Adaptive, collaborative, data-driven stewardship:
A next-generation decision support platform for natural resource managers

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THE CHALLENGE

The intersection of climate and human-driven disturbances are eroding landscape resilience, both rapidly, and at scale. The sheer complexity of these issues make it difficult for managers and decision-makers to respond quickly and effectively. Addressing complex, cross-boundary management challenges to accelerate the pace and scale of restoration planning requires:

(1) explicitly incorporating collaborator values;

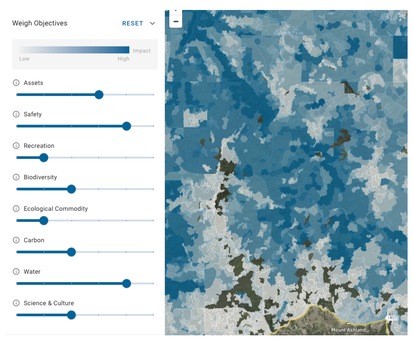
(2) generating consistent data and analytics that can be understood and customized by users;

(3) prioritizing potential investments and actions dependent on data and values; and

(4) building cross-group consensus and evaluating tradeoffs

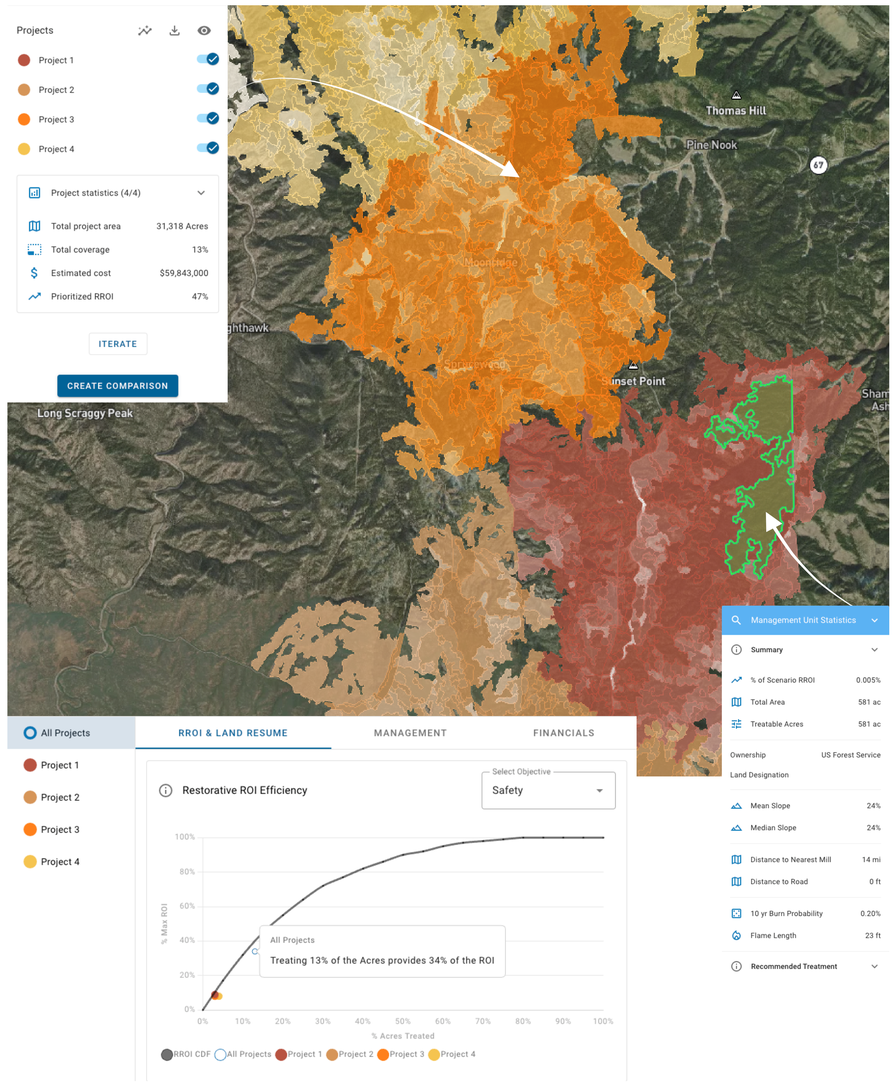
Vibrant Planet's cloud-based, scenario-building and decision support application is built to resolve these and other management issues at local, statewide, or national scales.

ELICIT COLLABORATOR VALUES



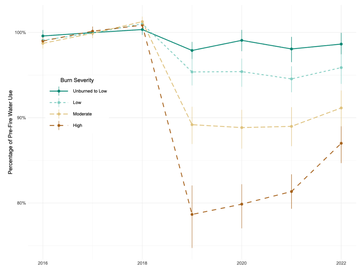
Collaborators hold different values and place different relative importance on those values, which challenges consensus decision making. Consensus requires that stakeholders have agency to define their relative values and that they can be interoperable with other collaborator inputs in a common quantitative framework. Users can create multiple scenarios using their own objective values, and can evaluate multiple budget and treatment scenarios via altering the number of projects, average project size, and budget allocations.

Data-driven stewardship through quantitative impact assessment of management interventions.

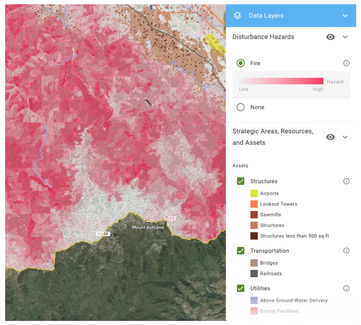


The ForSys optimization function builds and schedules treatments based on user-generated prioritization of landscape resilience objectives linked to strategic assets and resources (SARAs), including water, biodiversity, carbon, economic outputs, forest resilience, and fire safety.

QUANTIFY DISTURBANCE IMPACTS & RISK

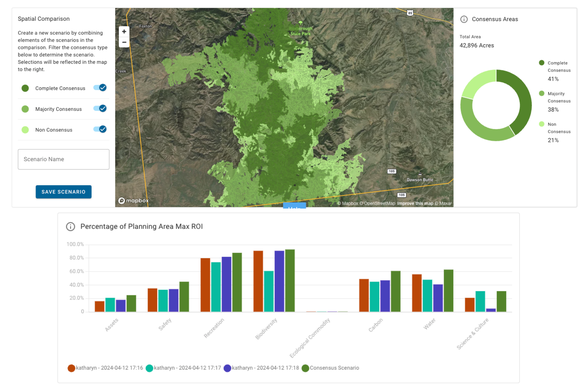


Observed post-fire response of remote sensing–derived evapotranspiration (ET) following the 2018 Kerlin fire in California. This figure shows proportional change in ET due to fire, by intensity and vegetation type. With this approach historical trends, modeled responses, and monitoring of future recovery make use of the same data sources.



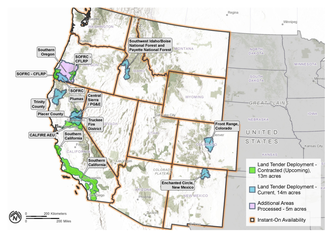
Current wildfire hazard (*fire intensity x burn probability*) is quantified across the landscape based on current fuel conditions and stochastic fire simulations by Pyrologix. Treatments alter fuel conditions and wildfire hazard. Wildfire hazard is exposed to SARAs to calculate fire risk, and how treatments can help avoid loss.

VISUALIZE TRADE-OFFS & FIND COMMON GROUND



Participant inputs drive the entire collaborative process; users can visualize scenario treatment tradeoffs, treatment prioritizations, and treatment consensus areas. Collaboratives can easily use areas of agreement to determine next steps, and leverage the spatial and tabular outputs from the platform to tangibly accelerate restoration efforts.

Learn more



Current and upcoming Land Tender platform deployments (circa April 2024).