

# CAL FIRE AVIATION PROGRAM



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***CAL FIRE***

Battalion Chief

Air Operations – Grass Valley Air Attack Base

# WHAT IS “AIR ATTACK”?

We provide air support for the ground forces



# WHAT IS “AIR ATTACK”?

The utilization of aerial equipment to assist in wildland firefighting

- Air Tankers
- “Air Attack” platforms (ie. “Spotter planes”)
- Helicopters
- Intelligence gathering/Reconnaissance/Mapping aircraft
- Unmanned Aerial Systems (UAS) – Drones



WHAT DOES CAL FIRE AVIATION  
LOOK LIKE?



# CAL FIRE AVIATION

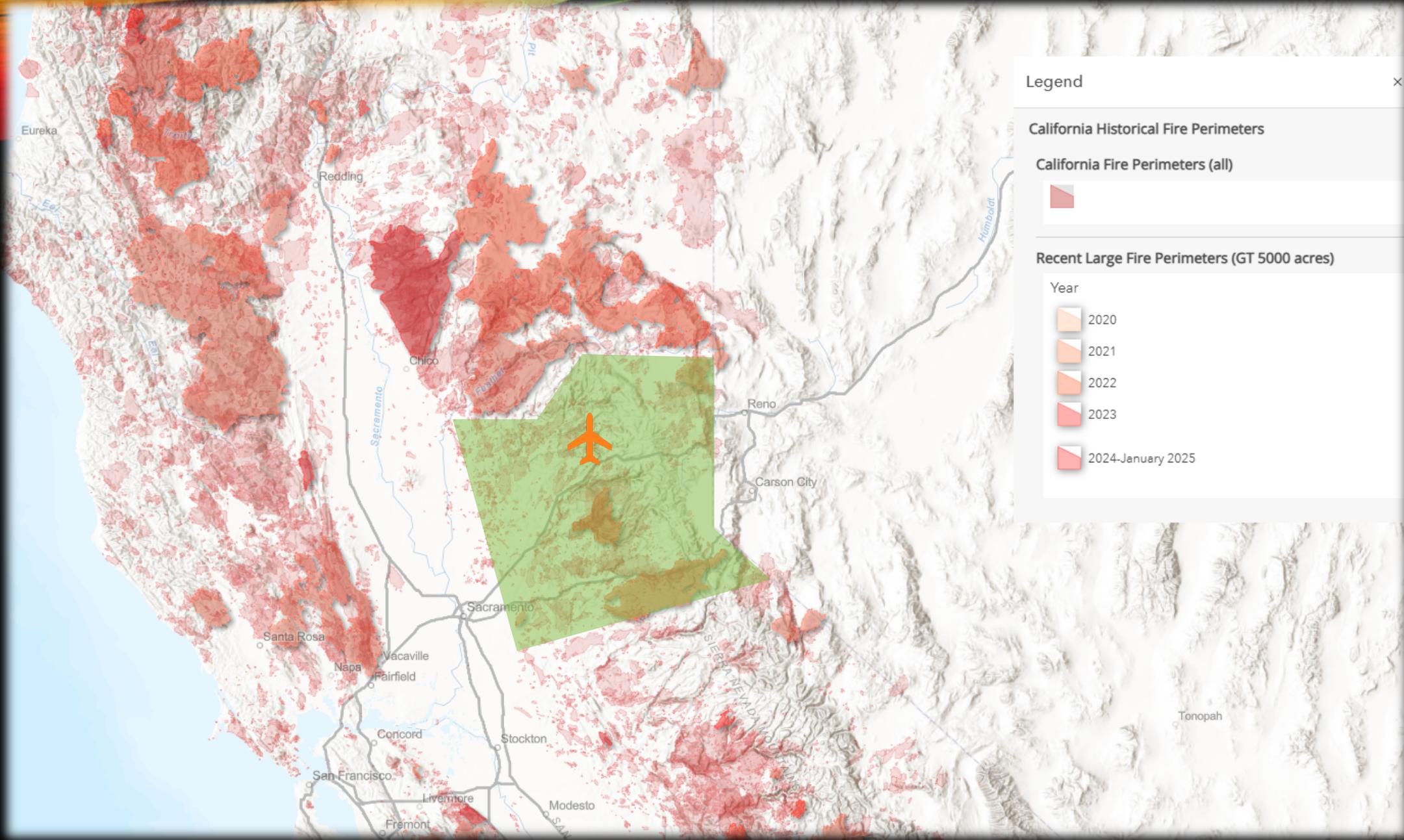
- Over 70 aircraft
- 23 Air Tankers
- 16 OV-10 Air Attack Platforms (“Spotter planes”)
- 14 S-70i CAL FIRE Hawks
  
- 13 Tanker bases
- 10 Helicopter bases



# CAL FIRE AVIATION

- 3-6 aircraft dispatched to every wildland fire
- Positioned to reach every fire within 20 minutes or less
- Goal- 95% of our fires kept to 10 acres or less





Legend



California Historical Fire Perimeters

California Fire Perimeters (all)



Recent Large Fire Perimeters (GT 5000 acres)

Year



2020



2021



2022



2023



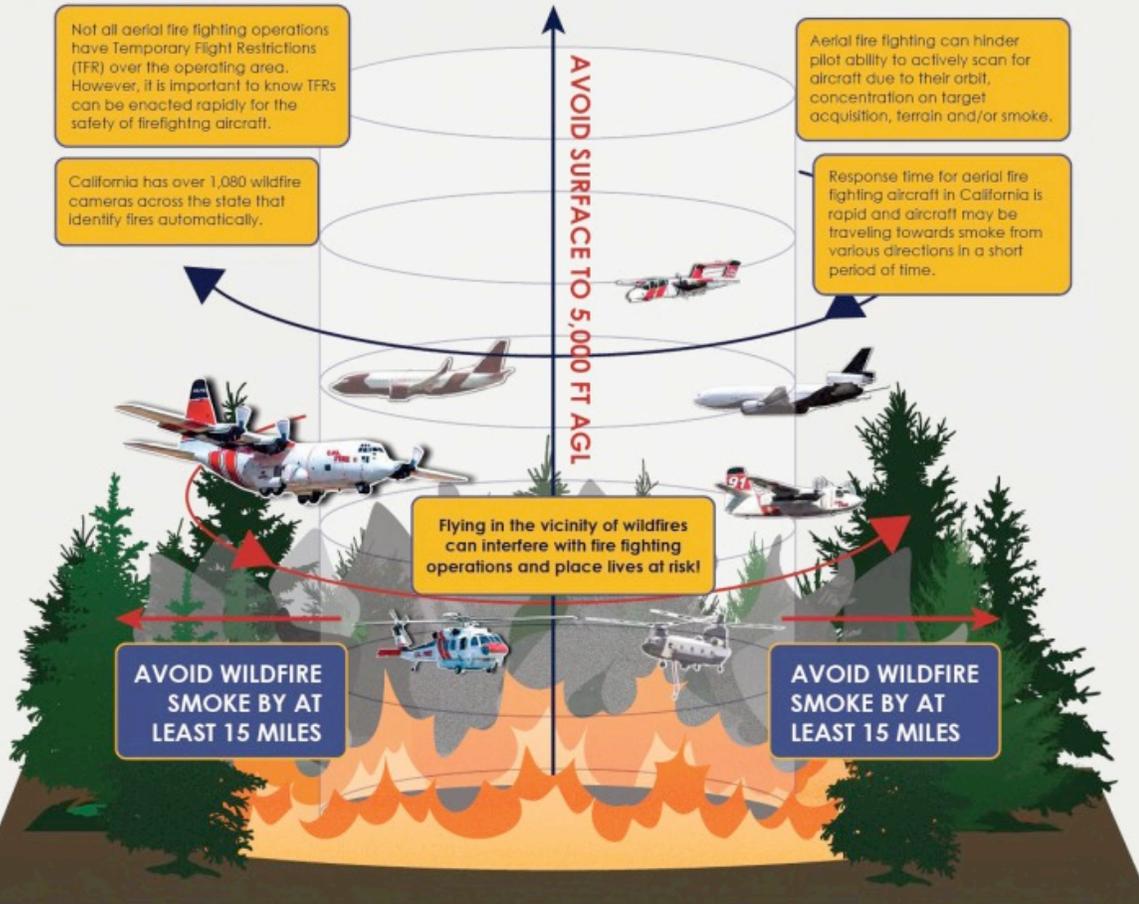
2024-January 2025



# MID-AIR COLLISION HAZARD

## IF YOU SEE WILDFIRE SMOKE, FLY AWAY!

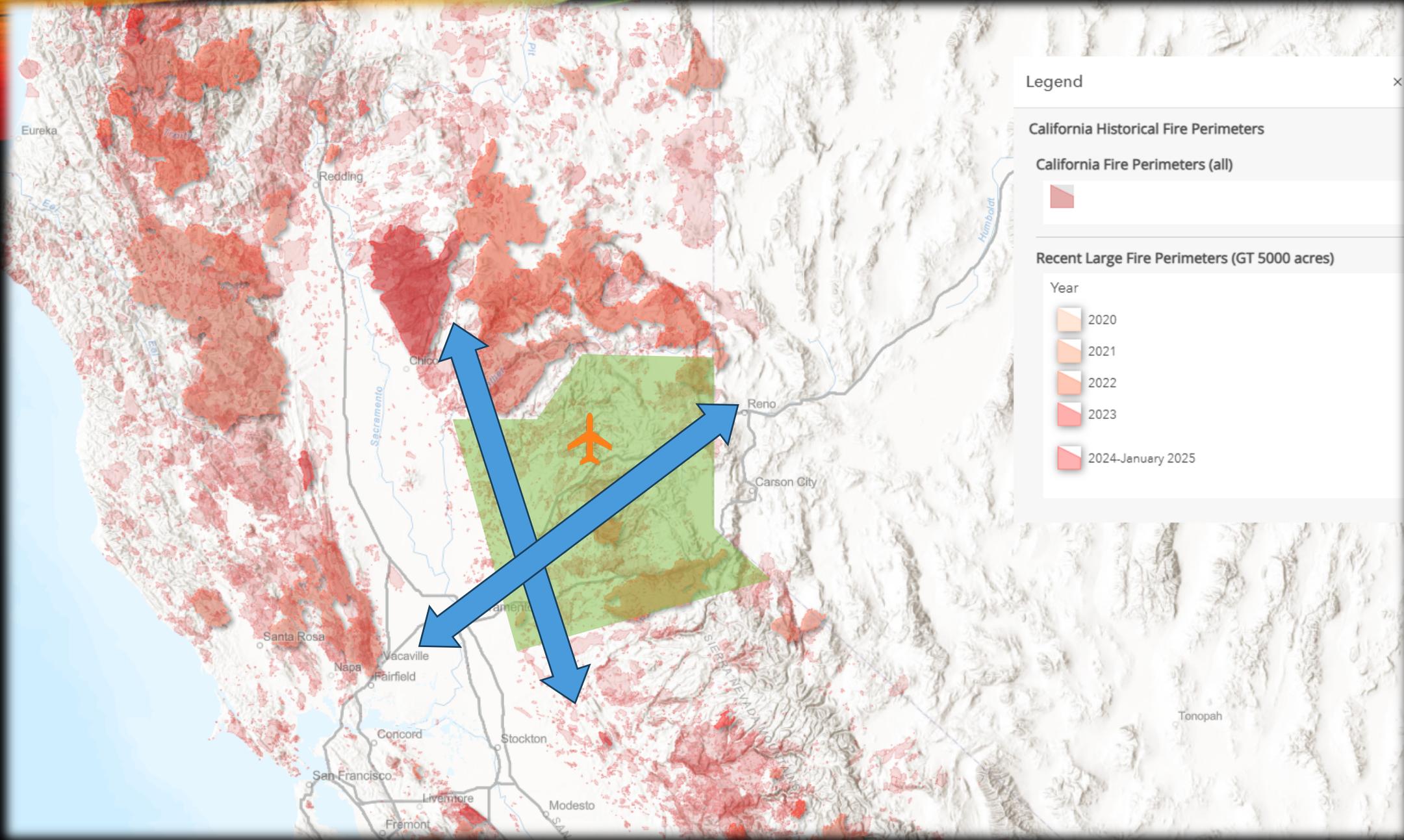
Multiple helicopters and airplanes flying in different patterns at varying altitudes should be expected above a wildfire. Aircraft will be circling the fire area, including the column of smoke, actively engaged in firefighting operations.



**DO NOT REPORT FIRES THAT HAVE FIRE FIGHTING AIRCRAFT ON-SCENE. TO REPORT A WILDFIRE THAT YOU THINK HAS NOT BEEN REPORTED, CONTACT THE SERVICING TOWER, APPROACH, OR FLIGHT SERVICE STATION.**



PRODUCED IN COOPERATION WITH THE USDA FOREST SERVICE, WHICH IS AN EQUAL OPPORTUNITY PROVIDER, EMPLOYER, AND LENDER.



Legend

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2021



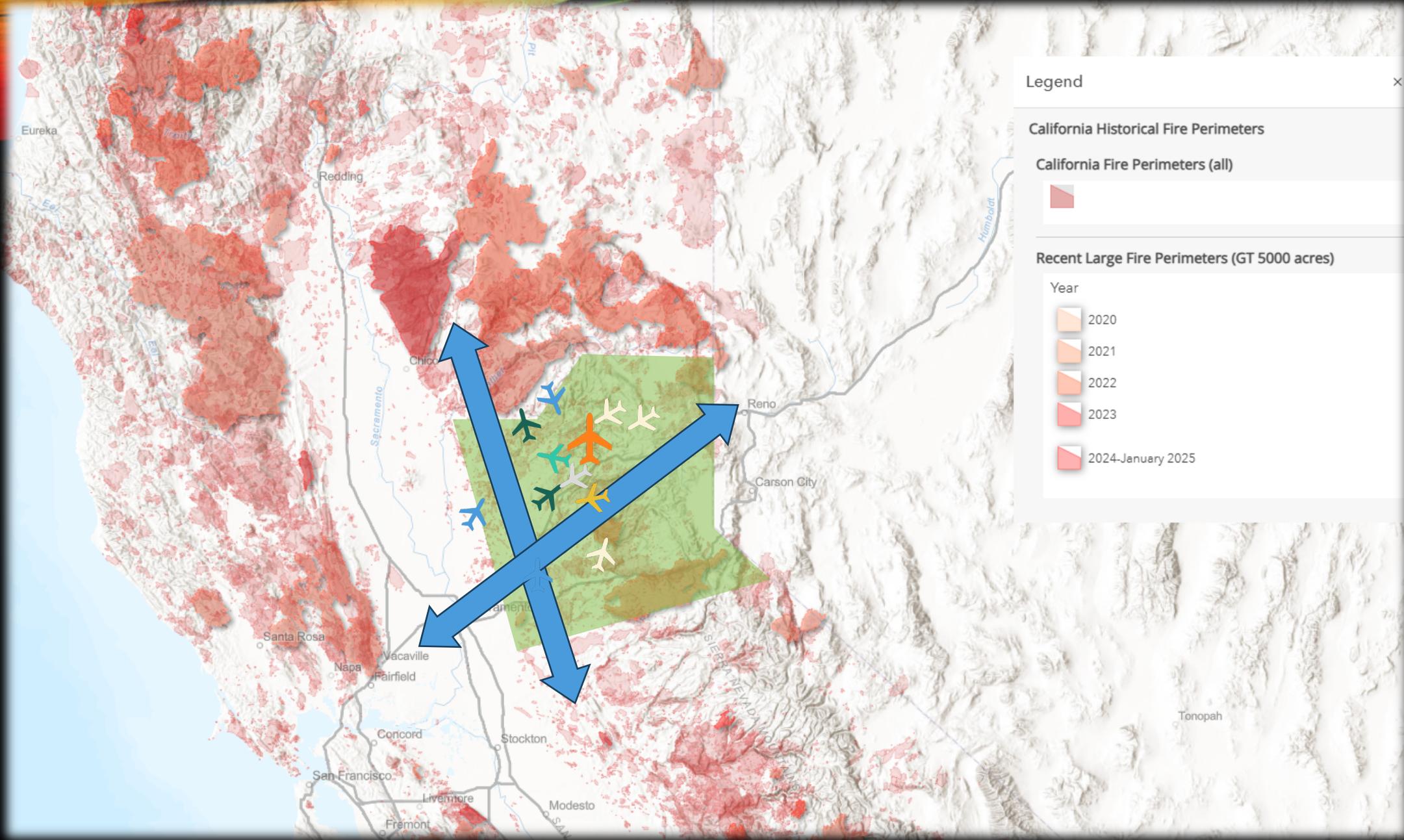
2022



2023



2024-January 2025



Legend

California Historical Fire Perimeters

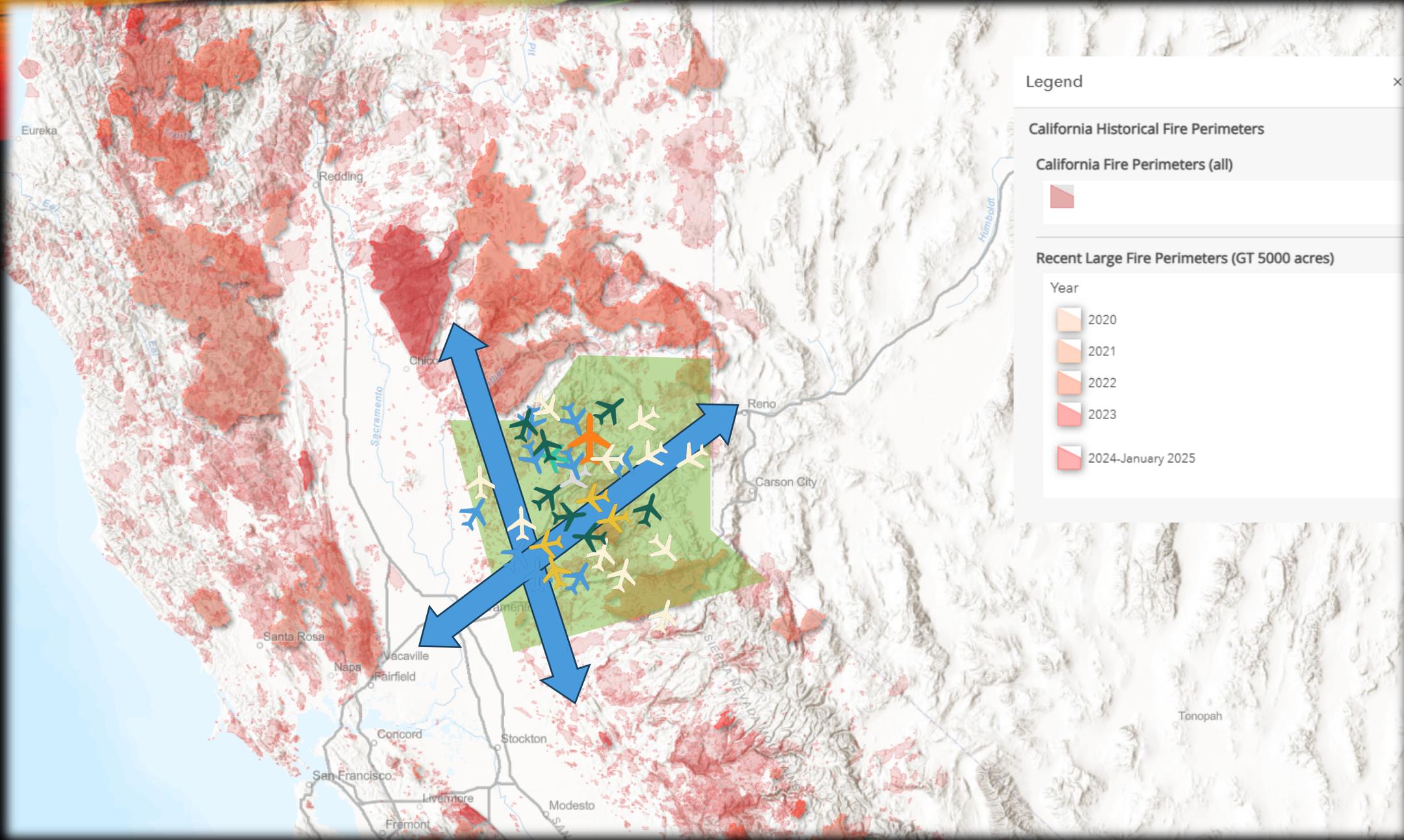
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Legend ×

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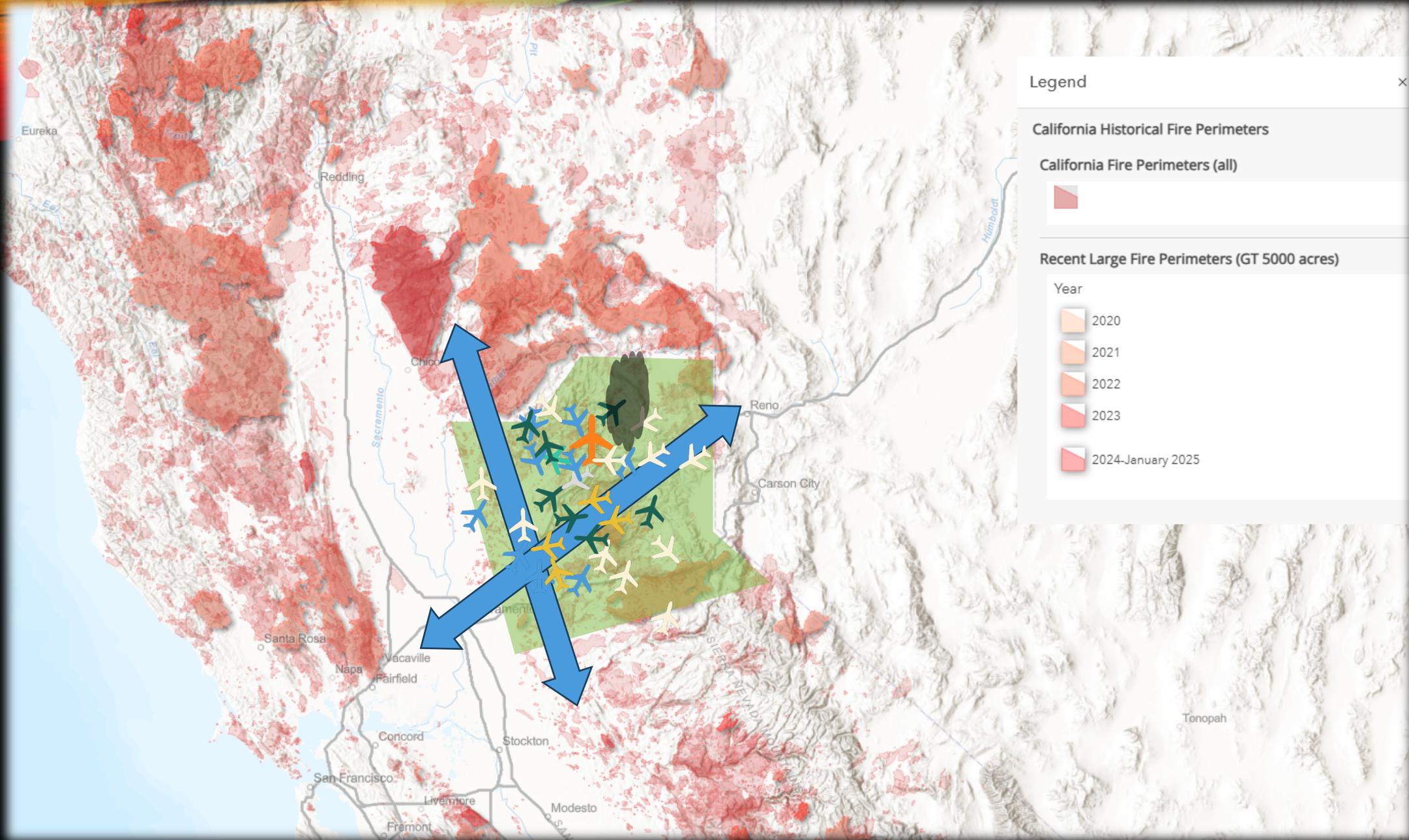
2022



2023

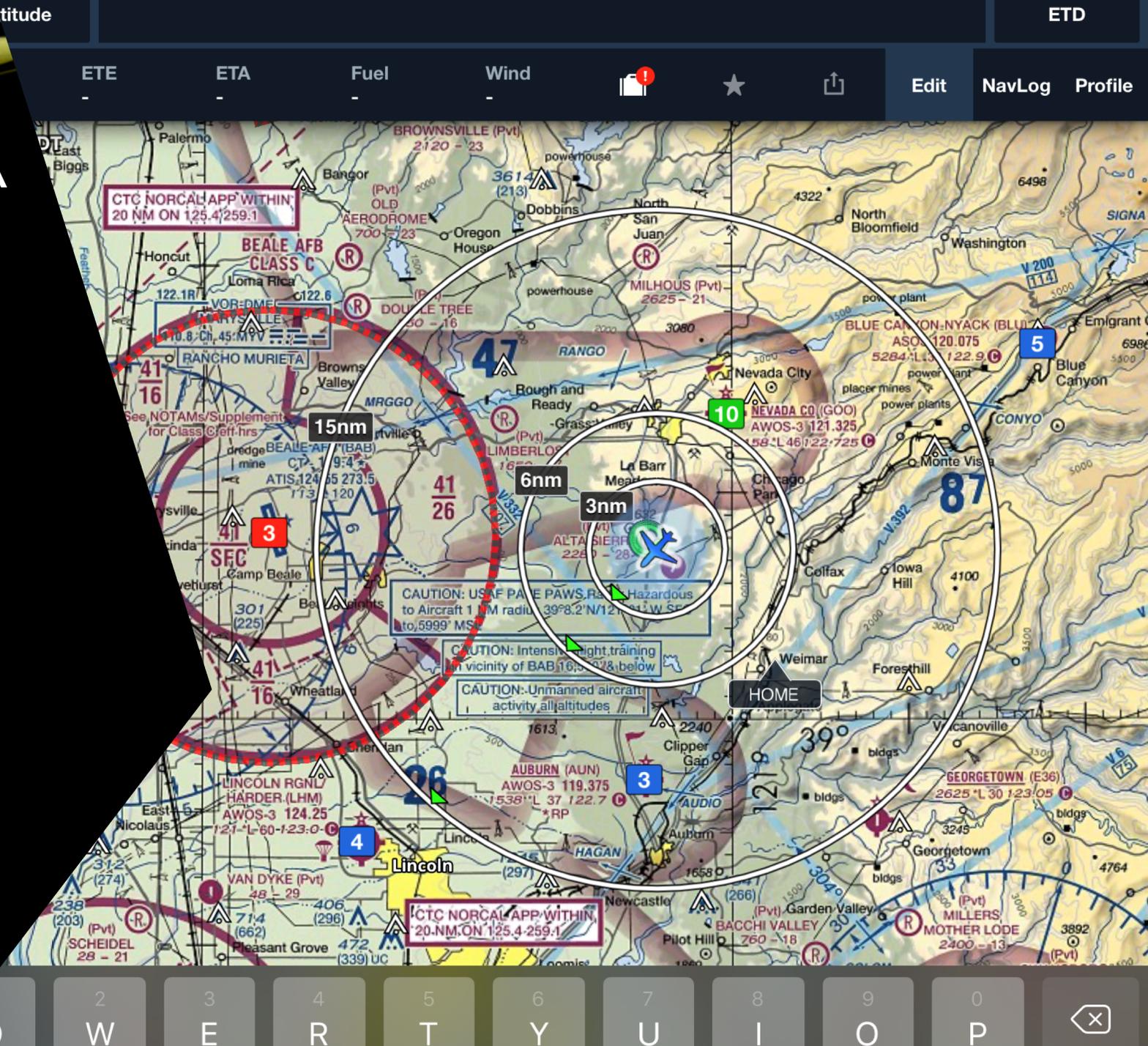


2024-January 2025

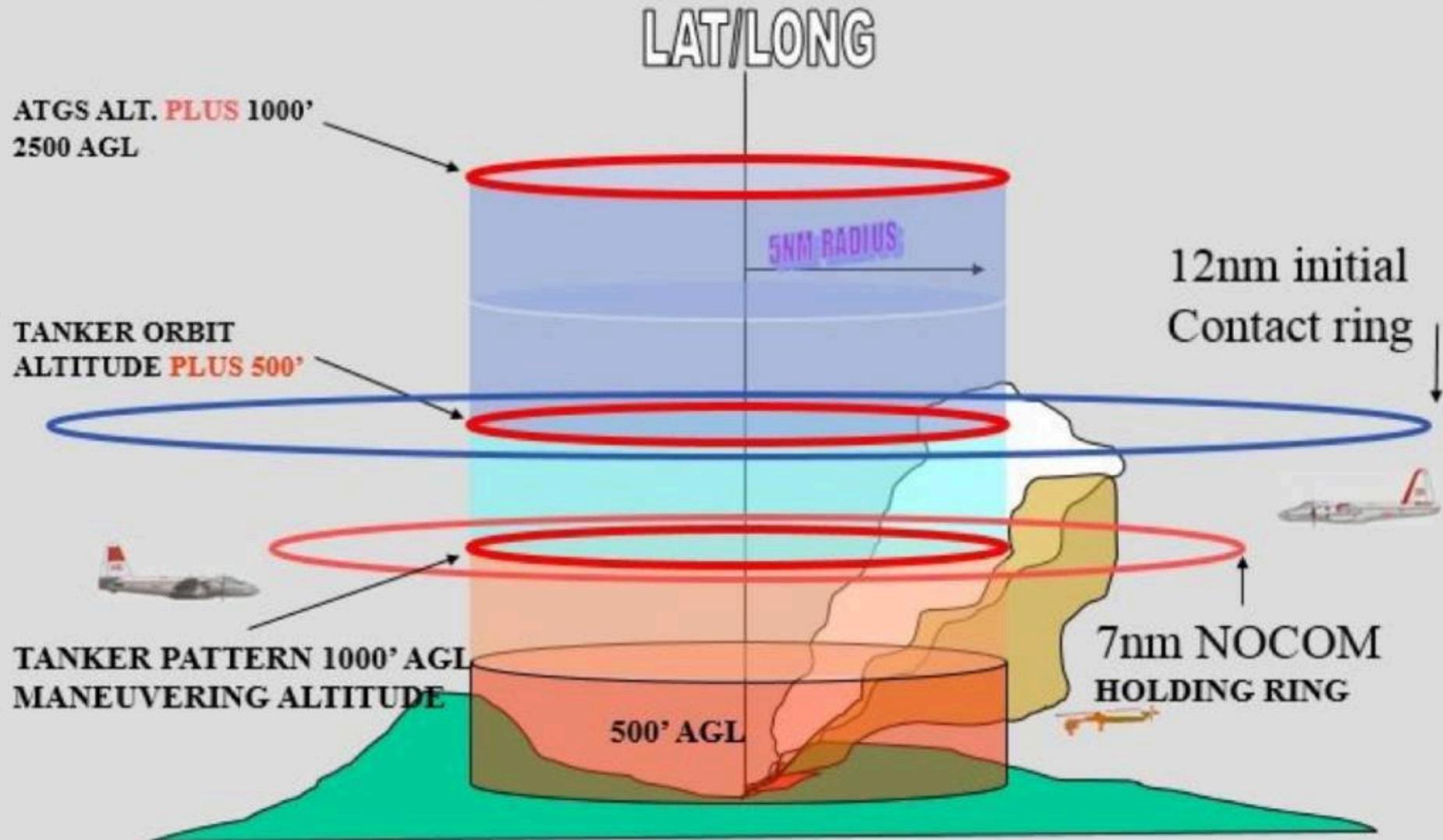


# FIRE TRAFFIC AREA (FTA) VS. A TFR

- A **TFR** is a legal, PUBLISHED (NOTAM) structure
- An **FTA** is a communication protocol used by FF aircraft to operate safely in a tight area
- When does an **FTA** get established for a wildfire?
- When does a **TFR** get established for a wildfire?
- Who establishes the **TFR**?
- Who can legally enter a **TFR**?



# FTA DIMENSIONS





# NWCG Fire Traffic Area (FTA)

NWCG Standards for Aerial Supervision, PMS 505,

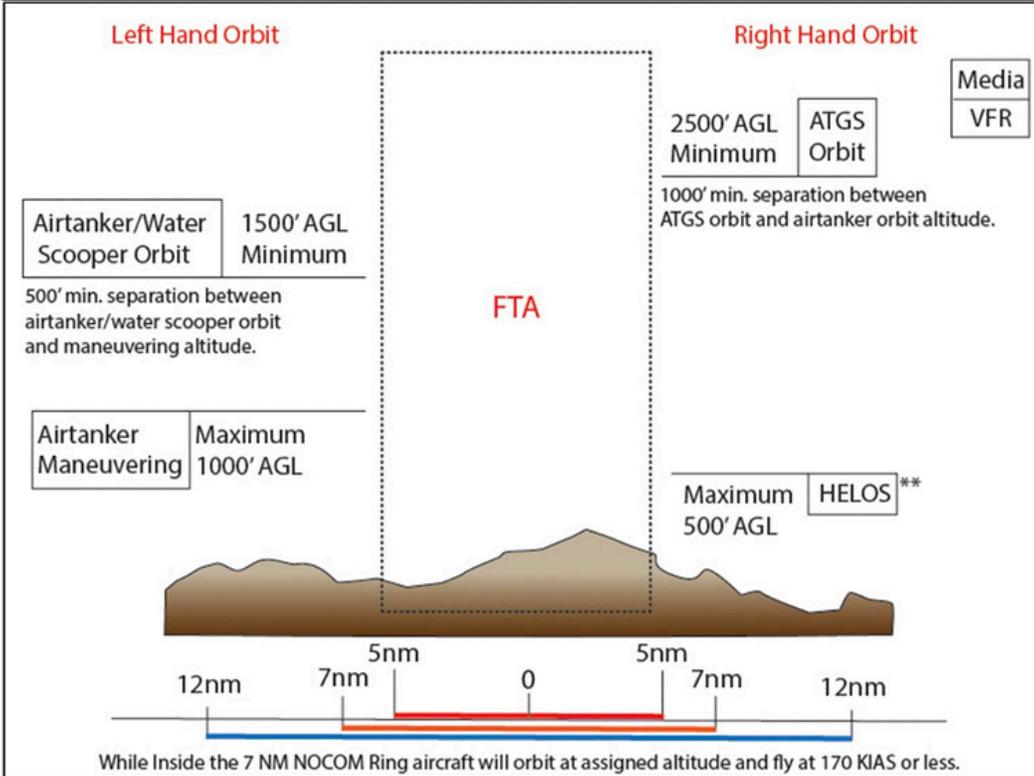
<https://www.nwcg.gov/publications/505>

\*\*\*Clearance is required to enter the FTA\*\*\*

Initial Radio Contact: 12 nm on assigned air tactical frequency.

No Radio Contact: Hold a minimum of 7 nm from the incident.

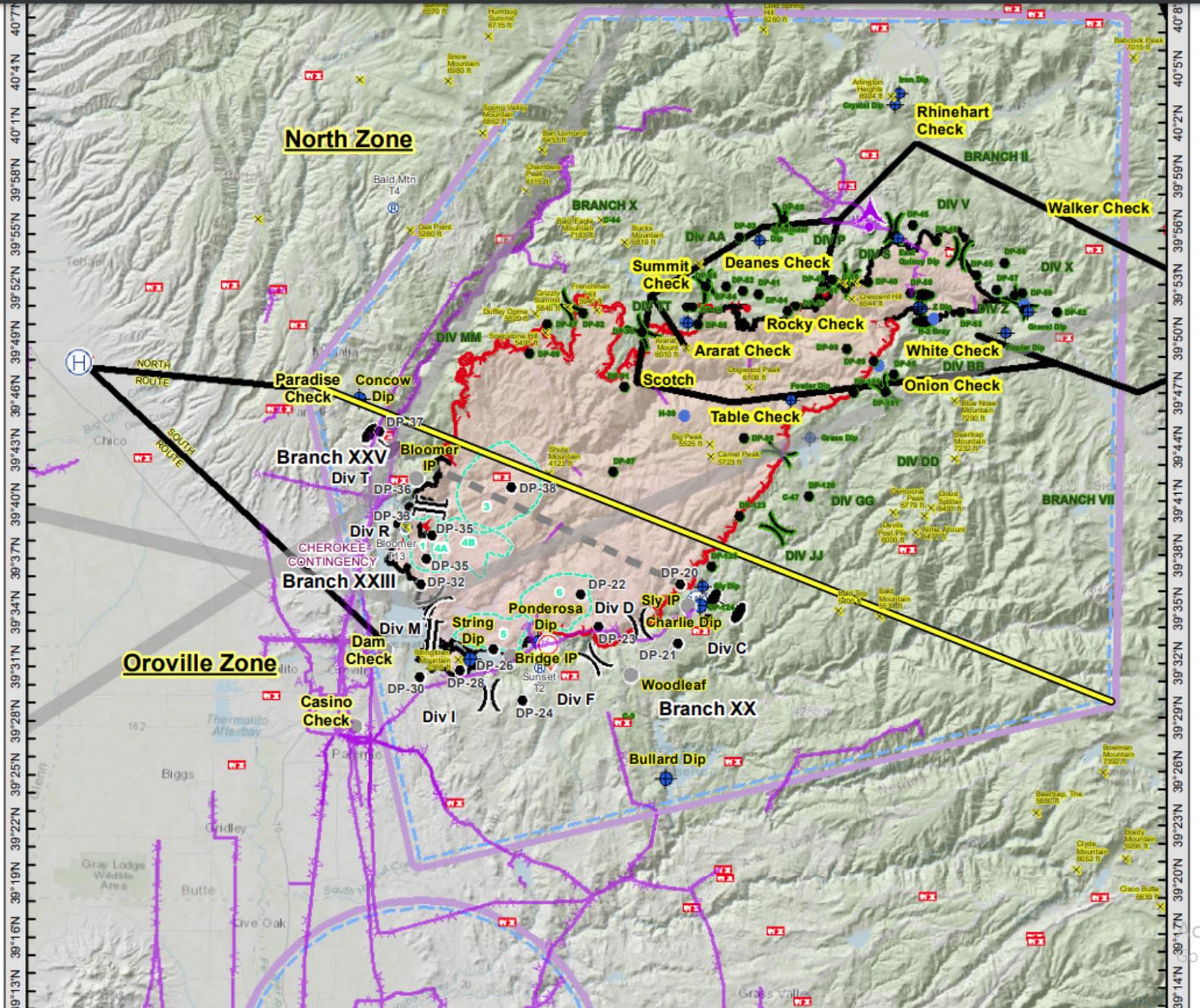
Note: Airtanker maneuvering altitude determines minimum airtanker and ATGS orbit altitudes. Assigned altitudes may be higher and will be stated as MSL.



\* Media and IAA Aircraft: Maintain VFR separation above highest incident aircraft or at the altitude assigned by the controlling aircraft.

\*\* Helicopters: Fly assigned altitudes, orbits, and routes.

Airtanker Base As Assigned	Air Guard 168.625 Tx Tone 110.9	Air to Air As Assigned	National Flight Following 168.650 Tone 110.9 TX and RX
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# REASONS YOU MIGHT FIND YOURSELF IN AN **FTA**

## Reporting a new wildfire

- There are no SECRET fires in California anymore
- ALERT AI Cameras
- Cell phones

## Curiosity

- “I’ll just stay above all the air tankers...”
- “I’ll just fly over it once to check it out and then leave the area.”
- “If I don’t make eye contact, maybe they won’t notice me...”
- “I just want to make sure someone has called it in...”

## “There’s no TFR...”

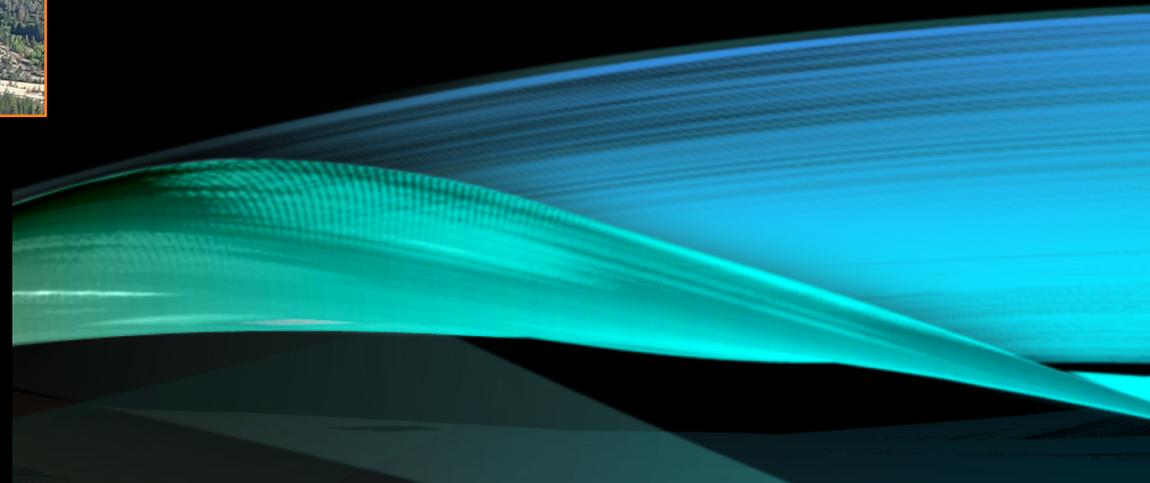
- True. However, there **IS** a....?
- How long before a TFR will be established and published to Foreflight or other maps?

*Where there’s smoke...there’s a whole armada of aircraft*

Summary:



STAY AT LEAST  
15 MILES  
AWAY FROM  
FIRES/SMOKE



# HOW AVIATION INTEGRATES WITH GROUND ATTACK

- General Strategy
- Supports the ground attack
- Slows (or retards) the forward fire spread
- Buys time and allows ground forces to get much closer to the fire
- Provide safety lookout from the air
- Protect high-value structures or infrastructure

# HOW “AIR ATTACK” COMMUNICATES WITH FF AIRCRAFT

- AA establishes the FTA and coordinates the air space (Air Traffic Control)
- AA then communicates with the IC on the ground
- Directs air tankers and helicopters to suppress or slow the fire spread





WHAT IT LOOKS LIKE



WHAT IT SOUNDS LIKE



# AERIAL SUPERVISION

- Standard terminology and routing
  - Clearance of all aircraft into Fire Traffic Area
  - Common altimeter setting for the incident
  - Vertical & horizontal separation enforcements
  - Downwind – Base – Final legs
- Verbal target descriptions – or Lead Planes
- AT pilots maintain set orbit altitude until given clearance to maneuver
  - Left-hand orbit for AT's
  - Right-hand orbit for AA
- Rotor wing aircraft either sequenced or separated by “fences”



STILL FIRE

# RETARDANT

What it does and how it works

- Slows fire spread and allows fire fighters to work closer to fire
- 88% water
- 12% ammonium phosphate (fertilizers) and food-grade thickeners



# RETARDANT

- Bright red dye to allow it to be seen from the air
- Degrades rapidly in UV light
- Non-toxic to animals and environment
- Long-term retardant properties



# HOW EFFECTIVE IS RETARDANT?

A picture is worth a thousand words...









THE END

Thank you for your time



# NORTH AMERICAN ROCKWELL OV-10A BRONCO

- Pilot & Air Tactical Group Supervisor
- Mission profile
  - Airspace coordination
  - Command & control
  - Reconnaissance



# S-2T AIRTANKERS

- Workhorse of the aviation program
- 1200 gallons of retardant
- Single pilot crew



# HELICOPTERS

## Missions

- Water dropping (up to 1000 gallons)
- Helitack crews
- Aerial Ignition
- Hoist Rescue
- Mapping
- Medical Evacuation



# C-130 HERCULES

- 7 C-130's
- Currently being outfitted and tanked for air tanker operations
- Former Coast Guard aircraft

