mowing



Artificial Burrows



Signs & cones



Spraying



SANTA CLARA VALLEY
HABITAT AGENCY



City of Gilroy

City of Morgan Hill

City of San José

County of Santa Clara

Santa Clara Valley Water District

Santa Clara Valley
Transportation Authority

Don Edwards National Wildlife Refuge – Warm Springs Unit



SANTA CLARA VALLEY
HABITAT AGENCY



City of Gilroy

City of Morgan Hill

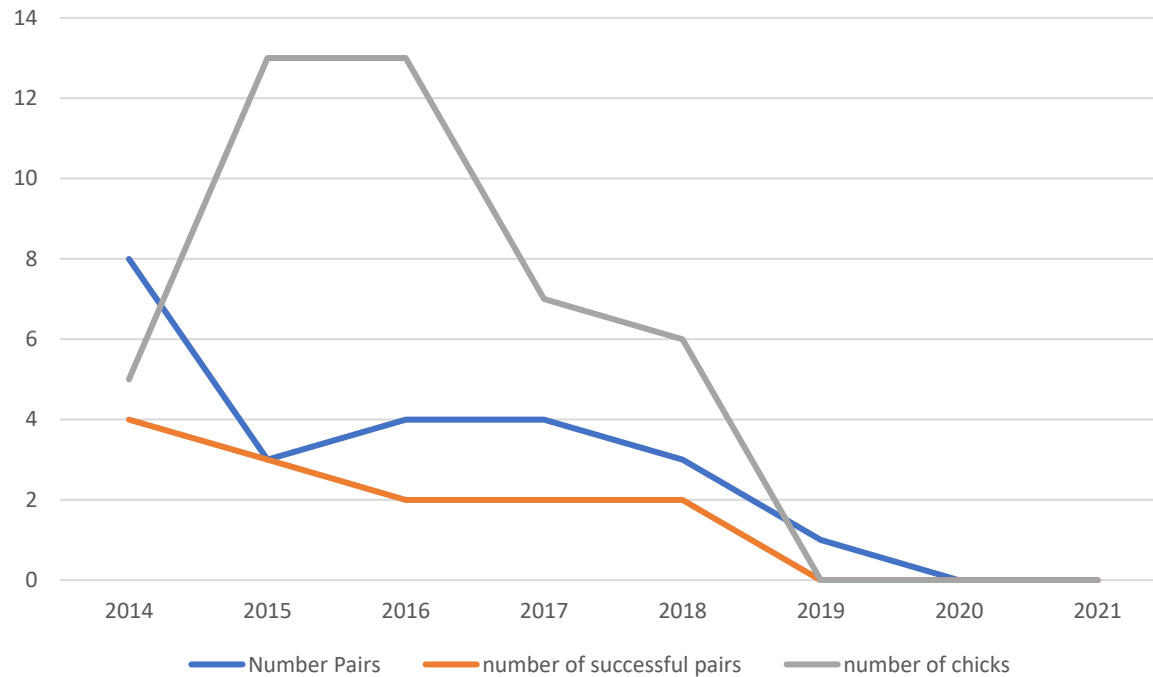
City of San José

County of Santa Clara

Santa Clara Valley Water District

Santa Clara Valley
Transportation Authority

Warm Springs Breeding Data 2014-2021



Don Edwards National Wildlife Refuge – Warm Springs Unit



SANTA CLARA VALLEY
HABITAT AGENCY



City of Gilroy

City of Morgan Hill

City of San José

County of Santa Clara

Santa Clara Valley Water District

Santa Clara Valley
Transportation Authority

	Number of Potential Breeding Pairs	Number of Successful Breeding Pairs	Total Number of Young Produced
2020	0	0	0
2021	0	0	0

Don Edwards National Wildlife Refuge – Warm Springs Unit



SANTA CLARA VALLEY
HABITAT AGENCY



City of Gilroy

City of Morgan Hill

City of San José

County of Santa Clara

Santa Clara Valley Water District

Santa Clara Valley
Transportation Authority



Spray Areas



Artificial Burrows



Don Edwards National Wildlife Refuge – Warm Springs Unit



SANTA CLARA VALLEY
HABITAT AGENCY



City of Gilroy

City of Morgan Hill

City of San José

County of Santa Clara

Santa Clara Valley Water District

Santa Clara Valley
Transportation Authority



Spraying



Grazing



Captive Breeding at Ohlone



SANTA CLARA VALLEY
HABITAT AGENCY



City of Gilroy

City of Morgan Hill

City of San José

County of Santa Clara

Santa Clara Valley Water District

Santa Clara Valley
Transportation Authority





SANTA CLARA VALLEY
HABITAT AGENCY



City of Gilroy

City of Morgan Hill

City of San José

County of Santa Clara

Santa Clara Valley Water District

Santa Clara Valley
Transportation Authority

Burrowing Owl Research Projects



Juvenile Overwintering Project

- 2019** 13 Juveniles taken into captivity, PHS
- 2020** 5 pairs released at Shoreline, 3 females released at Alviso.
21 young at Shoreline & 4 young at Alviso
- 2020** 12 Juveniles taken into captivity, PHS
- 2021** 3* pairs released at Alviso and 3 males
2 pairs for captive breeding program.
6 young produced at Shoreline, 9 young at Alviso & 4 young at Ohlone
- 2021** 17 Juveniles taken into captivity, PHS & WERC



SANTA CLARA VALLEY
HABITAT AGENCY



City of Gilroy

City of Morgan Hill

City of San José

County of Santa Clara

Santa Clara Valley Water District

Santa Clara Valley
Transportation Authority

Shoreline 2020 – Juvenile Overwintering



SANTA CLARA VALLEY
HABITAT AGENCY



City of Gilroy

City of Morgan Hill

City of San José

County of Santa Clara

Santa Clara Valley Water District

Santa Clara Valley
Transportation Authority



Alviso 2021 – Juvenile Overwintering



SANTA CLARA VALLEY
HABITAT AGENCY



City of Gilroy
City of Morgan Hill
City of San José
County of Santa Clara
Santa Clara Valley Water District
Santa Clara Valley
Transportation Authority



73 F 30.33 inHg

ALV3

03/23/2021 11:51AM



89 F 30.21 inHg

AL90

06/14/2021 01:37PM

Banding Data 2020 & 2021

Breeding Site	Number of BUOW's Banded in 2020			Number of BUOW's Banded in 2021		
	Female	Male	Young	Female	Male	Young
Shoreline	-	-	29	-	1	2
Moffett	-	1	5	-	-	4
RWF, Alviso	-	1	7	-	-	7
Warm Springs	-	1	-	-	-	-
San Jose Airport	-	-	-	-	-	7
Ohlone	-	-	-	-	-	4
Total	-	3	41	-	1	24



SANTA CLARA VALLEY
HABITAT AGENCY



City of Gilroy

City of Morgan Hill

City of San José

County of Santa Clara

Santa Clara Valley Water District

Santa Clara Valley
Transportation Authority

Supplemental Feeding Project

Location	2020	2021
Shoreline	8 pairs	5 pairs
Moffett	2 pairs	2 of 3 pairs
RWF	3 pairs	6 pairs
Warm Springs	-	-



SANTA CLARA VALLEY
HABITAT AGENCY



City of Gilroy

City of Morgan Hill

City of San José

County of Santa Clara

Santa Clara Valley Water District

Santa Clara Valley
Transportation Authority

Camera Trapping

19 Motion-detection Cameras ~ 190,000 photos per week



SANTA CLARA VALLEY
HABITAT AGENCY



City of Gilroy

City of Morgan Hill

City of San José

County of Santa Clara

Santa Clara Valley Water District

Santa Clara Valley
Transportation Authority

Wildlife Education & Research Center



SANTA CLARA VALLEY
HABITAT AGENCY



City of Gilroy

City of Morgan Hill

City of San José

County of Santa Clara

Santa Clara Valley Water District

Santa Clara Valley
Transportation Authority



WERC



SANTA CLARA VALLEY
HABITAT AGENCY



City of Gilroy

City of Morgan Hill

City of San José

County of Santa Clara

Santa Clara Valley Water District

Santa Clara Valley
Transportation Authority



📶 99 F 29.11 inHg WERC 02 🌑 08/28/2021 04:41PM



📶 82 F 29.24 inHg WERC 02 🌑 08/29/2021 11:18AM

Peninsula Humane Society



SANTA CLARA VALLEY
HABITAT AGENCY



City of Gilroy

City of Morgan Hill

City of San José

County of Santa Clara

Santa Clara Valley Water District

Santa Clara Valley
Transportation Authority



2020-07-06 19:10:35
OwlCam2





SANTA CLARA VALLEY
HABITAT AGENCY



City of Gilroy

City of Morgan Hill

City of San José

County of Santa Clara

Santa Clara Valley Water District

Santa Clara Valley
Transportation Authority

Factors Affecting Current Breeding Sites - and Planning for the Future





SANTA CLARA VALLEY
HABITAT AGENCY



City of Gilroy

City of Morgan Hill

City of San José

County of Santa Clara

Santa Clara Valley Water District

Santa Clara Valley
Transportation Authority

Factors Impacting Current Breeding Sites

- Habitat Loss
- Habitat Quality
 - Predation Pressure
 - Impacts of Climate Change

All leading to declining
breeding populations





SANTA CLARA VALLEY
HABITAT AGENCY



City of Gilroy

City of Morgan Hill

City of San José

County of Santa Clara

Santa Clara Valley Water District

Santa Clara Valley
Transportation Authority

Predation...

... is becoming a bigger factor.

More predators - more predation events

Developed sites have **double** the number of predators as agricultural or open space sites (Tomes, 2019).

Current breeding sites are critical

We are concerned but...

- Are the only ones in the County
- Are the only source of burrowing owls in the County for the future



Google Earth



SANTA CLARA VALLEY
HABITAT AGENCY



City of Gilroy

City of Morgan Hill

City of San José

County of Santa Clara

Santa Clara Valley Water District

Santa Clara Valley
Transportation Authority



SANTA CLARA VALLEY
HABITAT AGENCY



City of Gilroy

City of Morgan Hill

City of San José

County of Santa Clara

Santa Clara Valley Water District

Santa Clara Valley
Transportation Authority

Maintaining existing breeding sites by ...

...increasing food with supplemental
feeding;

...increasing juvenile survival by
overwintering juveniles;

...increasing the overall number of birds
through captive breeding;

...reintroducing overwintered and captive
birds at current breeding sites...



SANTA CLARA VALLEY
HABITAT AGENCY



City of Gilroy

City of Morgan Hill

City of San José

County of Santa Clara

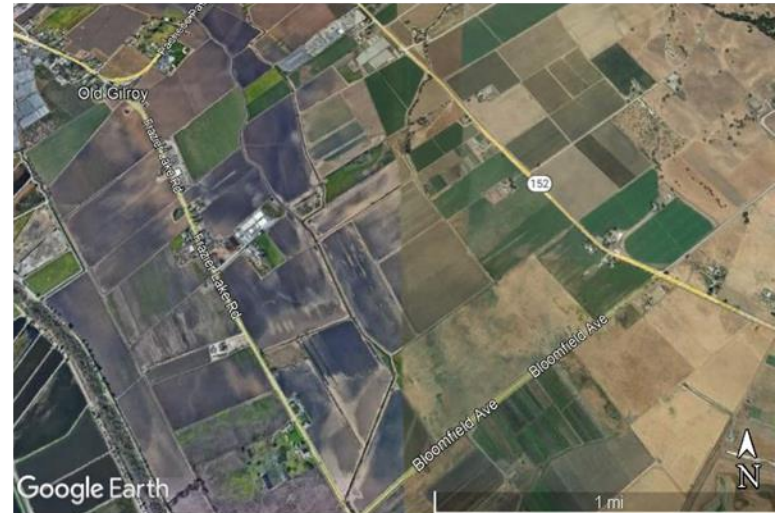
Santa Clara Valley Water District

Santa Clara Valley
Transportation Authority

...while working to establish new breeding sites at protected sites in the agricultural matrix of Santa Clara County

Positive Factors:

- Do well in agricultural settings
- Irrigated foraging
- Lower density of predators
- Design burrows to avoid flooding
- Protect sites in perpetuity



Additional Tier 3 Actions

RES Pajaro Mitigation Bank



SANTA CLARA VALLEY
HABITAT AGENCY



City of Gilroy

City of Morgan Hill

City of San José

County of Santa Clara

Santa Clara Valley Water District

Santa Clara Valley
Transportation Authority

Additional Tier 3 Actions

WERC Burrowing Owl Breeding and Overwintering Facility



SANTA CLARA VALLEY
HABITAT AGENCY



City of Gilroy

City of Morgan Hill

City of San José

County of Santa Clara

Santa Clara Valley Water District

Santa Clara Valley
Transportation Authority



Additional Tier 3 Actions

Satellite Tracking



Burrowing owls are formally endangered in Canada and of special concern in the USA. This map shows wintering distribution sites for 25 adult burrowing owls, based on geolocator data.



SANTA CLARA VALLEY
HABITAT AGENCY



City of Gilroy

City of Morgan Hill

City of San José

County of Santa Clara

Santa Clara Valley Water District

Santa Clara Valley
Transportation Authority

Additional Tier 3 Actions

Burrowing Owl Conservation Coyote Valley POST, OSA, SCV Habitat Agency & Talon



SANTA CLARA VALLEY
HABITAT AGENCY



City of Gilroy

City of Morgan Hill

City of San José

County of Santa Clara

Santa Clara Valley Water District

Santa Clara Valley
Transportation Authority



Questions



SANTA CLARA VALLEY
HABITAT AGENCY



City of Gilroy

City of Morgan Hill

City of San José

County of Santa Clara

Santa Clara Valley Water District

Santa Clara Valley
Transportation Authority

Special Thanks To All The Following:



SANTA CLARA VALLEY
HABITAT AGENCY



City of Gilroy

City of Morgan Hill

City of San José

County of Santa Clara

Santa Clara Valley Water District

Santa Clara Valley
Transportation Authority



Peninsula Humane Society & SPCA



OHLONE
HUMANE SOCIETY
EST. 1983



CITY OF MOUNTAIN VIEW



Santa Clara Valley
Audubon Society



WERC
Wildlife Education &
Rehabilitation Center



Sunnyvale

