RESEARCH BRIEF

Collaboratively Engaging Stakeholders to Develop Potential Operational Delineations (PODs)

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Management Implications:

- **Trust and knowledge built through collaboration among agencies and stakeholders during PODs development is as instrumental as the resulting analytical process.**
- **The process of creating PODs allows for flexibility in the degree and timing of collaboration and in products created.**
- **PODs can be used to make reports and maps summarizing ecological conditions, fire behavior, hazards and values and risk, all at an operational scale.**

PODS: A Strategic Tool for Collaborative Wildfire Response

This report describes the strategic planning tool called PODs (Potential Operational Delineations). PODs is a spatial wildfire planning framework co-developed at the Rocky Mountain Research Station, Oregon State University, and the Colorado Forest Restoration Institute at Colorado State University. PODs helps identify the most effective fire control features on the landscape to support wildfire incident management and help plan forest restoration and community protection activities This process uses local expertise in combination with advanced wildfire modeling and spatial analysis tools to determine the safest and most effective control lines for wildfire response, irrespective of land ownership. This builds on a longstanding practice of firefighters identifying control locations during an incident, but in the preseason before the fire starts. Ideally, this is collaborative strategic planning, a framework that brings together forest leadership, land managers, firefighters, affected communities, and other stakeholders to address wildfire risk proactively. Once the control lines are identified, stakeholders can collaboratively work to integrate land management objectives into risk-informed fire response.

Products: More than Just a Map

Developing PODs results in a map of possibilities across a landscape that can integrate land management and conservation objectives, local property data, and risk assessments with a survey of tactically designed fire control lines. This process can result in any number of products, such as maps and reports, for use during wildfire incidents and as preseason planning or communication tools between agencies and stakeholders. The range and breadth of products depends on the specific concerns and questions of those involved in POD creation. An example of a commonly used POD related product is a map with POD boundaries. However, POD maps can also be paired with results from quantitative risk assessments which summarize hazards and values at risk, to develop strategic response zones, which line officers and fire managers can use to guide decision-making. Another POD product that can help integrate land management objectives and fire response is a POD Atlas. This map book combines data and input from stakeholders, summarizes ecological conditions to help prioritize fuel treatments, and helps predict fie behavior under a variety of likely conditions. It might also include information on the wildland-urban interface buildings, water and utility infrastructure, land ownership, or critical watersheds and habitat.

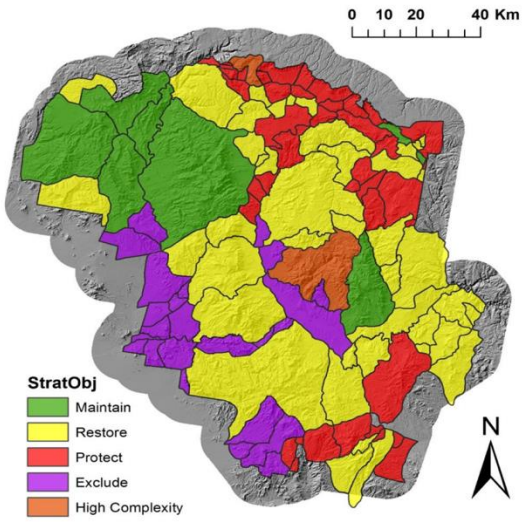
Collaborative PODs Line Delineation Process *Photo: M. Caggiano*

Due to PODs' collaborative nature, development requires a series of strategically timed and coordinated meetings among stakeholders, such as Forest leadership, fire management staff, and cooperators. Local firefighters from federal, state, and local agencies delineate the most appropriate fire control lines using their knowledge of fire behavior and suppression opportunities on a particular landscape. They also use analytical products such as the Suppression Difficulty Index (SDI) and Potential Control Line Analysis (PCL) to support these decisions. Other stakeholders can provide spatial data, or note other concerns or considerations which could guide decision making. As a result of this collaboration, the POD framework and additional analysis can assist with incident decision-making in to be used strategically so incidents can be managed in accordance with jointly developed land management objectives.

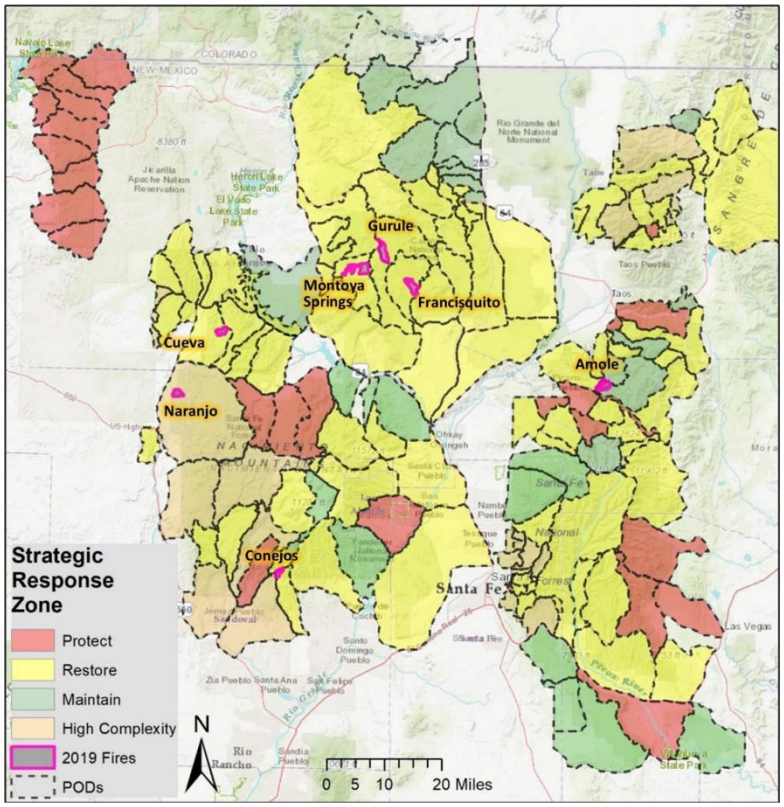
Getting Together in Planning

When it comes to POD creation, the process is as important as the products. While the products inform strategies for controlling potential fires in a given territory, the trust built through collaboration and knowledge sharing with invested parties is key to productive planning. Trust encourages stakeholder buy-in, aligns agency priorities, and generates support for decision frameworks that jointly consider resource concerns, especially when these do not align for all stakeholders. Increased communication and engagement among stakeholders enhance the framework's ability to reflect the interests and priorities of all.

Three POD development models presented in this report represent a continuum of agency-stakeholder engagement and collaboration. The agency-centric approach, used in some National Forests and Ranger Districts, allows the agency staff to begin POD creation independently, developing internal consistency before reaching out to cooperators. A drawback of this model is the potential resistance of cooperators to participate in a process where they did not have the opportunity to provide input initially. The collaborative approach engages cooperators from the start, maximizing opportunities for stakeholders to voice their concerns and identify the resources at risk and important community values from the beginning. One downside of this approach is that it takes considerable up-front coordination. A middle road between the two models above is the hybrid approach, which brings on stakeholders as they become interested, slowly developing products and methods and working iteratively. This method allows for meaningful collaboration in situations of limited resources.



PODs on the Tonto National Forest, Arizona Credit C. O'Connor



Strategic Response Zones and seven fires managed using PODs on the Santa Fe and Carson National Forests over the summer of 2019

Conclusion: A Stronger Response

PODs are a new, collaborative wildfire planning tool that allow for a wide range of stakeholder participation in ways that can inform strategic wildfire management decisions. PODs offer opportunities for collaboration, create shared knowledge and analytical tools, and build inter-agency and agency-cooperator trust for the purpose of planning for and managing wildfires safely, efficiently and knowledgeably. Outcomes include a set of products that enhance understanding in wildfire management and response, as well as increased stakeholder interest, investment, and support

FOR FURTHER READING

- Potential Operational Delineations and Northern New Mexico's 2019 Fire Season. Caggiano, M., O'Connor C. D., & Sack, R. B. (2019).
- O'Connor, C.D. & Calkin, D.E. (2019). Engaging the fire before it starts: A case study from the 2017 Pinal Fire (Arizona). Wildfire. 28(1): 14-18., 28(1), 14-18.
- O'Connor, C.D., Calkin, D.E. & Thompson, M. P. (2017). An empirical machine learning method for predicting potential fire control locations for pre-fire planning and operational fie management. International Journal of Wildland Fire, 26(7), 587-597.
- Thompson, M.P., Bowden, P., Brough, A., Scott, J.H., Gilberston-Day, J., Taylor, A., Anderson, J., Haas, J.R. (2016). Application of Wildfire Risk Assessment Results to Wildfire Response Planning in the Southern Sierra Nevada, California. USA. Forests, 73(3), 64.