FIRES of CHANGE: Art and science join forces on the North Rim

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DIANDRA MARKGRAF ARTS AND CULTURE REPORTER

NORTH RIM -- Tall pines gave way to small hills blanketed with sprawling clusters of golden-leafed aspen. Charred trunks jutted from the shimmering canopy and stood stark and alone against the cloudless blue sky. Some of the artists on this trip placed fingertips over their mouths as they imagined the former thickly huddled pines.

In this spot, a unique project over two years in the making has ignited between fire experts and 11 artists from Flagstaff and the Southwest. An immense body of scientific knowledge came to light during three days in the Kaibab National Forest at the National Park.

The jarring scene of a forest fire's wake is constant for Southwest residents. In this case, each hand-selected crafter is on the tour based on an exceptional body of work. Invited or juried, they applied to tackle this hot-button issue because of a shared connection with fire.

The Flagstaff Arts Council, sponsored by the Southwest Fire Science Consortium and the Landscape Conservation Initiative, will present the conceptual exhibition emerging from this experience during the Festival of Science at the Coconino Center for the Arts. From Sept. 4 through Oct. 31, 2015, visitors will feel the warming “Fires of Change.”

Forest for the trees

The team found themselves in neck-high aspen and thorny black locust shrubs—the new forest growing in the wake of the 2006 Warm Fire.

Dave Robinson, Kaibab National Forest assistant fire management officer, explained a lightning strike in June of 2006 ignited a low- to medium-intensity blaze. Forest Service officials let it burn as a means to clean up decaying needles and replenish soil nutrients. Two and a half weeks later, the weather shifted drastically and ultimately led to the vegetative loss of 59,000 acres or 90 square miles.

Some patches burned with high heat or “intensity,” causing a near stand-replacement fire.

“It’s not totally a stand replacement because you can look here on the horizon and we still have large ponderosa pines that survived,” Robinson noted, pointing to the green needles in the remaining overstory. “I think if it had been post-monsoon we wouldn’t have seen this large-scale stand-replacement in the mixed conifer. I think everything was just lined up to be hot and dry.”

To understand the future of this section of Kaibab National Forest, and others similarly affected on the Colorado Plateau, the 11 artists of various disciplines—paint, poetry, photography, ceramics and fibers—were guided through three other significant burn sites, both managed and wild, from Sept. 22 to Sept. 24. They will reconnect science and explore societal, cultural and emotional impacts through creative means for the next 11 months.

Craig Goodworth journeyed from the Slovak Republic to participate. The Oregon-based poet and installation artist said he’s always questioned how and if “art can help us better feel the crises that arise in the natural world? Is art useful in that way?”

Coming to life

“Fires of Change” curator Shawn Skabelund grasps fire culture firsthand. The Flagstaff conceptual artist and former hotshot was recognized with a 2014 Viola Award for his solo, fire-laden CCA show, “Virga: The Hunt for Water.”

In his pieces and ideas about what art truly is, he honors the integrity of the material. He encourages artists to listen to that “voice in the back of your head.”

“Talk about those materials. Talk about what tree species that was; what fire that was on; how big that fire was. This is where it gets into the facts they were teaching us….It’s the connection to the local landscapes they live in, that’s the important part. This is why it’s a global issue,” he said.

At each burn site, Julie Comnick, Prescott College faculty member and large-scale painter, collected hunks of charcoal. She drew with bits during discussions in the woods, and as the vans recoiled along Highway 67, she stopped the procession. She emerged from the woods with a piece of pine from the Warm Fire, and cradled the burned log back to the van, the start of a collection for charcoal drawings.

As a curator and artist Skabelund encourages work that evokes startling questions and emotions surrounding an issue where science doesn't have those tools. He outlined the problem of mismanagement of the forests and excluding fire from the ecosystem.

"I want the public to know fire is just as viable as air, water and earth. Those are the four ingredients to making a healthy forest. And I want, as an artist, people to think outside the box with fire, but I also want them to think outside the box about what art is."

The day after returning from the North Rim, the artists gathered at CCA and discussed their roles in the future of this project. Many plan to leap from their studied media; others will take this learned information and reframe it. They will post photos and budding ideas on the LCI's blog. The blog link and exhibition page are viewable at www.flagartscouncil.org.

"We may do these things, and people may not appreciate them, just like people don't appreciate a burnt forest," Skabelund said. "But there's something so beautiful about a burnt forest because you know [it] has the potential to be another lovely, healthy forest compared to a forest where fire's been suppressed for a hundred years; and it's only potential is to either go in and use fire as a means to help it, or [mechanically] thin it out."

In the exchange, some artists noticed their perceptions had morphed over just three days, and would continue to evolve after visiting the Slide Fire site the next day.

Still, the essence felt true: A forest does not lose its beauty simply because it has burned, and with enlightened eyes one can see not just what is gone, but the emerald green saplings that have grown.

A catalyst for new visions

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"Fires of Change" spurred the partnered organizations to get together over two years ago—even before the historic Yarnell Fire in June, 2013.

The wealth of knowledge exchanged between the art and science communities represents a greater challenge to come. The hope is this project will encourage societal exploration of fire, as well as consortia around the country to develop further options and programs to express science through an artistic aperture.

Barb Satink-Wolfson, Southwest Fire Science Consortium coordinator and NAU School of Forestry professor, said in a previous interview with the Daily Sun the idea stemmed

from a similar collaboration between the Alaska Fire Consortium and the University of Alaska Fairbanks.

The SWFSC is a neutral partnership with the Joint Fire Science Program, and connects managers, scientists and policy makers in the interest of education and collaboration.

With a grant from the JFSP secured, Satink-Wolfson and fire ecologist, NAU School of Forestry professor and Consortium Principal Investigator Andi Thode approached the Flagstaff Arts Council with their plan.

The SWFSC also involved NAU's Landscape Conservation Initiative to facilitate the North Rim workshop and connect with Grand Canyon fire managers.

"Fires of Change" will be next year's Festival of Science art exhibition, and will run from Sept. 4 through Oct. 31. In funding a project like this, the Arts Council receives support from Coconino County, including use of the County-owned Coconino Center for the Arts; from supporters, sponsors and the City of Flagstaff."

As of press time, two sponsors for "Fires of Change" have signed on—Full Circle Trade and Thrift and Freeman Huber Law—but more are anticipated in the coming months.

Additionally, Arts Council Executive Director John Tannous applied for and received a grant from the National Endowment for the Arts to assist the participating artists in "Fires of Change" with stipends for travel, work and material costs.

The impetus on the artistic side stemmed from the exemplary public reception of the 2012 "Beyond the Border" exhibition at CCA that Skabelund co-curated.

At the three-day Grand Canyon workshop, the fire managers and experts overseeing the workshop glossed over policy discussions and left some artists wondering.

Others like Skabelund wanted to hear more of the historical and cultural significance of fire exclusion and management. He listened to conversations in which the fire managers talked about funding streams and traced the parallel between Washington policymakers sending money to stanch immigration at the border and money allotted to the Fire Service to fight fire but not restore the forests.

"Throwing money and building the wall, just like we throw money into fighting fires instead of doing the necessary tasks that have to be done to get the forest so it's back to where it was before European-Americans arrived here," Skabelund said.

Post-fire ecosystems specialist and LCI associate Collin Haffey noted there is an upward trend in the federal government vying for fire on the landscape.

"The changes in policy and interpretation in the last couple years have been another major step that have tipped that arrow up in a big way," Haffey said.

Forestry 101

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For three days on the North Rim, artists were bombarded with a slew of fire-themed jargon managers and ecologists threw around like DAID ping pong balls at a wildfire. A host of National Park Service fire managers, Southwest Fire Science Consortium and Landscape Conservation Initiative coordinators helped set the record—and the lingo—straight.

Fire historically

A century ago, the forest composition of the Southwest looked much different. Fire was a natural part of the ecosystem and regularly rolled across the landscape burning up "litter"—downed logs, limbs and shed needles—consequently preventing massive, high-intensity wildfires.

European settlers of the area brought with them the idea fires should be put out—period. This practice of pure suppression subsequently caused an increase in fuel load, or burnable material on the forest floor. If the weather forecast includes hot and dry conditions, like during the pre-monsoonal season, one bolt of lightning or unabated campfire in an area with low fuel moisture could spell disaster. This is intensified during drought years.

This notion that "fire exclusion" is the answer turned out to be a serious problem overall. Ecologists are now seeing stands on the Colorado Plateau growing closer together, increasing the propensity for tall flames to reach the needled crowns. With the right weather conditions, this could incur a stand-replacement fire event, or when all the trees in an area burn to death.

Two types of fire, how to manage them

There are two types of fire: prescribed and wild. Wildfire can stem from either human or natural ignition sources.

Flagstaff is a city in the WUI, or Wildland Urban Interface, meaning it is surrounded by wilderness. Fire managers in this case have to consider smoke inhalation—which is why most prescribed burns last about three days—and fire's proximity to structures. They also must keep in mind the tools at their disposal.

The Coconino National Forest around Flagstaff is managed by the Forest Service. This agency typically takes a "pile and burn" approach when performing prescribed burns. A burn plan is developed, and with eventual approval, teams can head out into the

proposed burn site and assemble mechanically slashed heaps they will later ignite with drip torches. The Forest Service has a strict suppression policy for both types of wildfire.

The Kaibab Plateau, however, is partially managed by the Forest Service. The North Zone all the way to the Rim is managed by the NPS, and they operate in proposed wilderness. They are rarely approved to mechanically cut through the prospective burn area, nor do officials approve of mechanized thinning. Instead they mainly work with managing naturally caused wildfires by digging conclusive fire lines and burning with drip torches.

Ponderosa

It is also important to examine how ponderosa pines are adapted to fire.

Before the artists journeyed from the start at Coconino Center for the Arts to the forested North Rim, they received a crash course in Forestry 101 from NAU professor Pete Fulé. In the small forest behind Sechrist Elementary, he used a small increment borer tool to hand drill a core sample from a ponderosa about 170 years old. He explained the tree's thick bark shields its "blood flow" layer called the cambium, which transports nutrients, from extreme heat. If fire scorches roughly 70 percent of the needles, they still are able to photosynthesize enough nutrients to ensure survival.

But how different forest types burn is also a concern. Elevation and corresponding climate affects which trees grow. Ponderosa love the 6,500 to 8,000-foot range, and would naturally burn at low to medium intensity about every five years.

In the Kaibab, Robinson detailed how climate change is affecting fire ecology. The consensus is the global climate is trending to hot and dry. In addition to reintroducing fire back into the ecosystem, ecologists fear stand-replacement fires will become the norm.

Robinson explained the climate is getting hotter and drier, and if a stand-replacement fire destroys most pine and mixed conifer (blue spruce and white fir) forests, they may never replenish in the ecosystem.

"If we lose that overstory and we're only getting hotter and drier, what we're seeing in the southwest is we're starting to see our pinyon-juniper woodlands actually start to move up in elevation," he said. "That's where we start to talk about ecosystem-type changes…and why we have concerns about having too much of one type of fire."

These people dedicate their lives to constantly learning about forest ecology and implementing their growing knowledge for the betterment of resource management, Grand Canyon visitors' experiences and overall forest health on the Colorado Plateau and beyond.

The complex nature of fire ecology ultimately boils down to education and understanding of fire's necessity in restoring forest composition. Because, after all, the experts agree it's not a question of if the world's forests will burn, it's when.