

Reporting Fish Kills on Clear Lake with iNaturalist



Fish kills – massive die-offs by one or more species of fish – occur when a freshwater habitat becomes severely imbalanced due to localized or general ecological stressors. These stressors can include abrupt temperature or acidity changes, accidental spills, acid mine drainage, harmful algal blooms, anoxia/hypoxia, cold/hot water pollution, dissolved solids, diseases, droughts, herbicides, life cycle events, sewage, nutrient pollution, overturn of lakes, pesticides, turbidity, and other reasons.

The Big Valley Band of Pomo Indians collaborates with a number of local, tribal, state, and regional agencies to monitor Clear Lake water quality, especially for harmful algal blooms (HABs)¹ and fish kills. Because fish kills happen sporadically across the 68 square miles of California's largest lake, we need more eyes on the water.

You can play an essential role in helping to monitor Clear Lake for fish kills.

The screenshot shows the iNaturalist project page for the Clear Lake Fish Kill Monitoring Project. The header includes the iNaturalist logo, navigation links (Explore, Community, More), and a 'Log In or Sign Up' button. The main banner features a topographic map background with the project title 'Clear Lake Fish Kill Monitoring Project' and an 'About' section describing the project as a citizen science effort to record fish kills. Below the banner, a summary bar shows 7 observations, 4 species, 6 identifiers, and 5 observers, along with a 'Stats' button. The 'Recent Observations' section displays four entries: 'Perch-like Fishes' (Order Perciformes, 2 months ago), 'Asian Clams' (Genus *Corbicula*, 2 months ago), 'European Carp' (*Cyprinus carpio*, 2 years ago), and another 'European Carp' (*Cyprinus carpio*, 3 years ago).

Website: <https://www.inaturalist.org/projects/clear-lake-fish-kill-monitoring-project>

¹ Harmful algal blooms present health dangers while the blooms are alive – by producing cyanotoxins that are ingested by organisms and stored in living tissue; and when the HABs die off – as decomposing blooms result in toxic, oxygen-depleted waters that can result in fish kills. Additionally, cyanotoxins present in fish tissues pose a threat to any organism feeding on those fish: carnivorous fish, crustaceans, birds, mammals, and humans.



Big Valley EPA has set up the **Clear Lake Fish Kill Monitoring Project** on iNaturalist to automatically collect any and all reports of dead fish in the vicinity of Clear Lake.

You don't need to be a project member; you *do* need to set up an account on iNaturalist. The iNaturalist Getting Started Guide is available on this link:

<https://www.inaturalist.org/pages/getting+started>

How to Make an Observation with your iPhone

- 1 Tap **observe**.**
- 2 Add one or more photos as **evidence**.**
- 3 Choose **what** you saw.**
- 4 **When** you saw it should be added automatically.**
- 5 **Where** you saw it should be added automatically. If it doesn't, check Privacy in the Settings app.**
- 6 **Save** your observation.**
- 7 **Upload** to share with the community. This should happen automatically. If it doesn't, tap the Upload button. You can turn off automatic upload from the app settings from the Me tab.**

Choose one of the computer vision suggestions, search for something else, or type in a 'Placeholder' if offline

The app should fetch your location automatically and display it on the map. If it doesn't, go to the Settings app and tap Privacy to enable Location Services for iNaturalist

Observations are automatically counted by collection projects and can't be added manually

Upload

**** Note: whenever you take a photo with iNaturalist (versus pulling an existing photo from your camera roll of previously taken photos), the app will automatically make suggestions as to which identification to use.**

Use your best judgement when selecting an identifying fish taxa.

If unsure (you can't figure out the species or genus), use "Ray-finned Fishes."

WHAT TO DO WHEN THINGS GO WRONG

****If your cellphone signal is weak, iNaturalist doesn't have full functionality.**

STEP	
2	If your photos are taking a long time to load, save your photos to your smartphone, and upload them later
3	If the family, genus, or species name doesn't load, type in the common name and later, when you have a stronger cell signal, choose "edit" and change the identification name
4/5	If the location name isn't automatically loaded, try editing the location by adjusting the map until the nearest waypoint (indicated by a green icon with the place name) is inside the exact middle of the white spotting circle and selecting it. If it <i>still</i> doesn't load, wait until you have a stronger internet signal and edit your observation.
7	If you see the "sync" message continuously and your observation doesn't fully upload, wait until you have a stronger cell signal and open the iNaturalist app again.

How to report a fish kill:

- ☐ **One:** Set up a personal account on [iNaturalist](https://www.inaturalist.org/) (<https://www.inaturalist.org/>), either via the website or by downloading the app to your phone.
- ☐ **Two:** Create a new observation on iNaturalist:
 - a. Take multiple photos of the dead fish. If there are >1 dead fish, try to count the number. If there appear to be >1 species of fish, please indicate this in the "Notes" section.
 - b. Use your best judgement as to the fish taxon – and it's OK to choose the highest taxonomic level of "Ray-finned Fishes" if you are uncertain of the exact specie(s).
 - c. Check the location displayed in the app. Edit it if necessary.
 - d. Fill in the Notes section with the following information:
 - How many different types of fish are dead?
 - Do you observe different sizes or age groups of the fish?
 - Did you witness abnormal behavior(s) in living fish (gasping or swimming strangely)?
 - Can you see an algal bloom nearby, or a film/scum on the water surface, or visible pollutant(s)?
 - Do you smell any strong chemicals or a possible fuel or sewage leak?
 - Do you see any nearby pipes, outlets, or intake valves?
 - e. **Save and upload your observation.**
- ☐ **Three:** On Android smartphones, you should be able to select "Alive" or "Dead" within the app. If you own an iPhone, due to a technological glitch with the current version of the program, you will not be able to do this within the app.

It would be *very* helpful if you revisit the observation by opening your iNaturalist account from your computer's web browser and edit the observation by selecting "Dead".
- ☐ **Four:** Verbally report the fish kill to the California Department of Fish & Wildlife at 916-358-2790
- ☐ **Five:** IF REQUESTED, collect a representative sample of both the water and the dead fish and place the sample(s) on ice (do NOT freeze it) until you are able to hand it over to agency personnel. CDFW staff are willing to meet you halfway – at Williams (Hwy 5 and Hwy 20).
- ☐ **Six:** If you have a Facebook account, we welcome you to ALSO post your photo(s) and notes to the Clear Lake Water Quality Page <https://www.facebook.com/ClearLakeWaterQuality/>