

How Could California Benefit from the Newly Enacted “National Seed Strategy for Rehabilitation and Restoration”?

by David Gilpin, Pacific Coast Seed, and Bill Agnew, Agnew Environmental Consulting

In October 2015, California is in the midst of an epic fire season with hundreds of thousands of acres burned and many thousands of homes destroyed. The ravages of fire and the prospects of downstream impacts of excessive erosion loom and the threat of growing weed infestations weigh greatly on the minds of land managers and home owners alike. Events such as these highlight the reality that appropriate native seed is available from local and regional sources for hundreds but not thousands of acres. Consequently, habitat restoration designers and practitioners alike are challenged to find the right seed in the right place and time on a daily basis.

In September 2015, a National Seed Strategy for Rehabilitation and Restoration (www.blm.gov/ut/st/seedstrategy.html) was introduced by the federal government (BLM) to address the impacts of plant community disturbances by natural and man caused events. The Strategy is designed to provide a more coordinated approach among tribal, state, federal, local and

private entities, including commercial growers, to restoring plant communities. So given the unique challenges of native seed availability and the requirements for genetic integrity, how could the newly enacted “National Seed Strategy for Rehabilitation and Restoration” benefit the State of California and the residents in relation to large scale restoration and construction projects and fire related land disturbances. One must first look at the four goals of the National Seed Strategy in relation to the strategy’s mission of “ensuring the availability of genetically appropriate seed to restore viable and productive plant communities and sustainable ecosystems”.

The four goals and their objectives are as follows:

Goal 1: Identify seed needs and ensure the reliable availability of genetically appropriate seed

Access the seed needs of federal agencies and the capacity of private and federal producers

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Once the site of Leona Quarry, this East Bay hillside was transformed by a large-scale restoration project. Photo courtesy David Gilpin.



Salt River restoration was multiple agency effort that helped provide resources needed for seeding a large scale project. *Photo courtesy Dave Kenworthy.*

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Access the capacity and needs of tribes, states, private sector seed producers, nurseries and other partners

Increase the supply and reliable availability of genetically appropriate seed

Goal 2: Identify research needs and conduct research to provide genetically appropriate seed and to improve technology for native seed production and ecosystem restoration

Characterize genetic variation of restoration species to delineate seed zones and provide seed transfer guidelines for current and projected environmental conditions

Conduct species-specific research to provide seed technology, storage and production protocols for restoration species

Conduct research on plant establishment, species interactions and ecological restoration

Develop or modify monitoring techniques and investigate long term restoration impacts and outcomes

Goal 3: Develop tools that enable managers to make timely, informed seeding decisions for ecological restoration

To develop training programs for practitioners, producers and stakeholders on use of genetically appropriate seed for restoration

Develop native seed source availability data and tools for accessing the data

To integrate and develop science delivery tools to support restoration project development and implementation

Build on ecological assessments and disturbance data and provide training that will allow managers to anticipate needs and establish spatial-explicit contingency strategies

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Fire-related reclamation opportunities from the Butte Fire in Amador & Calaveras Counties, September 2015. Shown before the fire (left) and during (right). *Photos courtesy Gordon Long, Cal Fauna.*

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Goal 4: Develop strategies for internal and external communication. As presented, there are multiple objectives for each of the goals presented in the National Seed Strategy

External communication by conducting education and outreach through the Plant Conservation Alliance Network

Internal communication to distribute and implement the strategy across agencies and provide feedback mechanism

Report progress, recognize achievements and revise the strategy

The goals and objectives of the National Seed Strategy for Rehabilitation and Restoration are both broad reaching and detailed. Two of the primary questions that pertain to habitat restoration are: 1) will there be a benefit to the State of California? and 2) will this Strategy be able to provide a more coordinated approach to restoration, rehabilitation and stabilization within the state given its 5 year proposed timeframe (2015-2020) of implementation?

In the long term, the Strategy has hope in assisting those with plans for major restoration, large scale construction and fire stabilization. Government agencies are challenged to step up and acquire local source materials once that material is available in the market place. The Bureau of Land Management (BLM) via the Great Basin Initiative model currently has substantial annual seed buys with multiple acquisition contracts to numerous seed companies. Warehouse facilities located in Boise, ID, Ely, NV and Ephraim, UT are used to mix and store acquired seed. The warehouse storage space of the combined

facilities nears a capacity of 3 million pounds.

To compliment the BLM purchasing effort, the Utah Crop Improvement Association provides resources for blue and white tag certification and source identification verification. To date,

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A logging road heading into the Mokelumne River Canyon through a burned forest. The ravages of fire and the prospects of downstream impacts of excessive erosion and weed infestations weigh greatly on the minds of land managers and home owners alike. *Photo courtesy Gordon Long, Cal Fauna.*

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California agencies are individually active in specifying seed but do not have significant annual seed purchase programs for restoration and other uses. Some California based federal and state agencies are contracting directly with seed companies to target project direct production of their desired seed needs. If the National Seed Strategy is to reach its potential in California, the State of California and the federal agencies with want to partner with private industry, research institutions and professional groups to make this program a reality.


From calendar years 2002-2004, the California Crop Improvement Association supported a native field certification program. However, due to lack of support from seed growers and slow adoption by federal and state agencies and consumers, low revenue returns and overall lack of funding, the program was discontinued. Whatever the reasons for program failure, state and federal agencies in California backed away from supporting a consolidated effort for contracting native seed or reviving a seed certification program. The lack of support has contributed significantly to a native seed market that is fragmented at best. Currently, growers and customers have cobbled together primarily one-on-one relationships that end up building portfolios of accession and special collection items. Ultimately these activities are driven by contract production that promote the availability and use of profitable and popular items. With increased demand for local native seed, the time may be right for the California Crop Improvement Association to resurrect its "Native Field Certification Seed Program".

Additional research is needed to expand our knowledge of plant establishment and community diversity using key restoration species without compromising genetic integrity. On large scale seeding projects one must evaluate

the availability of local seed source collections and determine how close is close enough. Initially, each agency will have their own standards and thought processes regarding the use of various seed sources. However, an expanded view of staying native and utilizing non-source genetic materials may be necessary, under certain circumstances. The use of broader adapted natives may ensure you have the species and quantities needed to achieve your target restoration/rehabilitation goals.

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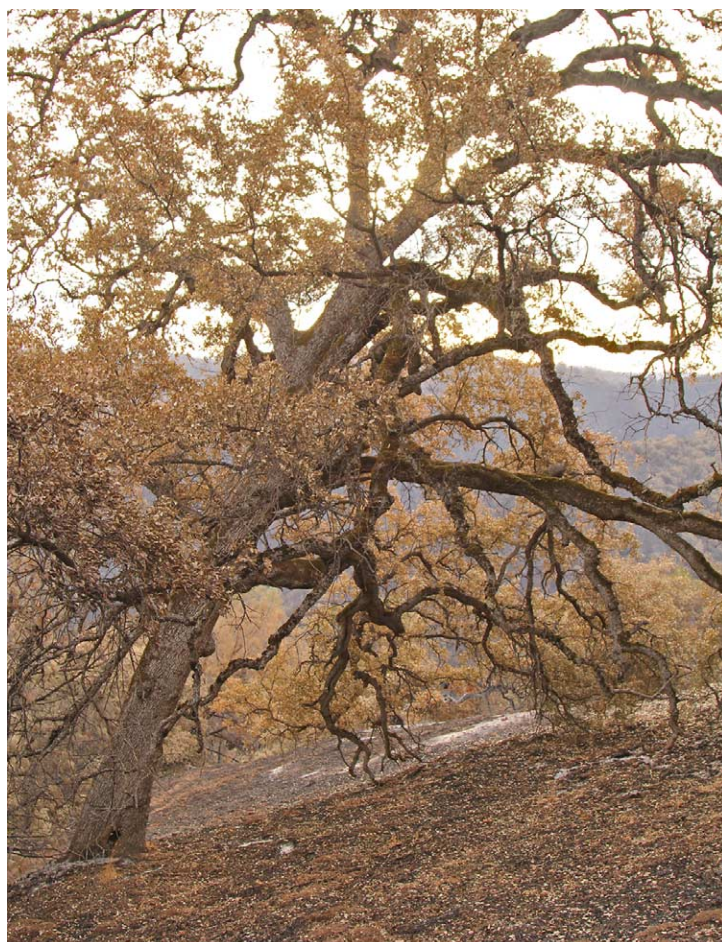
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The assessment of degraded soils and development of treatments, amendments and site preparation to enhance native seed germination and establishment is important to establishing a healthy community somewhat resistant to nonnative species. Sharing success stories and failed opportunities, by government and the private sector researchers and practitioners, is crucial to determine what is working and what is not successful.

Government coordination and funding to acquire seed sources is a great opportunity for the private sector seed grower and collector. However, before diving in there is a cautionary tale. More than two decades ago, the California native seed industry responded to the call for native seed by saying “If We Grow It They Will Come”. Those growers who followed that call were left unrewarded and unfortunately many are no longer in business.

For growers and seed suppliers the question remains, will agencies come together and agree to seed principles that will engage the private seed sector and lead to adequate supplies of plant materials for construction, restoration and large scale fire driven wildland seeding projects? If agreement can be achieved it is uncertain how the California seed industry will embrace the opportunity to work with a new generation of public agency representatives, restoration designers and private sector practitioners to build a California seed industry as envisioned by the National Seed Strategy?

Further, what role will the California Society for Ecological Restoration, California Native Grasslands Association, California Native Plant Society, California Invasive Plant Council and others play in this program's direction? The jury is still out but California seed growers and collectors are a resilient group and will adapt to the changing needs of their customers. The long term outlook for California and our nation is bright and will require that we all work together to make this Strategy a reality to ensure we can have available “The right seed in the right place at the right time”.



Additional research is needed to expand our knowledge of plant establishment and community diversity using key restoration species without compromising genetic integrity. *Photo courtesy Gordon Long, Cal Fauna.*

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