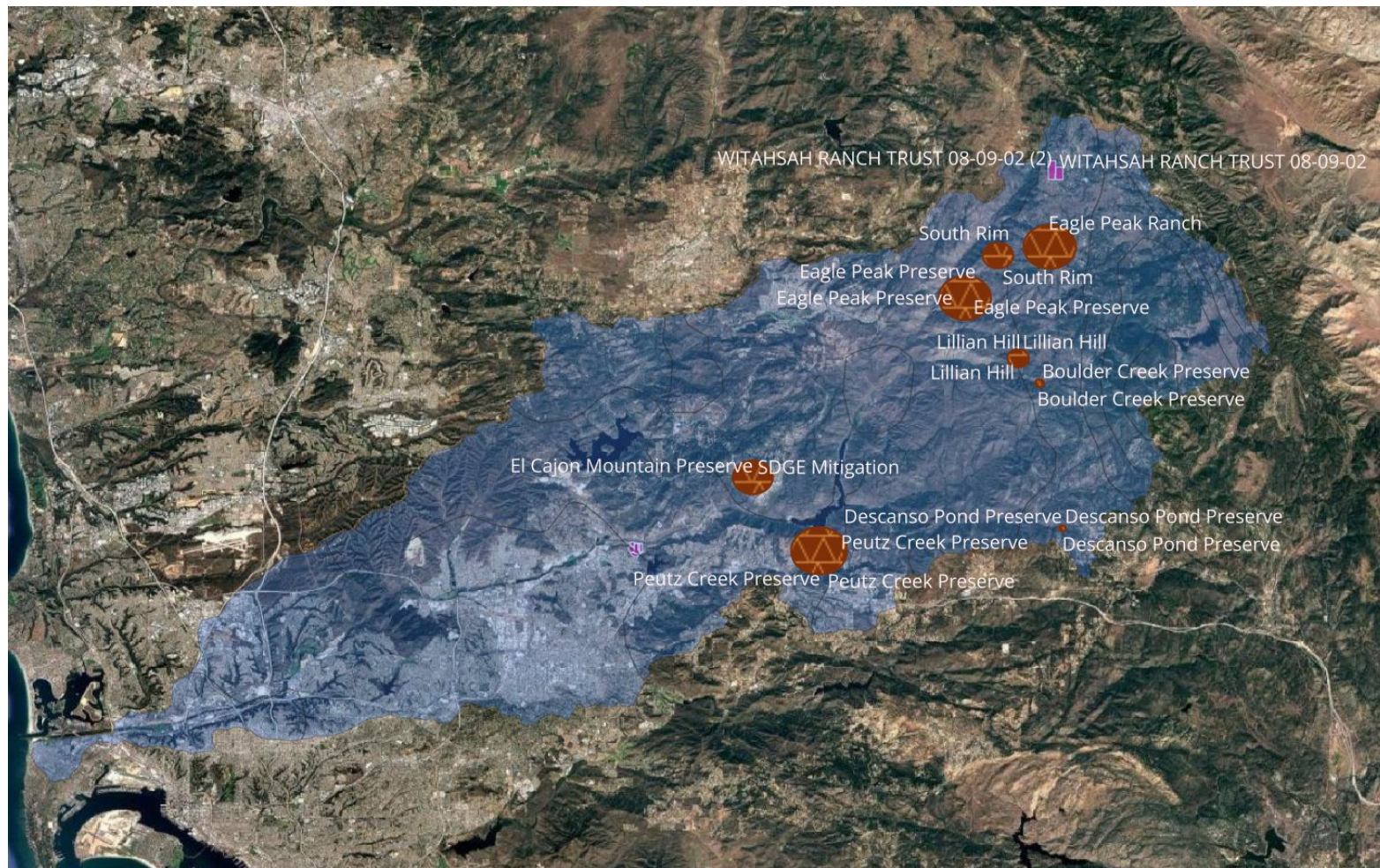
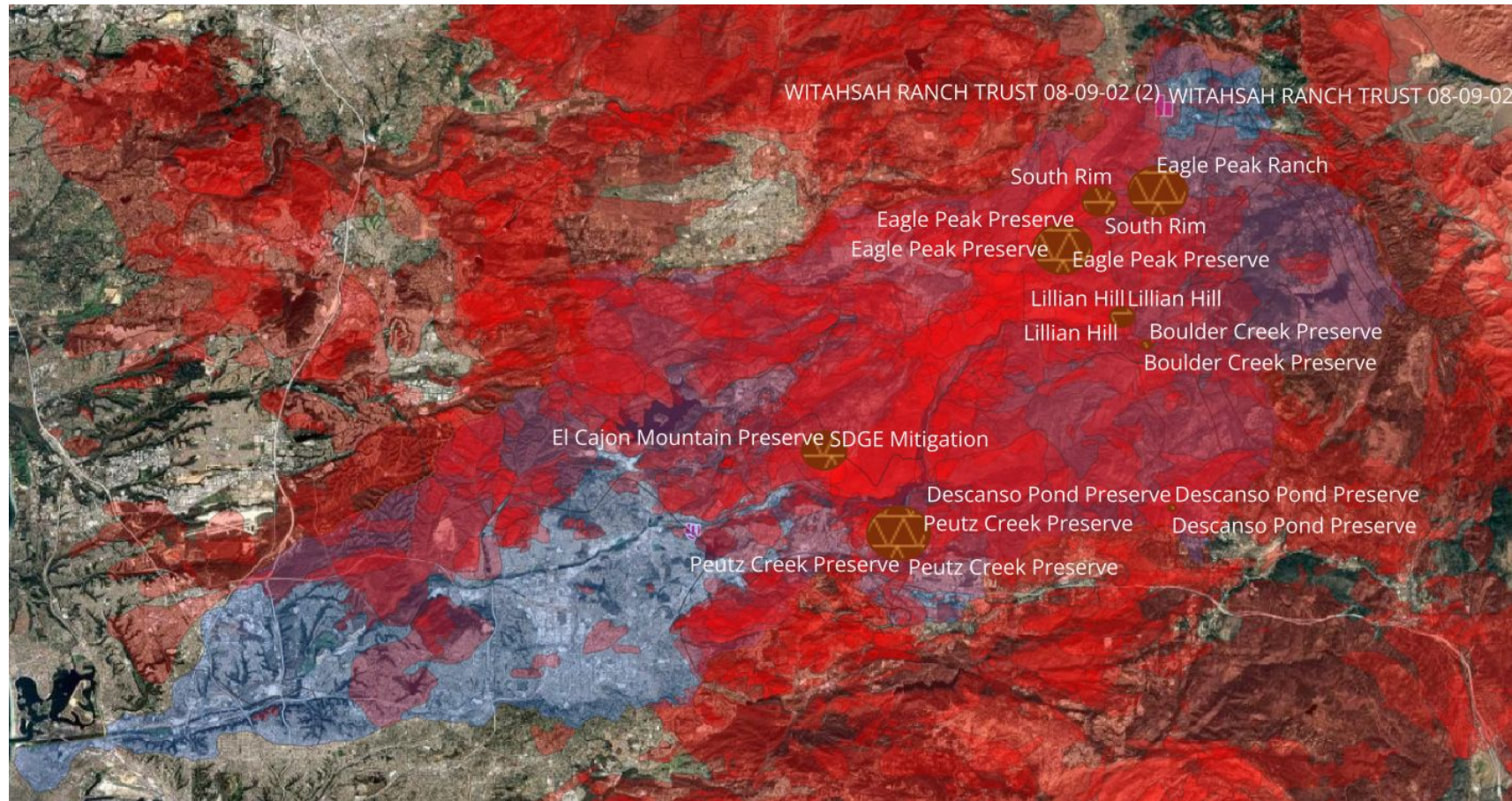




WILDFIRE *Protocol*

San Diego River Park Foundation
Eduardo Rodriguez Gonzalez





Monte Fire

Date Started:

06/17/2025 2:59 PM

Date Contained:

06/24/2025 8:00 AM
(Active for 7 days)

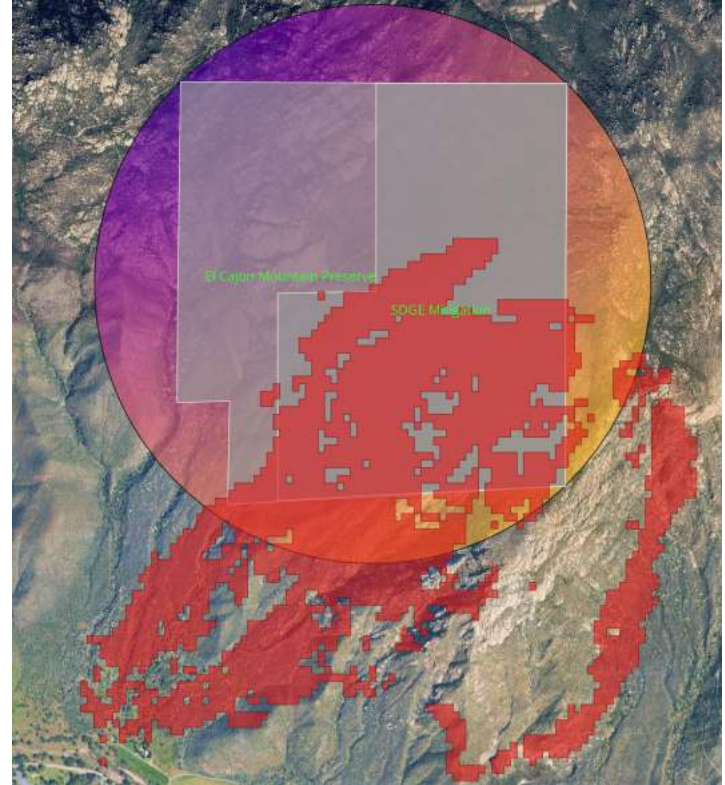
1,495 Acres Burned

Cause: Arson

Location:

El Monte Road, Near Lakeside
[32.8921885,-116.8435559]

Burned about 40% of El Cajon Mountain Preserve



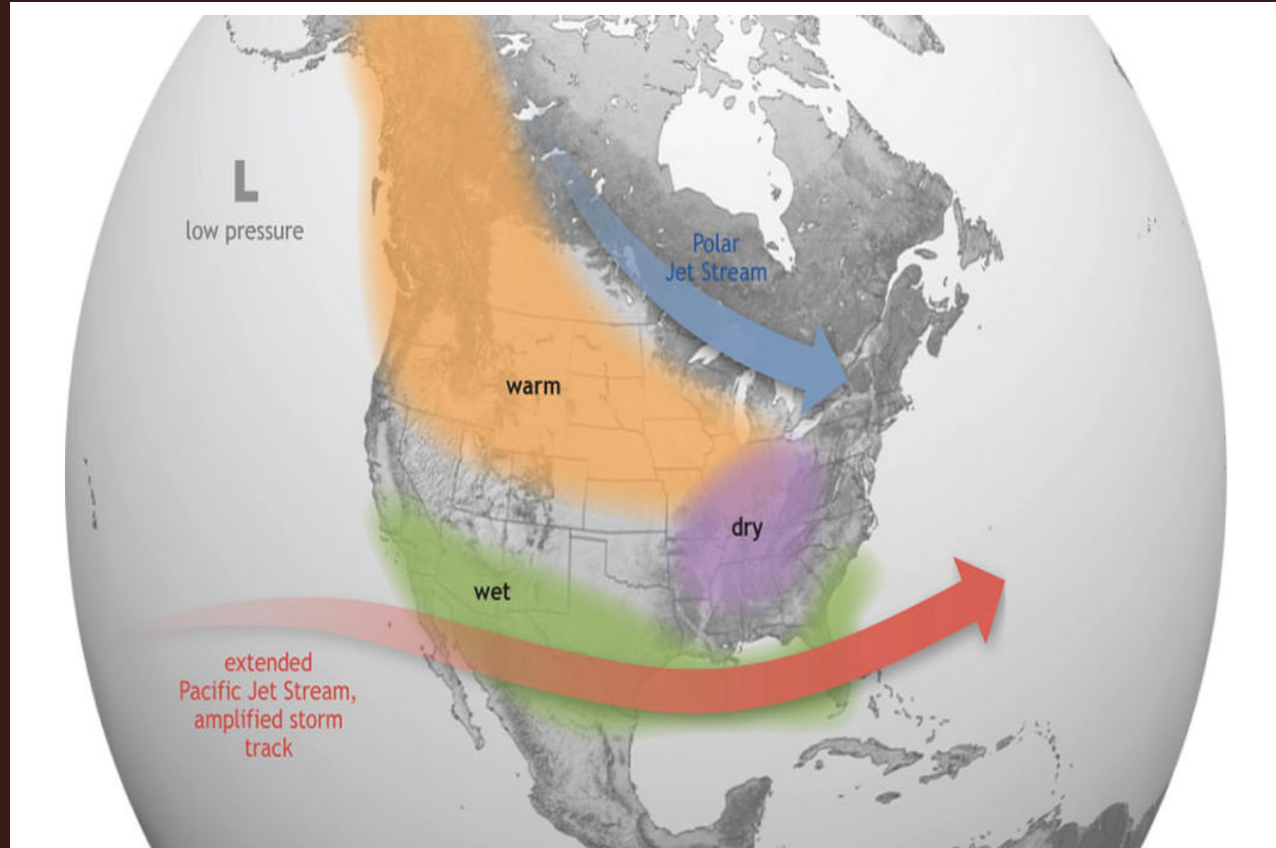
How can we create a strong basis for the prevention of future wildfire damage?

Hypothesis 1: Super *El Niño*

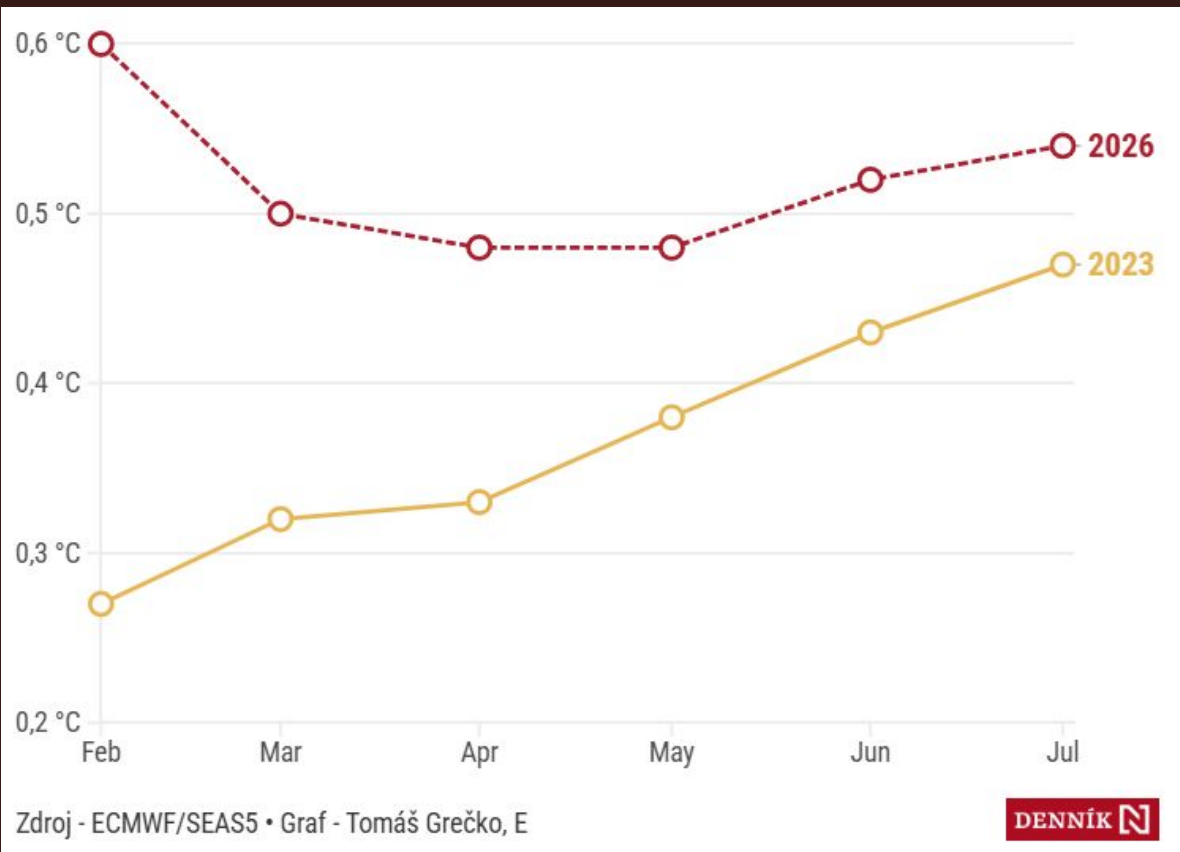
If upcoming flooding and wet conditions are expected from an El Niño event, then those conditions should be used as a tool to prevent further wildfire opportunities in future years.

The El Niño - Southern Oscillation (ENSO) - Cycle

- Weakened Trade Winds
- Warm water is pushed towards the west coast of the Americas
- Pacific jet stream moves south of its neutral position
- Northern U.S. and Canada become dryer and warmer
- Southern areas and Gulf coast flood and lead to wetter conditions



The El Niño - Southern Oscillation (ENSO) - Cycle



Ordinary El Niño warms Pacific Waters by tenths of a degree.

A “Super El Niño” could potentially warm the waters by more than 2 degrees above the long term average.

Enough to manipulate the circulation in the atmosphere and its distribution of rainfall around the globe.

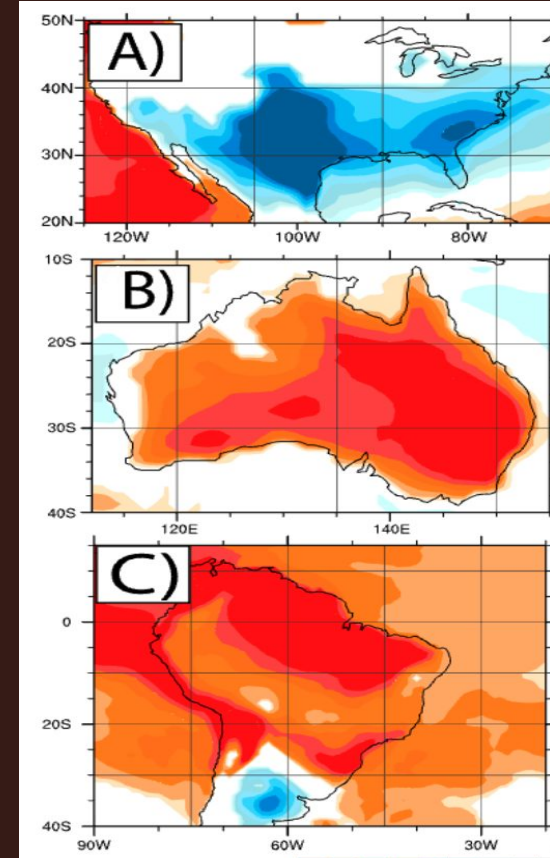
- 25% “Super El Niño”
- 80% Strong El Niño
- 98% Moderate El Niño

ECMWF Center

The El Niño - Southern Oscillation (ENSO) - Cycle

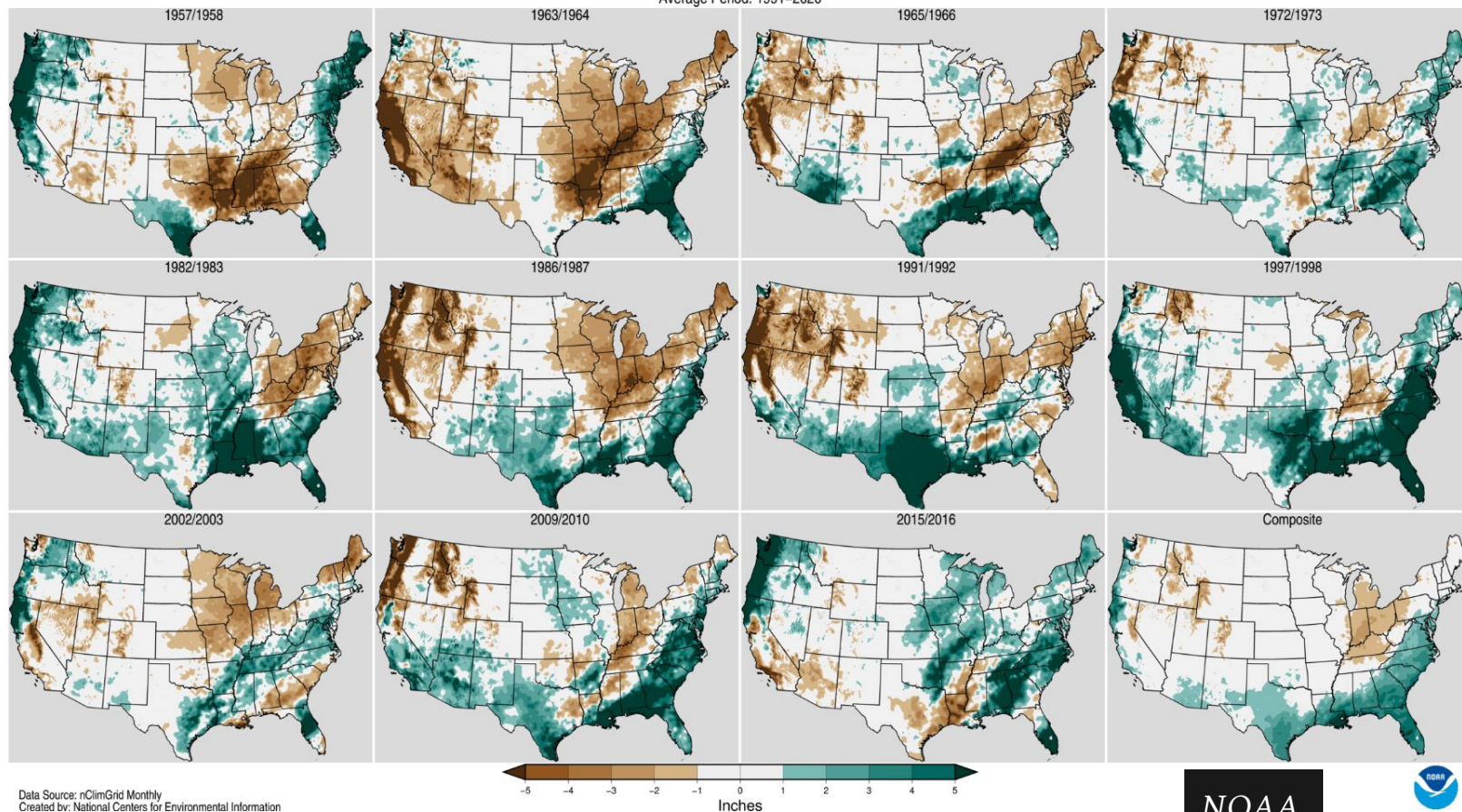
“... driving increased interannual variability in regional temperature extremes and wildfire frequency” (Fasullo et. al.).

- El Niño has long been known to be associated with a planetary-scale redistribution of heat, precipitation, and winds
- A fire probability chart predicted negative values around southern U.S and northern Mexico, as well as high values around Australia and South America.



20th Century Fp teleconnections

Strong El Niño Precipitation Departure from Average
December–February
Average Period: 1991–2020

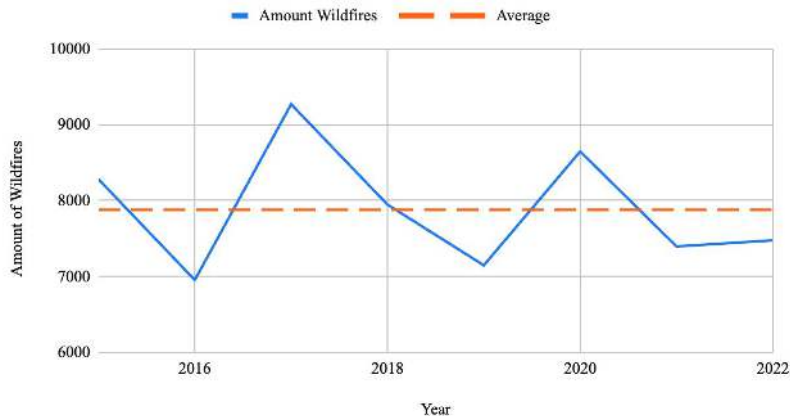


Data Source: nClimGrid Monthly
Created by: National Centers for Environmental Information

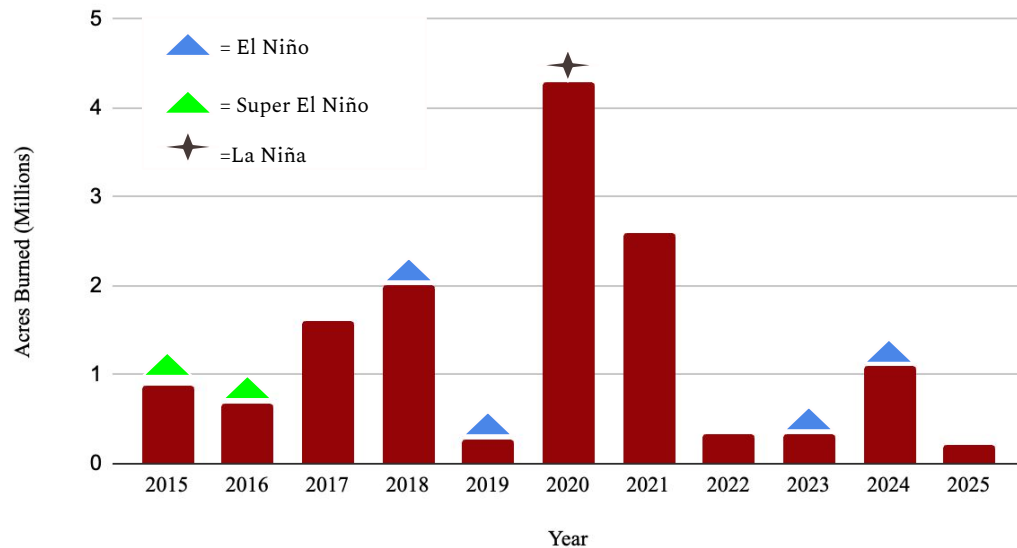


The El Niño - Southern Oscillation (ENSO) - Cycle

Amount of Wildfires in California vs. Year



Acres Burned by Wildfire in California (2015 - 2025)



The El Niño - Southern Oscillation (ENSO) - Cycle

- 1) Add reports of dry shrubs and highly flammable areas to weekly volunteer groups and interns to report patterns and areas under high risk
- 2) Native planting with great soil conditions
- 3) Create a Fire safety Team every 3rd Friday cutting, mowing, clearing dry bush or mulching for water soil retention
- 4) Prescribed burning while areas are still moist



How can we create a strong basis for the prevention of future wildfire damage?

Hypothesis 1: Super *El Niño*

If upcoming flooding and wet conditions are expected from an El Niño event, then those conditioned should be used as a tool to prevent further wildfire opportunities in future years.

Hypothesis 2: Invasives strike again

If invasive species are a leading cause for wildfire severity, then efforts to remove them from SDRPF properties should increase.

Invasives Strike Again



The most common native vegetation types in Southern California - chaparral, coastal sage scrub and valley grasslands - are well adapted to fires, typically returning to their natural state in only a few years after a fire assuming no new fire is introduced.

The presence of non-native plants can highly influence wildfires because they are not adapted to the drought conditions and thus dry out easier, leading to a highly flammable area.

Additionally, these weeds typically establish quicker than natives, harming the total recovery and outcompeting, allowing them to expand even further.

(Bell et. al.)

Wonderful Workers!



Wonderful Workers!



Wonderful Natives!



Invasives Strike Again

- 1) Increase marketing for impact of invasives on environment, implementing the fact that they are a primary source for severity of wildfires
- 2) Act quickly for prevention immediately after ideal events for weed growth, such as heavy rain and fire
- 3) Encourage those who walk amongst invasive weeds to clean down their shoes and clothes before leaving to lessen spread
- 4) Present a vast amount of natives to outcompete the invasives, especially in barren land after wildfire



How can we create a strong basis for the prevention of future wildfire damage?

Hypothesis 1: Super *El Niño*

If upcoming flooding and wet conditions are expected from an El Niño event, then those conditioned should be used as a tool to prevent further wildfire opportunities in future years.

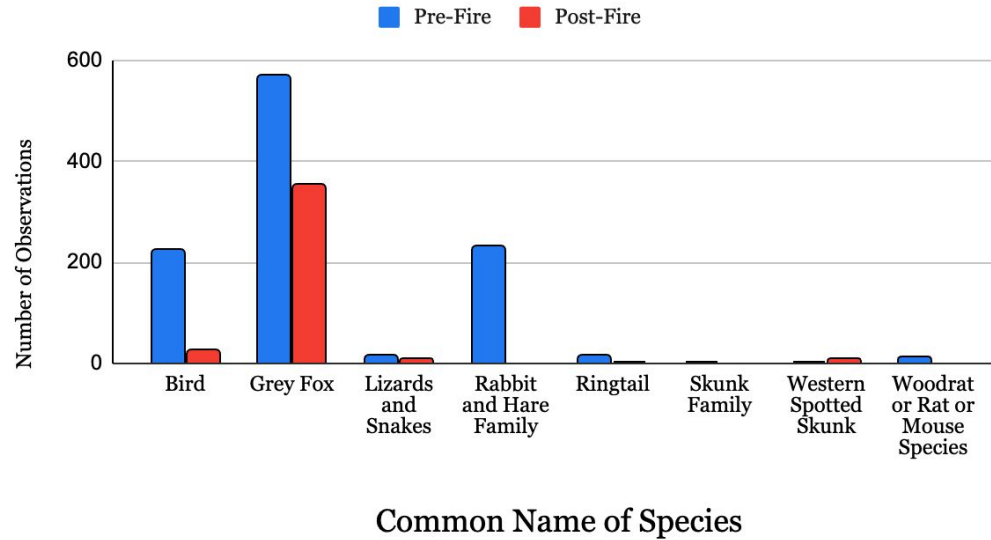
Hypothesis 2: Invasives Strike Again

If invasive species are a leading cause for wildfire severity, then efforts to remove them from SDRPF properties should increase.

Hypothesis 3: Serenade the Species

If populations decrease significantly after wildfire, then special measures should be taken to help support species in their return to the area.

Abundance of Species Pre and Post Monte Fire



Species	Pre-Fire	Post-Fire	Percent Decrease
Birds	226	27	88.05%
Grey Fox	569	352	38.14%
Rabbit and Hare Family	231	0	100.00%
Skunks	27	10	62.96%
Grand Total	1107	402	63.69%

Serenade the Species

“Animals will not return until plants have returned, and it is typically small prey animals who return to an area first”.

These prey animals, such as birds, insects and mice, are attracted to areas with more habitat and fewer predators.

Once prey species increase, hungry predators will follow.

(Conte)



Serenade the Species - Watchorn et. al.



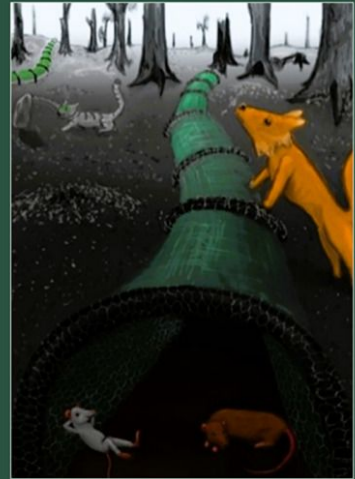
Invasive predators, like feral cats & red foxes, hunt & kill many native species around the world. But in areas with dense & unburnt vegetation, it can be harder for these predators to find native prey.



Fire is a natural, important disturbance that consumes vegetation & other resources. Many animals are well-adapted to survive fire, so long as it's not too severe.



However, small native animals may be more vulnerable to cats & foxes after fire. It's easier for these predators to detect & catch them. This risk is most concerning for threatened species with small populations.

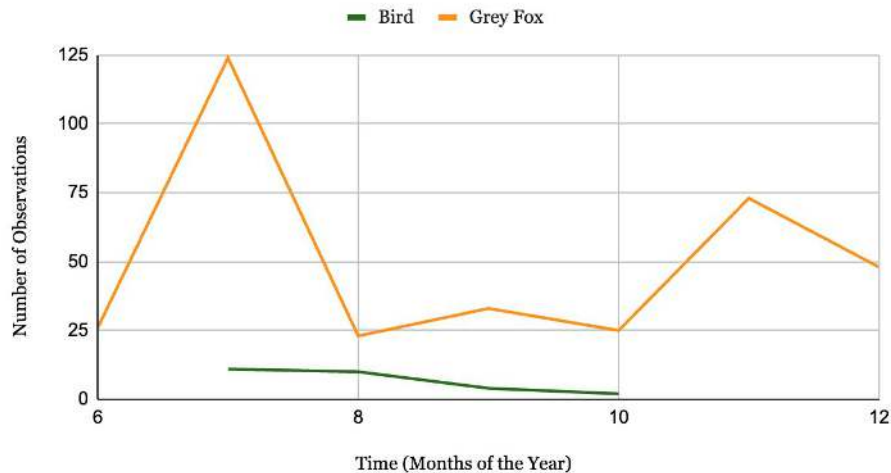


We tested whether artificial refuges built in burnt areas increased the activity of small native animals. Many species used them more than controls, suggesting they perceive these artificial refuges as a safe place from predators.

Foxes have been found to increase their presence quickly after a wildfire because of the vulnerability of their prey.

(Doherty et. al.)

Bird and Grey Fox Abundance After Monte Wildfire



06/24/2025

05:19 PM

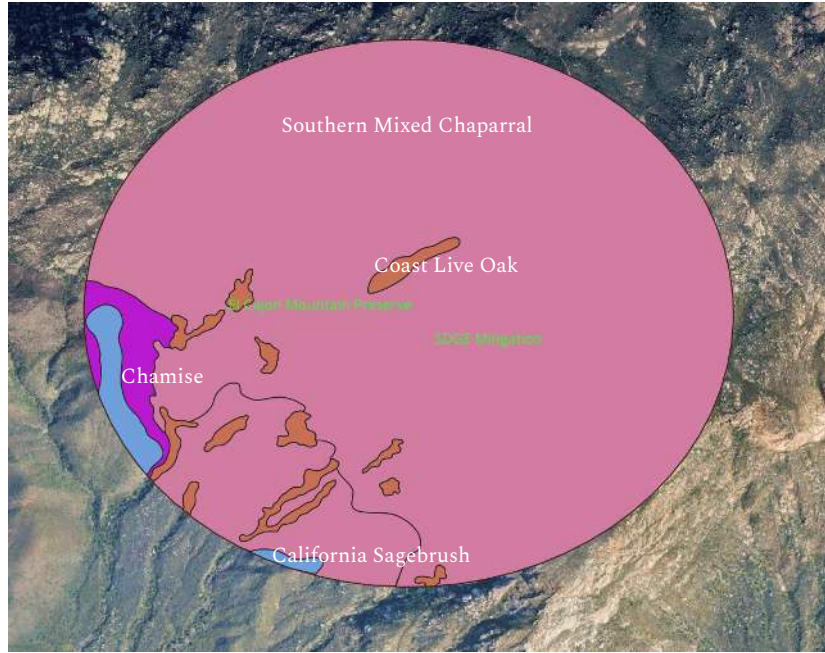
72°F

22°C

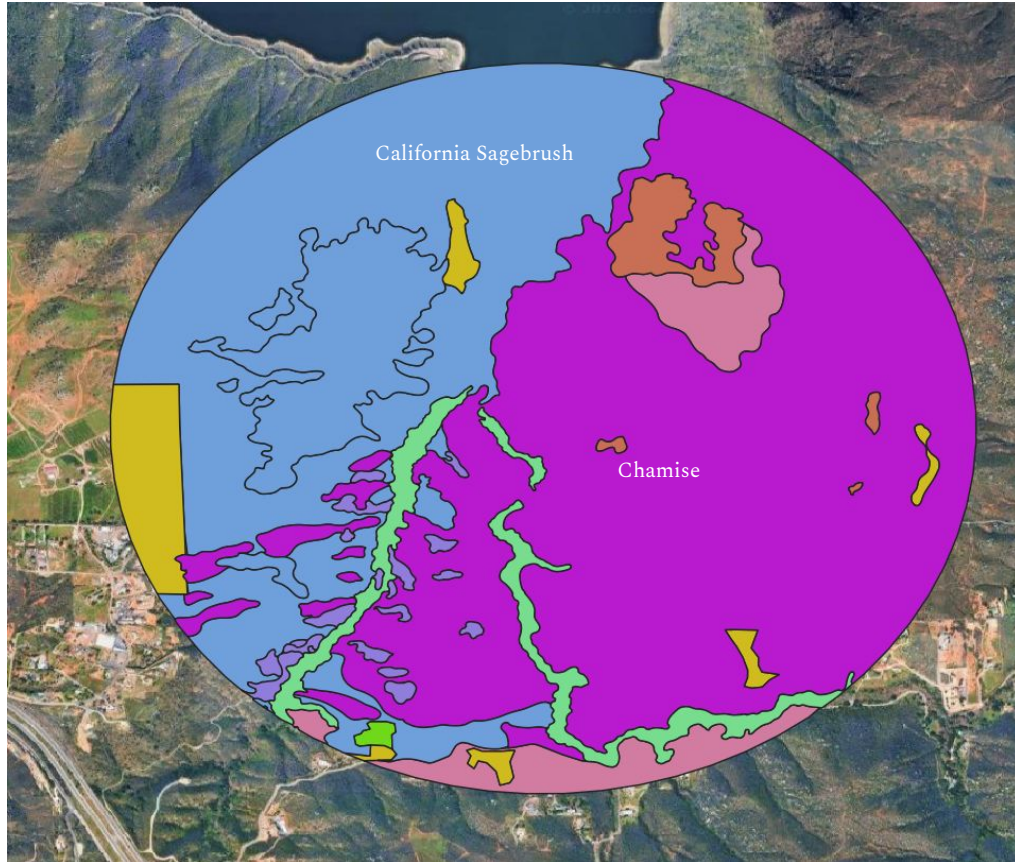


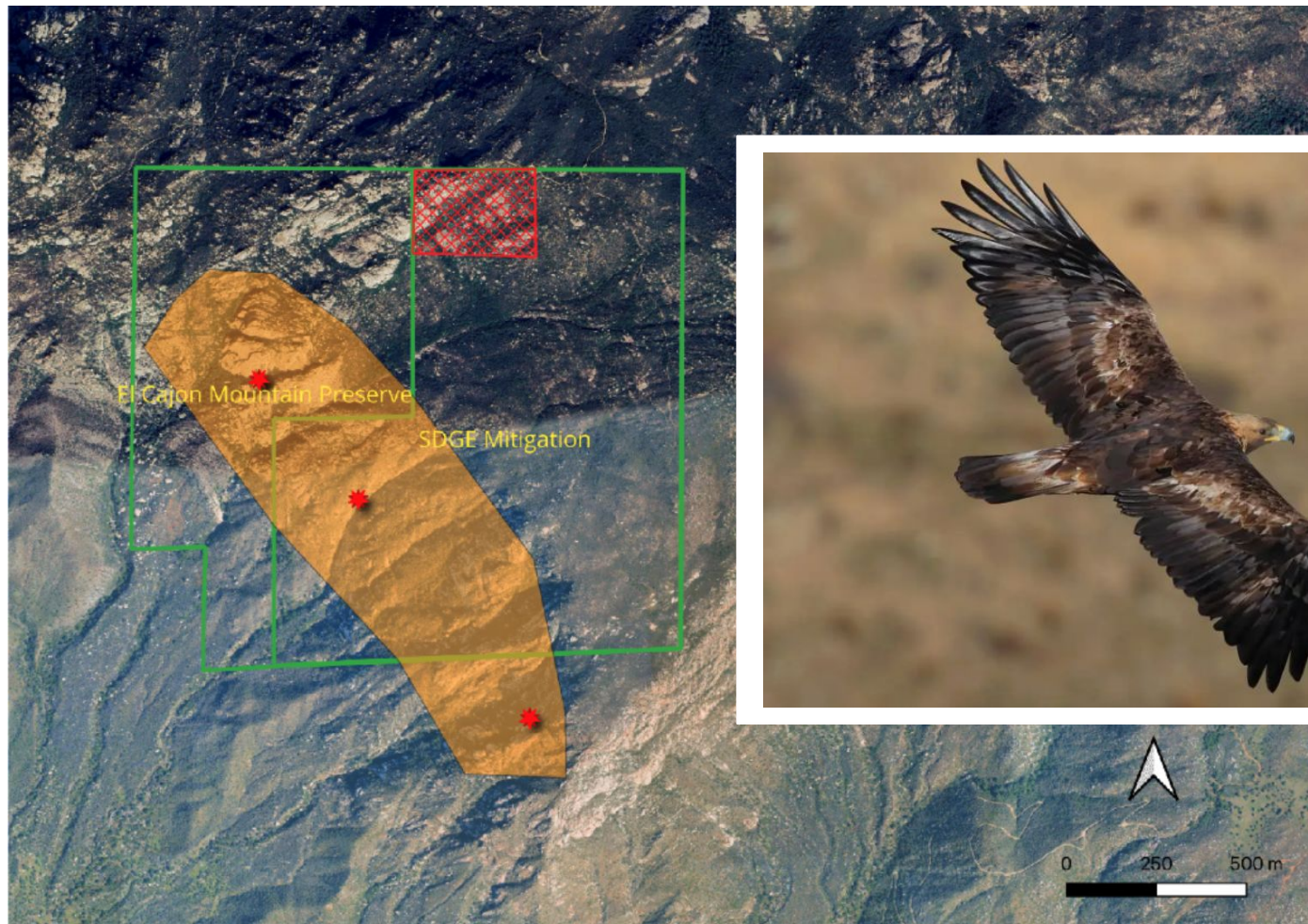
SPYPOINT FLEX-M

El Cajon Mountain Vegetation



Peutz Creek Preserve Vegetation





Zhang et. al.

Serenade the Species

1. Installing artificial habitat structures for places of refuge
2. Mimic important surrounding wildlife (Chaparral for El Cajon Mountain)
3. Limit human interaction (hiking, noise and light pollution, and dogs, signage)



A photograph of a coyote standing on a rocky ridge, looking out over a vast mountain range at sunset. The sky is a mix of orange, yellow, and blue. The mountains in the distance are layered and hazy. The coyote is in the foreground, its back to the camera, looking towards the horizon. The text "Thank You!" is overlaid in the center of the image.

Thank You!

07/04/2025

07:49 PM

71°F

21°C



SPYPOINT FLEX-M