Transform data into insight

How foundational data informs your prioritized wildfire resilience strategy

vibrant planet

More actionable insights from existing data

It takes time and expertise to manage every data source required for large-scale decision making. To speed up the process for you and your team, Vibrant Planet harmonizes hundreds of the industry's most widely used and publicly available datasets and models, adding analytics to make them more actionable. Our platform makes it easier to gather insights based on your data, other public data sets, and trusted models, that would otherwise require hundreds of analysis hours from your team to surface. We reduce your team's work so they can spend more time with partners and in the field.

EXAMPLE 1

Analyze and segment the landscape

Sample remote sensory dataset: Public NAIP imagery
Sample output: Field-ready, segmented management units

Using an ensemble of machine learning packages, Vibrant Planet transforms NAIP imagery, other satellite imagery, existing lidar, and more. Our models build you a more consistent and thorough view of your vegetation structure, including a synthetic Canopy Height Model (CHM), canopy cover estimates, and a mapping of canopy dominant trees. Together with topography, vegetation type, and the precise, current, and 3D synthetic CHM, we apply algorithms that group biophysically homogeneous polygons.

Next, based on ownership and/or similar controlling interests, the platform subdivides these homogenous polygons into management units.

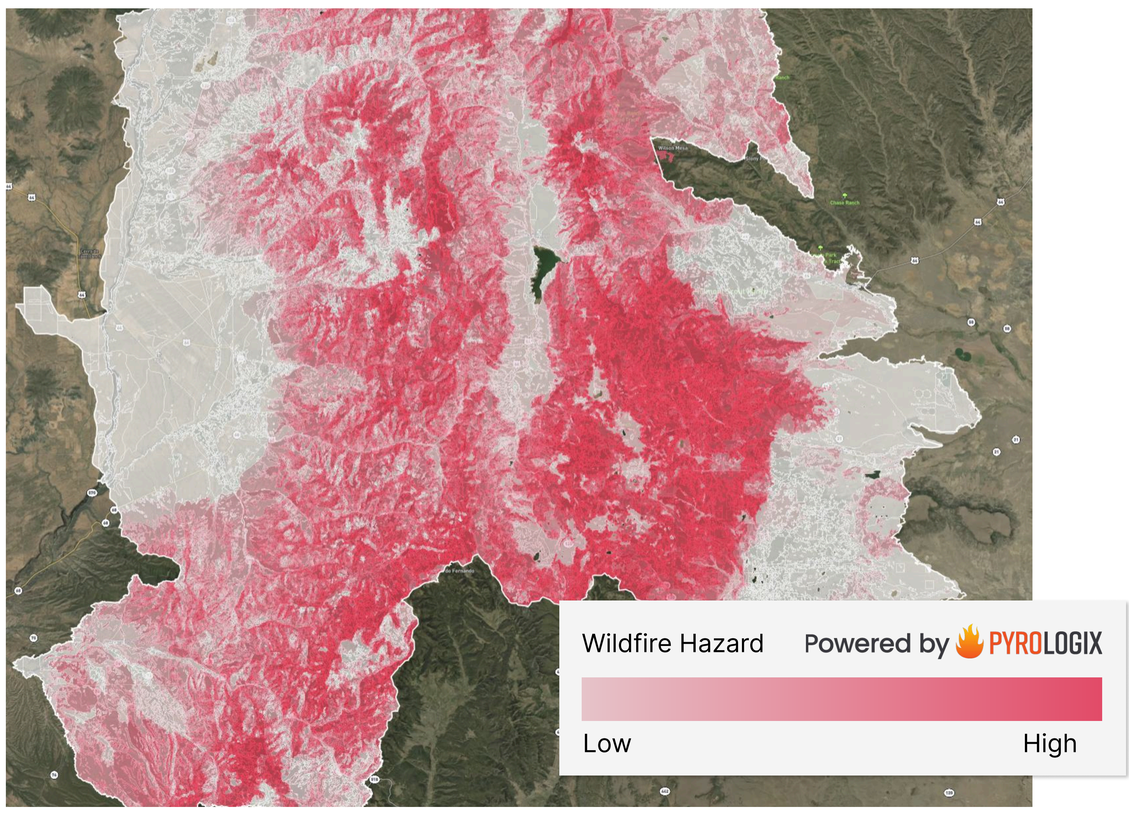
From here, Vibrant Planet estimates feasible treatments and assigns a recommended treatment with a likely positive impact. These polygons act as pre-layout treatment units and form the basis of your wildfire resilience management strategy. Currently, customers can access management units anywhere in the western United states.

EXAMPLE 2

Estimate wildfire hazard

Input: Fuel, weather, topography data
Output: Wildfire hazard

Together with Pyrologix, a Vibrant Planet company, the platform starts with publicly available datasets (ex LANDFIRE) to build quality wildfire model data inputs (ie topography, climate, canopy fuels, and surface fuels). By facilitating multiple calibration workshops across the country, Pyrologix improved the accuracy of fuelscape inputs with the help of the specialists who know their conditions best.



Then our platform updates this information with earth observation data and known treatment spatial data – ensuring our fire models run off the most current data possible.

Vibrant Planet has operationalized the FlamMap command-line utility (built and calibrated by the Rocky Mountain Research Station of the U.S. Forest Service) into WildEST - a comprehensive fire characteristics modeling framework engineered by Pyrologix. With WildEST, every year the platform efficiently runs accurate, specific, and current wildfire intensity and probability estimates - together known as hazard - anywhere in the United States. This hazard data, and visual map, is available for all customers (example pictured on Page 1).

EXAMPLE 3

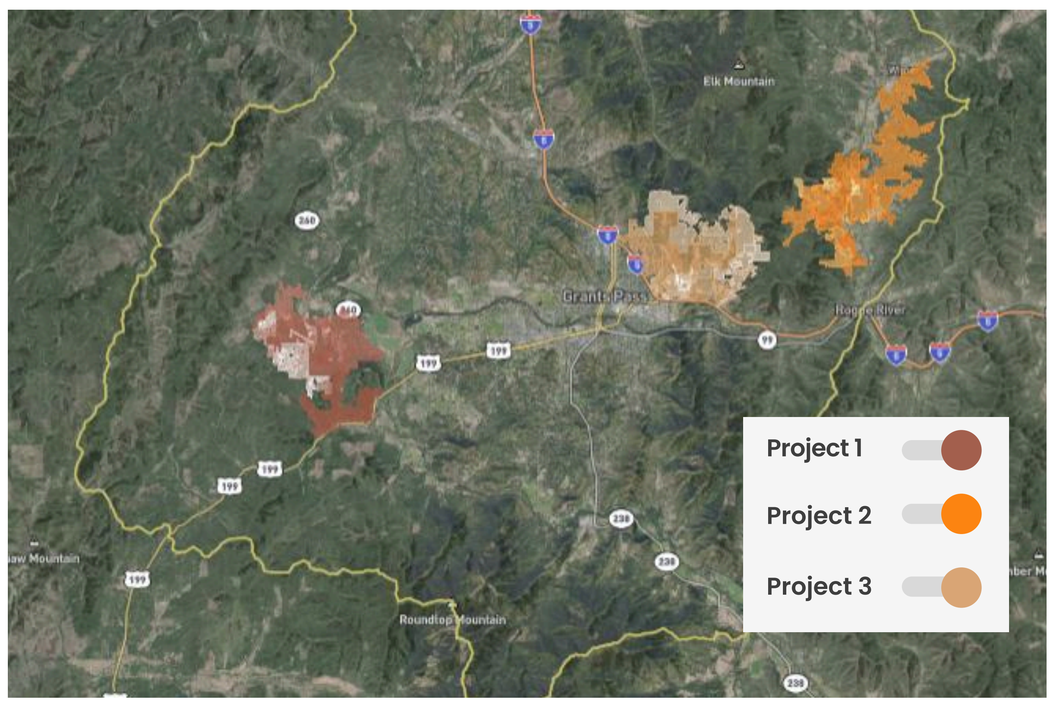
Prioritize what matters

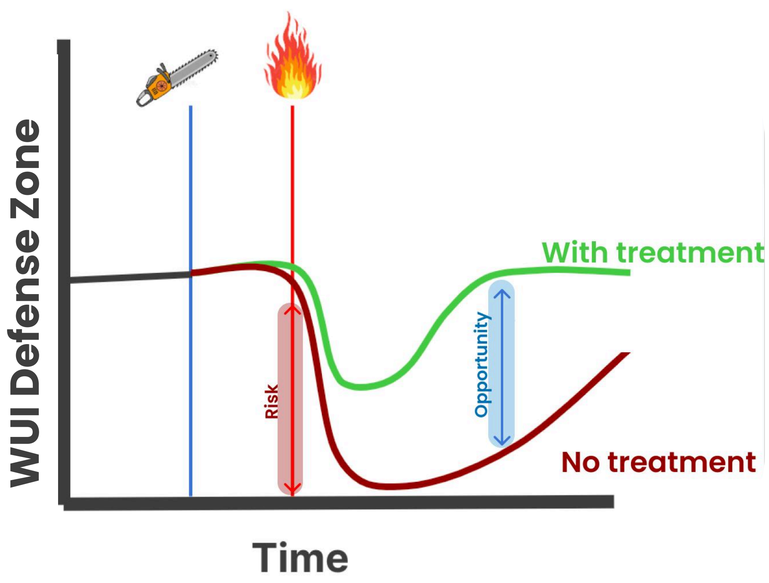
Sample input: Wildland Urban Interface (WUI) defense zones
Sample output: Prioritized treatment opportunities in WUI

Our platform begins analyzing landscape values by harvesting and processing data from publicly available, industry-leading sources (ex: structure footprints), as well as from your entity (ex: WUI defense zones, bird nesting sites) and organizes them into a database of Highly Valued Resources and Assets (HVRAs), which we call Strategic Areas, Resources, and Assets (SARAs).

We normalize all SARA data through a relative, economic-based process (documentation available to anyone through our product guide). Next, Vibrant Planet packages all SARAs into the management units explained in the the first example. SARA value can be compounded when they overlap. We draw on available models, literature and expertise to quantify how each SARA responds to different disturbance intensities. In collaboration with the USFS threatened and endangered species (TES) working group, we're also developing SARAs and response functions that will be available for anyone to use.

In the case of a WUI defense zone, we apply vetted fire intensity desired conditions and then expose that SARA to Pyrologix's fire modeling outputs to determine where there is the most risk. Based on the suggested feasible treatment, we then measure the available risk reduction opportunity (graph bottom left).





Finally, we map that opportunity across your analysis area to help you find the highest opportunity work. Within the potential risk reduction area, we include data such as suggested sequencing powered by the Rocky Mountain Research Station's (RMRS) ForSys, which Vibrant Planet co-iterates and co-develops on thanks to our Cooperative Research and Development Agreement (CRADA) with RMRS. With ForSys, the platform calculates estimated treatment costs, appraised product benefits, projected workforce requirements and land ownership. Prioritized project sample above.