Wolf Location Automated Mapping System: Additional Information and Frequently Asked Questions

Intent and Limitations of the Mapping Tool:

- This map is primarily intended to provide livestock producers regularly updated, general location information on GPS-collared wolves to help mitigate wolf-livestock conflicts.
- The tool does not identify land ownership. Wolves frequently utilize private land and any access restrictions to private lands should be respected.
- Only a portion of the wolves in California are GPS-collared, and the number of functional collars should be expected to be dynamic. Collars stop working or even fall off. Wolves can leave the state or die. This map only includes the approximate locations for GPS-collared wolves.
- Please reference the most recent Approximate Area of Gray Wolf Activity map for all other areas of known wolf activity.
- Wolves within a pack sometimes move independently of each other, and thus the collar or collars in a given pack do not necessarily reflect the locations of all pack members. Wolf-livestock conflict can and will take place beyond the boundaries of active cells.
- CDFW provides this mapping tool to assist livestock producers. CDFW may modify or discontinue the tool if it results in the harm or harassment of wolves or other wildlife or trespassing on private property.

Functions of the Map:

- The map contains an invisible grid of hexagonal cells. The displayed hexagon for each collar is the hexagon containing the most recent location for that collar.
- Scrolling over a highlighted cell will provide information on the pack and the last recorded date of the location.
- If multiple collars are in one location, only one cell will be highlighted.
- This map is fully automated. If a collar has not reported data for a given day, the map will continue to show its last known location.

Collar Data:

- CDFW typically programs GPS collars to collect three locations from dusk until dawn when wolves are most active, and then a fourth point at midday. Although the standard four-locations-per-day schedule is used to maximize battery life, the frequency of data collection increases during specific times of the year as part of research on diet and movement.
- GPS collars attempt to transmit location data every morning. Sometimes data transmission is delayed or does not transmit due to various factors such as weather and dense forest cover.

Denning and Sensitive Sites:

- Gray wolves typically have their young and use den sites in early spring. After leaving the den, wolves change to utilizing rendezvous sites, where young are safely kept until they can travel with the pack.
- Wolves are sensitive to disturbance at both den and rendezvous sites.
- While denning and rendezvous site behavior is occurring (typically April through August), certain cells in the immediate vicinity will not be activated on the map. Collared wolf locations from cells outside of these protected areas will continue to show on the map. The lack of an active cell or cells within pack territories shown on the Approximate Area of Gray Wolf Activity map does not mean that the pack is no longer present.

Frequently Asked Questions:

Why aren't collars providing real-time location data?

- Wildlife managers must decide between increasing the frequency of data transmission and the longevity of the collar's battery. Close to real-time data transmission is possible for GPS collars; however, the battery life would be only weeks, requiring wolves to be caught every month (a time-consuming and expensive process, and one that is made more difficult when a wolf has been previously captured). The data collection and transmission schedule used by CDFW typically results in a 2-3 year collar life.

Does the collar data represent all known wolf activities?

- No. Only a subset of the known wolves, in a subset of packs, are currently collared. The collars in each pack are reported in CDFW's quarterly wolf updates.
- There are also likely an unknown number of dispersing or yet to be discovered groups of wolves within the state. CDFW relies on assistance from the public in reporting new wolf activity: Gray Wolf Sighting Report

How was the cell size determined?

- The cell size was selected based on the average daily movement of collared wolves in California.
- This cell size is intended to be small enough to show changes based on typical daily movements and be helpful to livestock producers, but large enough to protect exact wolf locations.
- Prior to the development of this tool, approximate locations of GPS-collared wolves were commonly shared with livestock producers via phone or text message. The cell size on this map is approximate to the level of detail that was shared via that prior approach.

What about GPS location "clusters"?

- A GPS 'cluster' occurs when a collar reports several locations in a specific area, indicating that the animal is using that area for an extended period of time. This can result from wolves sleeping, resting, or feeding.
- This map does not show specific locations.
- When clusters develop that suggest possible wolf-livestock conflict, CDFW contacts the potentially affected livestock producer directly.

How are collars deployed?

- Wolves in California can use extremely large areas, often exceeding 500 square miles. When a new group of wolves is detected, CDFW biologists use techniques such as camera traps and audio detectors to try to pinpoint regular wolf movements.
- Ground captures typically occur from May through November. Helicopter captures typically occur in fall and winter. Helicopter captures are greatly aided by the presence of existing collars, which allow CDFW and a capture contractor to target very specific areas for additional captures.
- CDFW tries to maintain at least one GPS collar in each wolf pack territory. Wolf packs and groups with higher known or potential conflict with livestock are prioritized for capture and collaring.