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THE FIRE NETWORKS:

SCALING STRATEGIES TO ADDRESS THE COMPLEXITY OF FIRE MANAGEMENT

The PERFACT partnership uses a nuanced suite of strategies to support activities that will lead to more sustainable fire management systems and improve fire outcomes for people and nature. Two frameworks are central to our approach: one that helps clarify the context we are working in—the kind of problem—and the other describing five modes of scaling, which characterize different models for systems change.

What Kind of Problem Are We Working On?

People that work in our sector sometimes refer to “*the* fire problem.” But that phrase doesn’t capture the reality that we face: a stretched and stressed centralized fire management system; communities largely distanced and decoupled from their roles in human, fire and land management relationships; and worsening fire outcomes.

Dave Snowden and Mary Boone describe a framework for decision making that can help us parse out the context we’re working in so that we can use the appropriate tools and strategies to engage. In “A Leader’s Framework for Decision Making” they lay out five kinds of contexts: simple, complicated, complex, chaotic and disordered. This framework—called *cynefin* (kuh-NEV-in) from the Welsh for “habitat”—has been used to better understand everything from the response to the 9/11 attacks to pharmaceutical product development. And it can be used to guide engagement with our fire management system, helping us improve the relationships among our nation’s communities and fire. By determining what context we are in and responding using the tools required for that context, we can achieve better outcomes. In fact, Snowden and Boone suggest that many of the challenges leaders face are actually a result of trying to apply tools and leadership styles more appropriate to a different context.

“ Leaders who try to impose order in a complex context will fail, but those who set the stage, step back a bit, allow patterns to emerge, and determine which ones are desirable will succeed.

Snowden & Boone (2007)

“ In a complex domain, one solves problems through learning.

Hogarth (2018)

What Is PERFACT?

Promoting Ecosystem Resilience and Fire Adapted Communities Together (PERFACT) is a cooperative agreement between The Nature Conservancy, USDA Forest Service and agencies of the Department of the Interior that supports a portfolio of networks and strategies that bring people together to collectively identify and meet our wildfire challenges. These include the Fire Learning Network (FLN, since 2002), Prescribed Fire Training Exchanges (TREX, 2008), Fire Adapted Communities Learning Network (FAC Net, 2013) and Indigenous Peoples Burning Network (IPBN, 2016).

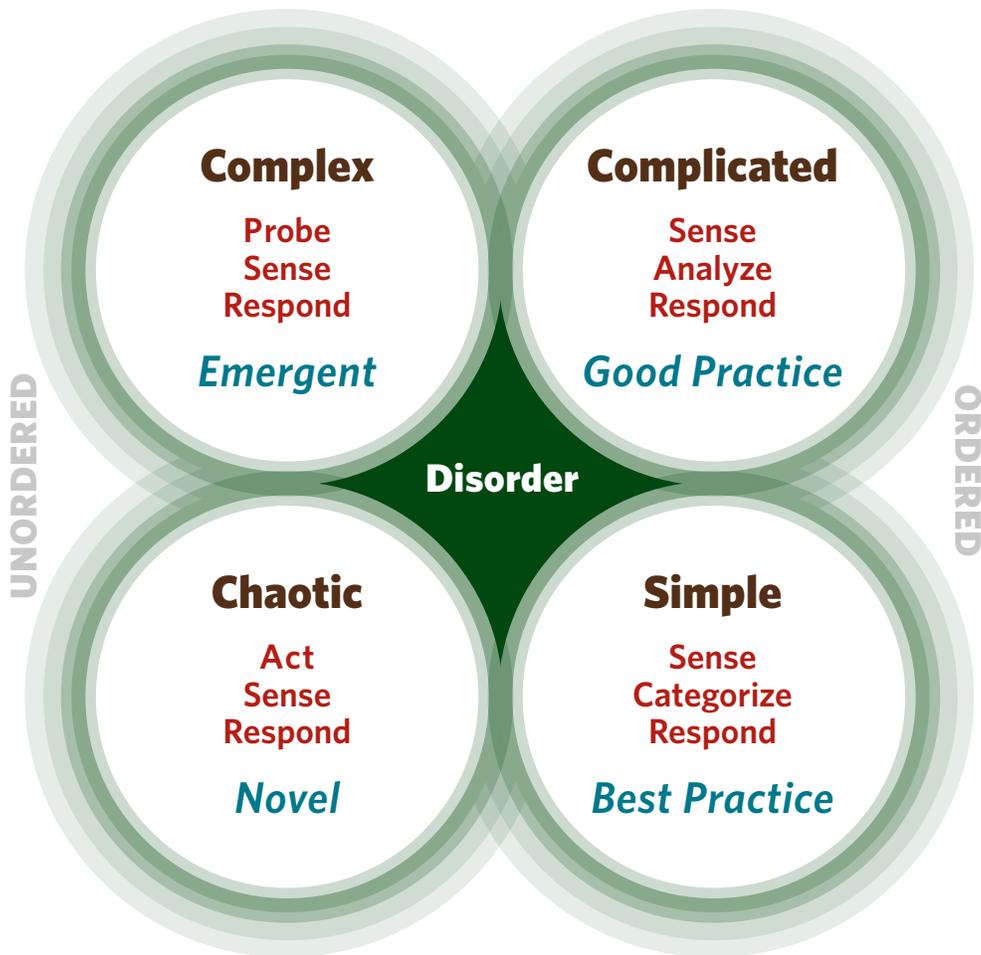


Figure 1: The cynefin framework for understanding decision-making contexts. Dave Snowden and Mary Boone describe this framework in the 2007 *Harvard Business Review* article “A Leader’s Framework for Decision Making.”

More about using the framework has been discussed by Tim Hogarth in a pair of 2018 blog posts, “Complex vs Complicated: Which Problem Are You Solving?” and “The Shift From Experts to Experiments.”

Diagram adapted from Snowden and Boone (2007)

Consider the description provided for complex contexts: In a complicated context, at least one right answer exists. In a complex context, however, right answers can’t be ferreted out. It’s like the difference between, say, a Ferrari and the Brazilian rainforest. Ferraris are complicated machines, but an expert mechanic can take one apart and reassemble it without changing a thing. The car is static, and the whole is the sum of its parts. The rainforest, on the other hand, is in constant flux—a species becomes extinct, weather patterns change, an agricultural project reroutes a water source—and the whole is far more than the sum of its parts.

Both complicated (Ferrari) situations, and complex (rainforest) situations are embedded in our fire management system and the relationships and dynamics among communities and fire. We know, for instance, a lot about the complicated way homes ignite. We can use expert knowledge to understand a particular structure’s vulnerabilities and how conditions are likely to impact it. At the same time, we are also faced with complex issues: How can we best organize the assets of community partners? How will we develop the trust needed among participants for cross-boundary burning? Responding to the complex problems requires emergent strategies, while

the complicated and simple problems can be addressed with a defined set of best practices to achieve relatively predictable outcomes.

To reach our goals we need to make progress across the full range of contexts. We can’t stop at the simple and complicated contexts and expect to reach our intended outcomes. To reach those outcomes, we have to be able to correctly identify and apply the tools appropriate for the job. For example, if a community needs a cooperatively developed fire plan, we could prescribe a planning tool and help them apply it to solve a complicated problem. But this wouldn’t necessarily get the desired outcome—depending on the circumstances, fostering cooperation may be as important as (if not more than) the resultant plan. That is a complex problem, and would require a different approach. Similarly, we see smoke issues popping up as a barrier to prescribed burning in numerous places. This requires a variety of solutions: Some are technical and transferable (for example, smoke regulations or burning practices). Others, such as addressing the needs of specific sensitive populations or businesses impacted by smoke events, are more complex issues, with unique solutions that will be based on the unique concerns and assets in the community.

What Kind of Change Do We Want to Make?

Ask anyone at a fire management conference to fill in the blanks of this call to action: “increase the _____ and _____ of treatments (or restoration).” Nine times out of ten they’ll say “pace and scale.” It is an extremely common refrain in our sector and is generally understood as a mandate to do more, faster, in a bigger area. And certainly, the urgency and stakes we face make this an understandable desire. But how might this fixation with a narrow kind of “pace and scale” obscure our view when there could be excellent strategies that are not about the big levers and wins of scaling up, or the expanding reach of scaling out? The work of Gord Tulloch offers a broader view of scaling that encompasses more dimensions and paths to increasing impact (see Figure 2).

The PERFACT partnership invests in a number of modes of scaling—distributing our resources among many worthwhile ways of making change.

Scaling up is what you do when you have power to leverage. Our partnership uses this mode of scaling by creating feedback loops between communities and decision makers. Creating a flow of information between these levels of operation helps identify inflection points where institutions and governance can support better fire outcomes, and is critical to minimizing unintended

negative outcomes. This kind of scaling has been demonstrated in California where, after a decade of PERFACT support and learning, state agency partners have invested \$20 million in forest and fire management capacity-building guided by that learning ([READ MORE](#)). This kind of change-making is important, but is often over-emphasized by funders and other players eager to make big changes.

Scaling out is what you do when you have an effective solution to a complicated problem, which can be applied elsewhere. PERFACT uses our peer networks to test many approaches to a particular issue, and then to share those solutions and spread replicable practices. For example, the Fire Learning Network was able to export an established, tried-and-true approach to private lands burning from the Great Plains to northwestern California, and now the prescribed burn association model is spreading across California and into the Pacific Northwest ([READ MORE](#)). The networks have also elevated the importance of post-fire recovery planning and frameworks for communities and landscapes—at a learning exchange in Washington, for example, the experiences and practices of the host communities inspired partners in Oregon to begin long-term recovery planning in earnest.

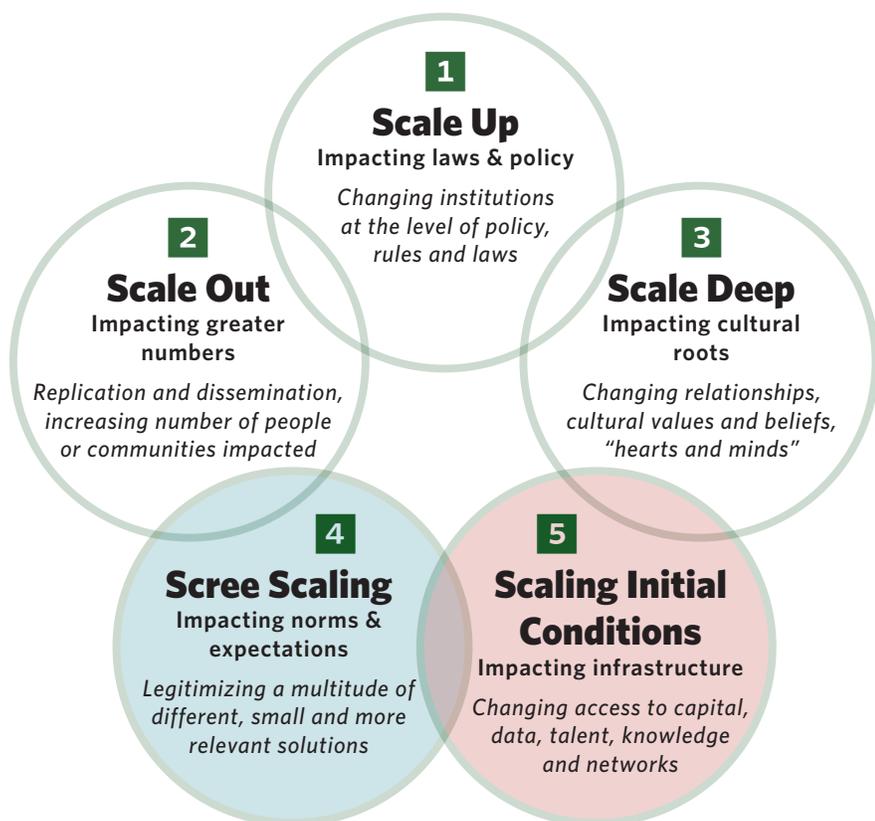


Figure 2: Expanding conceptions of scale. In the 2018 blog post “[Problematizing Scale in the Social Sector: Expanding Conceptions](#),” Gord Tulloch expanded on the work of Darcy Riddell and Michele-Lee Moore, who in 2015 proposed three kinds of scaling: [scaling-up](#), [scaling-out](#) and [scaling-deep](#). Work has also begun on means of [evaluating these five dimensions of scaling](#).

Diagram adapted from Tulloch (2018)

Scaling deep is embedded in the fire networks' values. We know we need to increase diversity in fire management—it's the only way we'll find new paths forward. To get the benefits of more diversity, we have to do the work to improve justice in the sector and in our workplaces. We cannot ask people who have been marginalized to join us in this work unless we are willing to make this space an equitable one. We provide training and strive to lead in ways that support justice ([READ MORE](#)). PERFECT invests in scaling deep—in impacting the culture of fire, and the cultures of our members' communities—by supporting and integrating DEI into how we approach our relationships and the work.

Scree scaling “legitimizes a multitude of different small and more relevant solutions.” Scree scaling is foundational to a transition from a centralized fire management system to a more resilient, dispersed set of systems and solutions. Successfully sharing ownership means being adaptable in terms of what that preparedness, response and recovery looks like in any given place and among any set of partners ([READ MORE](#)). The variety of members represented in our networks, and of approaches they take, demonstrate the fundamentally local nature of our engagement and investments. We aren't trying to clone communities or strategies, but to support leadership and strategies that emerge in each unique place.

Scaling initial conditions is what our capacity-building work aims to support. We know we need to build capacity—for action on the immediate opportunities we have to improve fire outcomes, and also for leadership to navigate beyond established and proven practices. People are doing good work. We can spread that work and continue to dial in its deployment, but without

vibrant local leadership and vision we won't get to the transformative changes that will build more sustainable fire management systems. Our capacity building-approach includes training and best practices to address the complicated problems fire can present. But it goes beyond, to support leaders who can also operate in the complexity our situation demands ([READ MORE](#)).

A Multitude of Paths

To achieve better fire outcomes for people and nature, we need the technical solutions to our solvable complicated problems, and the adaptive capacity to engage with the complex ones. For nearly 20 years, the PERFECT partnership has been evolving to work across the full range of contexts, and to support best practices, good practices, emergent practices and novel practices as needed to meet different kinds of challenges with the necessary leadership and resources.

The work is at once local and intimately place-based, and also governed by layers of wider influence and power. The only way to be effective in such a system is by understanding context, and using a variety of scalar strategies to reach different dimensions of the complexity. While progress is neither linear nor even in tempo, each year we can look back at successful outcomes, both planned and surprising. From individual Aha! moments at workshops on diversity, equity and inclusion, to the rapid spread of prescribed burn associations in California, this year was no exception. And those outcomes lay the foundation for further opportunities as the networks and their members develop and share responses to complicated problems and embrace emergent strategies to address complex ones.

MORE FROM THE FIRE NETWORKS

Scaling up— [Focus on California](#): PERFECT Investments Spark Widespread Progress

Scaling out— [Focus on Learning Networks](#): Prescribed Burn Associations: Shining a New Light on Private Lands Burning in the West

Scaling deep— [Focus on Diversity, Equity & Inclusion](#): Building Skills for Inclusive & Equitable Relationships

Scree scaling— [Focus on Resilience](#): Framing the Post-Fire Conversation

Scaling initial conditions—[Focus on Capacity](#): Building Capacity That Distributes Power and Honors Local Knowledge and Leadership

An index to these documents and more is at <http://www.conservationgateway.org/ConservationPractices/FireLandscapes/FireLearningNetwork/Pages/fact-sheets.aspx>



For more about the Promoting Ecosystem Resilience and Fire Adapted Communities Together cooperative agreement between The Nature Conservancy, USDA Forest Service and agencies of the Department of the Interior, contact Marek Smith at marek_smith@tnc.org.

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