Disturbance Data Processing

This page provides a description of how polygon data of disturbances and treatments are evaluated and processed into the LANDFIRE Events geodatabase.

Disturbance and vegetation/fuel treatment data or Event data submitted to LANDFIRE will be evaluated for inclusion into the LANDFIRE Events geodatabase. Each event must meet the following minimum requirements to be included in the Events geodatabase:
1. The event must be represented by a polygon on the landscape and have a defined spatial coordinate system.
2. The event must have an acceptable event type needed for LANDFIRE updates.

Category	Event Type (polygon features only)
Fire	Wildfires
	Wildland Fire Use
	Prescribed Fires
Other Disturbances	Insects and Disease
	Weather Damage
Other Treatments	Harvest/Thinning
	Seeding/Planting
	Mechanical
	Chemical

3. The event must be attributed with the fiscal year or date of occurrence or observation that coincides with the current data call.

All data meeting LANDFIRE minimum requirements are systematically converted to the standard LANDFIRE Events format and analyzed to eliminate geospatial or information content errors. During this process, disturbances and management activities are assigned to a LANDFIRE Event Type. Once the data is in the LANDFIRE format, it is reviewed and evaluated for use in the production process and two different layers are produced. Data from 1999-2020 were processed by calendar year and data from 2021- present were processed by fiscal year. Fiscal year is from October 1st through September 30th. Calendar and fiscal year were pulled from the end date (where available) for all treatments and disturbances from 1999-2022. In 2023, LF switched to pulling calendar and fiscal year from the start date (where available) for wildfire, wildland fire, and wildland fire use events. Mechanical treatments were labeled as Other Mechanical for data from 1999-2023. Starting in 2024 LANDFIRE broke out the Other Mechanical treatment type into Mechanical Add, Mechanical Remove, and Mechanical Unknown.

The Raw Events layer is a compilation of all acceptable Event perimeters. This layer may include multiple perimeters for the same event and a high degree of overlap between events within a single calendar or fiscal year. Examples of the former include multiple perimeters for a single fire event reported by several different agencies or individuals. Examples of the latter include locations in which multiple disturbances and/or vegetation/fuel treatments occurred within the same calendar or fiscal year.

The Model Ready Events layer has been reduced to only one unique event for a location per calendar or fiscal year. To produce the Model Ready layer, a series of topologies are created to identify areas of overlap between polygons within the same calendar or fiscal year. The topology overlap errors are corrected using a standard hierarchy of LANDFIRE Event types, which are organized so the Events with the greatest impact on vegetation and/or fuels composition and structure are ranked highest. To

correct topology errors, polygons with lower-ranked events are merged into polygons with higher-ranked events where they overlap. When there were multiple perimeters for the same event the perimeter with the most information is chosen. The result is a layer which contains only one event for a location per calendar or fiscal year. Point derived polygons and polygons that are <0.02 acres are also removed from the Model Ready Events.

The Model Ready Events layer is a primary input for developing the LANDFIRE Disturbance Grids which are used to update a multitude of LANDFIRE products.