

8th Dr. Mary Bowerman Science & Research Colloquium

Questions & Answers

Dining with Friends: Social Food Discovery in California Ground Squirrels

By Erin Person (e_person@berkeley.edu)

Q: Do squirrels tend to eat at certain times of the day? Does that interfere with interpretation of peak visits in mid-afternoon?

A: We do think there are peak foraging times for the squirrels but we tried to repeat all locations multiple times across different times of day so we can make sure that isn't biasing our data.

Q: What's the lifespan of an individual ground squirrel?

A: Average is about 3 years, but they can live much longer! Our oldest wild squirrel was 7 years old.

Overwintering and Breeding Monarch Butterflies in the East Bay

By Stuart Weiss

Q: Does anyone count monarch breeding success, or are all these population numbers based on overwintering sites? Do monarchs successfully breed in the East Bay?

The numbers are based on the overwintering counts, in particular the Xerces Thanksgiving Counts

<https://xerces.org/blog/tag/western-monarch-thanksgiving-count>

Breeding observations in the western population are spotty at best - Monarch Milkweed Mapper (<https://www.monarchmilkweedmapper.org/>) has a compilation, and iNaturalist also will have larval observations. Getting abundance data on the breeding grounds is quite difficult from a sampling viewpoint, since it is so dynamic and milkweeds are so widely distributed. Best viewed as "presence only" mapping, absence is much harder to be sure of and only intensive surveys that turn up nothing are likely (but not 100%) sure to be absences. There are a few "sentinel sites" where researchers do their best. Cheryl Schultz and Elizabeth Crone have a winter-breeding study in the East Bay (and in some other places) - if there is interest, you could contact them directly elizabeth.crone@tufts.edu and schultzc@wsu.edu.

Q: Have there been studies on monarch recruitment success in developed vs. undeveloped areas? Do they experience more severe predation in urban areas from introduced wasps?

A: The wasp predation issue is not well studied as far as where it is more intense. Most overwintering sites are in populated areas, but there are some that are more remote.

Q: Where can one obtain milkweed seed and plugs?

A: Native milkweeds are available from many native plant nurseries. But inquire about being pesticide free!!! Check www.xerces.org for leads on particular nurseries and seed sources. Big area of activity to increase availability of plant materials, especially some of the uncommon milkweeds like californica

Q: Do you agree that milkweed should not be planted within 5 miles of overwintering sites?

A: The five-mile rule is less applicable to the East Bay. Planting milkweeds in the wildlands in the East Bay Hills is totally appropriate. We have to accept that people will be planting milkweeds in their urban gardens close to the overwintering grove, discouraging tropical milkweed is important, cutting it back in winter, but I think it is an uphill struggle.

Q: Is there advice available somewhere for people in various parts of the Bay Area who want to plant native milkweeds to help them understand how they can best benefit the monarchs without inadvertently cause problems?

Comment from a participant: I have seen a few Monarchs on Albany Hill this fall, and several flying around the neighborhood

Response from Stuart: Monarchs near Albany Hill tend to be winter breeding, there are few migrants clustering on the Hill proper

Comment from a participant: There are also very occasional reports of *Asclepias eriocarpa* in the Diablo Range.

Response from Stuart: Yes - there is *A. eriocarpa* in the Mt. Hamilton Range, we obtained some seeds and are going to try and grow it for seed production

Resources:

Milkweed Mapping:

- Monarch Milkweed Mapper: <https://www.monarchmilkweedmapper.org/>
- iNaturalist: <https://www.inaturalist.org/>
- Calflora: <https://www.calflora.org/>

Other Links:

- Xerces Society: <https://www.xerces.org/monarchs>

Trees and Shrub Dieback in the Mount Diablo Area

By Sean Burke (sburke@savemountdiablo.org)

Q: Is dieback killing the manzanitas or are they just turning brown and waiting for better times?

A: The dieback can be fatal but not always. The manzanitas can redirect energy to their roots and maintain themselves for a time much like they do during a fire, and sacrifice the other portions of the plant. But they do sometimes die as a result of this. In this situation only time will tell. It could be fatal to the swaths we saw in the images or it may only be to a portion of them. Let's hope for some stability and hope that they can bounce back and maintain.

Comment from Heath Bartosh (Nomad Ecology Senior Botanist working with Sean Burke on the die back): In doing this work I'm finding the affected area is almost nearly contiguous with dieback from Curry Canyon Range to west of Wall Point.

Fish, Frogs, Pools, and Puddles: Restoration Potential of Pine Creek , Initial Results from a Drought Year

By UC Berkeley Riverlab Student Research Team

Q: What impact does mineral content in the pools (if any) have on frogs and fish? Particularly on their development?

A: Not entirely sure if there is any impact, but we still want to look at it to make sure that it's not harming them in any way.

Q: How does one go about learning about groundwater use by local landowners and managers? Just asking them and hope they cooperate, or are is all groundwater development required to be reported to the state somehow?

A: That's a great question, we are in the process of figuring out if monitoring groundwater use by private landowners is possible since there is currently no data being collected.

Diablo Range Revealed: Connelly Ranch

By Joan Hamilton and Scott Hein

Q: Did Indigenous people inhabit or use the land now part of the Connelly Ranch?

A: Yes Northern Valley Yokuts would have been the most recent tribes and triblets in the area most likely. The Diablo Range was highly populated with tribes for thousands off years.

Resources:

- Diablo Range Revealed: <https://savemountdiablo.org/learn/diablo-range-revealed/>

2021 BioBlitz Summary

By Denise Castro (dcastro@savemountdiablo.org)

Q: What is the status of the Del Puerto Canyon reservoir proposal? This project was proposed quite a while ago. Has it been approved?

A: The Del Puerto Canyon Reservoir was approved by the water district (the responsible agency) in that area. SMD and other groups are supporting a legal challenge to the project and supporting grassroots efforts of residents in the area.

Resources for the Del Puerto Canyon Reservoir Project:

- Save Mount Diablo: <https://savemountdiablo.org/blog/2021/09/22/del-puerto-canyon-haven-for-wildlife-threatened-by-proposed-reservoir-in-the-diablo-range/>
- Del Puerto Canyon Reservoir Project/Proponent site: <https://delpuertocanyonreservoir.com/>
- News article about lawsuit that Save Mount Diablo is supporting: <https://www.modbee.com/news/business/agriculture/article247328934.html>

American Kestrel Nest Box Camera Study

By Brian Richardson and Sean Burke

Q: The red vs. the blue lines on the chart. Which sex corresponded with which falcon parent?

A: Red was female, blue male.

Q: Do you clean out the boxes yearly?

A: Yes, we clean and add new bedding to the boxes annually.

Q: Would a new (January) nest box typically be occupied same year?

A: They can be, but it is hit or miss. Someone typically will occupy it, whether its a screech owl, or a starling, or a flicker or a kestrel.

Q: Are commercial wood shavings (for horse bedding) a good bedding?

A: Yes pine is fine.

Two New Publications Highlight the Geology of Mount Diablo

By Greg Bartow

Q: Were there significant updates to the geologic map from Graymer's 1994 USGS map and database of Contra Costa County? If so, will those updates also be released (for free) by the USGS?

A:

Q: Where can we buy the book?

A: Geological Society of America: <https://rock.geosociety.org/Store/detail.aspx?id=MWR217>

Q: When will the well be drilled?

A: Hopefully within the next six months.

Q: Will the new mapping be published by the USGS as a digital dataset?

A: I think it is available by the USGS as a digital dataset. Russ Graymer is the lead geologist for this program: rgraymer@usgs.gov

Q: There is a slip on Northgate Rd. Can that be relocated to more stable ground?

A: With respect to the road stability, there is a big project going on to repave/repair the roads and they are doing geotechnical studies doing borings along the road, so I'm not sure how much road realignment there's being done with that, but there's a lot of work being done to fix the slip outs, either to strengthen the road, but I don't think they are going to do significant realignment. You can follow up with the State Parks staff.

Q: Could chert stones found 1 to 2 miles south of Blackhawk been washed down from Mount Diablo?

Resources:

- New Book and Map Highlight the Geology of Mount Diablo:
https://savemountdiablo.org/blog/2021/11/02/new-book-and-map-highlight-the-geology-of-mount-diablo/?utm_source=rss&utm_medium=rss&utm_campaign=new-book-and-map-highlight-the-geology-of-mount-diablo
- Buy the Book: <https://rock.geosociety.org/Store/detail.aspx?id=MWR217>
- Geologic Guide to Mount Diablo: <https://mount-diablo-interpretive-association.square.site/product/geologic-guide-to-mount-diablo/59?cs=true&cst=custom>