GRASSLANDS

The Newsletter of the California Native Grass Association May 1992

SEEDING AFTER WILDFIRES IN CALIFORNIA

by David Amme and Ted Adams

Human development in chaparral and other native plant communities increases the risk of destructive wildfires. The recent fire storm that devastated the Berkeley/Oakland hills is a tragic example of this trend. Fire is only one aspect of these tragedies. Accelerated erosion following wildfire can represent an additional threat to life and property. As a result, public agencies are under great pressure to seed burned areas as a solution to erosion prevention. There is a widely held belief that broadcast seeding of exotic annual grasses is necessary to reduce runoff and erosion. As scientists take a closer look at this practice, the growing body of evidence suggests that seeding exotic annual grasses after wildfires may have little effect on erosion and runoff in many situations especially in southern California where slope and soil instability is great and winter storms can be destructive (Gautier and Zedler 1982). Indeed, seeding with exotic annual grasses can have a long-term negative impact on native vegetation composition and structure (Conard *et al* 1991). This is not to say that seeding wildfire burn sites should not be done. There are physical and ecological reasons to seed burned and disturbed slopes after fire with appropriate grass and herbaceous plant species. For example, seeding can mitigate the damage to the riparian corridor and fishery habitat. Seeding has a positive impact on wildlife habitat and cover. Concentrating seeding efforts on physically disturbed ground such as bulldozed fire lines and access roads created by fire suppression activities is an important erosion control practice. While seeding may not arrest erosion the first season, there is evidence that second and third year sediment discharge is reduced. It is important to have clear objectives and keep in sight the relationship between short and long-term effects of seeding.

What are some of the pertinent facts related to seeding after fire?

- Seeds do not prevent erosion. Established plants with roots prevent erosion. Even the fastest annual grasses establish slowly when temperatures are low and poorly in the absence of early gentle rains. Intense early storms erode reseeded slopes at the same rate as unseeded slopes (Griffin 1982, Gautier and Zedler 1982).
- Watersheds lacking plant cover have higher sediment discharge, derived mainly from existing drainage channel materials and natural dry creep (dry ravel) of materials into these channels (Wakimoto 1979, Scott and Williams 1978, Rice 1973).
- Seeding does not cure poor infiltration rates related to lack of shrub, tree or debris cover and hydrophobic soil layers caused by the heat pulse of hot burns (Gautier and Zedler 1982).
- Heavy annual grass seeding suppresses the recovery of native vegetation including herbaceous fire-following annuals, woody perennials, and tree seedlings (Conard *et al* 1991, Griffin 1982, Gautier 1982, Conrad 1979). In wildland areas, natural annual and perennial plant regrowth provides equal or greater cover than seeded

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PRESIDENT'S MESSAGE

Ted Adams

Membership. The scope and influence CNGA will have on restoration activities is related to the number of its members. New members are being reqruited steadily, but not as rapidly as we would like. Both individually and as an organization, we need to work harder to attract people who will benefit from membership in CNGA.

Membership dues finance most of our activities. Our educational and technical programs depend on your support, and the strengh of these programs depends on a secure and growing financial base.

Newsletter. Grasslands is CNGA's major educational product. It keeps members informed about current events, highlights technical activities, presents in-depth reviews, and provides a forum for dialogue and the exchange of ideas. The newsletter is considered a valuable publication and is favorably received by a wide readership. But it cannot survive on its reputation alone! Grasslands needs input! All members with information on native grasses they would like to share, regardless of the source, are urged to send contributions to the editor; use the CNGA address for your submissions.

May Conference and Workshops. The planning committee for the Elkhorn Ranch Conference has put together an outstanding program for this May 16 event. Emphasized will be restoration and integrating native grasses in the urban landscape. David Packard, Chairman of the Hewlett-Packard Corporation and owner of Elkhorn Ranch, will be the keynote speaker. Mr. Packard has a deep concern for the environment and is sponsoring restoration projects.

The conference is a major educational

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PRESIDENT'S MESSAGE

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event organized for CNGA members. All are urged to attend.

David Amme has worked closely with other CNGA members to develop two important educational programs for our members in southern California. Revegetation After Fire in Southern California is scheduled May 8 and will begin at the Arcadia Library, Arcadia. Revegetation rationale, problems and opportunities and research will be addressed in the morning. This will be followed by a field review of demonstration plots in the afternoon.

The second of the two programs, Native Grass Identification Workshop for Southern California, will be a two-day event, May 9-10, and include work with plant material in a classroom setting and in the field. The Saturday session will beheld at the Rancho Santa Ana Botanic Garden in Claremont. On Sunday, attendees will visit the Nature Conservancy's Santa Rosa Plateau.

California Grass Gardens Project. Under the able direction of Dave Amme, perennial grass gardens have been established at 8 sites around the state. This represents a major CNGA effort. It is the beginning of a technical program to assess phenological differences within species, adaptation of ecotypes and relative performance of species at each site. These gardens also fill an important educational need; CNGA members and others now have organized plantings of important perennial grasses for examination and review.

CNGA Brochure. Phil Hogan has been coordinating revision of our brochure. Comments have been submitted to the Board of Directors who will develope the final product. The new brochure should be available soon.

Fall Annual Meeting. The general membershil meeting November 13 in Sacramento will emphasize general principles that must be considered when collecting, testing, and selecting perennial grasses for restoration programs. The keynote address will cover the influence of species status, genetic diversity, potential for hybrid creation, ethics of gene pool multiplication, constraints of working on public versus private lands, and other consideration. Additional presentations will include case studies covering the principles and how seed is brought to market once a genotype is selected. Other speakers will address a range of subjects:

* the Grass Gardens Project,
* perennial grass production and establishment,
* perennial grasses on rangeland, and
* restoration projects.

Displays of all kinds will be featured, from volunteer poster papers to commercial exhibits. This meeting at the Holiday Inn - Northwest, Sacramento, will be a "must" for all members.

The planning committee for the November meeting needs help. Members in the Sacramento area who want to be involved contact me at (916) 752-3457.

Tax Exempt Status. The Franchise Tax Board has granted CNGA exemption from franchise and income tax. Now, we await exemption by IRS which should be granted within the next 9 months.

We are currently ineligible for direct tax-deductible donations. However, there is a procedure whereby persons wishing to make such deductible donations can insure that financial support reaches CNGA. Interested persons can contact me for details.

SEEDING AFTER WILDFIRES

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annual grasses (Nadkarni and Odion 1986). • Seeding large areas is expensive and results are often erratic (Hammond 1977).

• The seeding rate is important. Four to eight pounds per acre has little effect on runoff or erosion . Cover established by using seeding rates of forty pounds per acre and above will under ideal conditions mitigate an intense storm later in the rainy season. Seeding rates with annual grasses however, can suppress the regeneration of native plants or even "type convert" a native plant community (Schultz *et al* 1955).

• A successful seeded stand of annual grasses, especially Italian ryegrass (*Lolium multiflorum*) results in dry flashy fuels that can carry an injurious fire the next year following the first seeding (Griffin 1982).

• Annual grass seeding fosters large rodent populations that result in heavy native plant browsing and predation (Griffin 1982).

Exotic annual grasses are not the only type of seed available for reseeding activities. Fast growing native perennial grasses such as Cucamonga brome (*Bromus arizonicus*), California brome (*B. carinatus*), blue wildrye (*Elymus glaucus*), and meadow barley (*Hordeum brachyantherum*) represent native plant materials available to help battle erosion. This year, seed of California brome and blue wildrye produced from collections made in the Berkeley/Oakland hills was seeded on the firestorm site. (Editors note: The results of the seeding effort in the Berkeley/Oakland hills will be reported in future issues of *Grasslands*.)

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CNGA Research and Development Committee Report

Name Change

At the last meeting of the CNGA Technology Committee there was a consensus of agreement to change the name of the committee to Research and Development Committee. John Menke, professor of Agronomy and Range Science at U.C. Davis has agreed to take over the chairmanship of the committee. David Amme will continue on as Technical Manager to complete and publish the 1992 Grass Gardens project.

The California Grass Gardens Project

For the present until funds for a comprehensive Common Garden Program are obtained through donations or grants, the program will be titled the California Grass Gardens Project. The goal of the CNGA Grass Gardens Project is to grow native grasses in controlled garden plots in many different climatic and edaphic locations to evaluate phenotypic similarities and differences. Important objectives include: 1) determining the range of adaptability of species varieties (broad vs. narrow ecological niche), 2) characterizing growth rate, habit, phenology, net primary production, and seed production, and 3) summarizing information on species diversity.

Eight grass gardens have been planted including 3 demonstration gardens and 5 official CNGA grass gardens. The first garden was planted at the U.C. Davis Student Farm on February 1st. This garden is a demonstration garden managed in cooperation with Craig Thomsen, U.C. Extensions Specialist. Three gardens were planted in southern California the following week. A small demonstration garden was planted at Rancho Santa Ana Botanic Garden in Claremont. Near San Juan Capistrano a small CNGA grass garden was planted at the Tree of Life Nursery. This garden included only 3 to 6 plants of each accession. A large eighth-acre CNGA grass garden was planted at the S & S Seeds' demonstration garden near Los Alamos, California north of Santa Barbara. At this time the winter rains delayed the planting of the CNGA gardens in the north. Plants were delivered to Elkhorn Ranch near Monterey for a small demonstration garden. Paul Kephart has since planted and added several plant accessions to this garden. On February 27th an eighth-acre CNGA grass garden was planted at John Anderson's Hedgerow Farms. This garden has the most complete CNGA Stipa collection and John donated several more Stipa accessions. A quarter-acre CNGA grass garden plot was set aside at the Soil Conservation Service, Lockeford Plant Materials Center and a section of the plot was planted on March 4th. Finally, on April 1st the last CNGA grass garden was planted at the ConservaSeed R & D field at Holland Ranch near Rio Vista.

S & S Seeds donates $ 3000 to the Grass Gardens Project

Vic Schaff, president of S & S Seeds in Carpenteria donated $ 3000 to the CNGA Grass Gardens Project. This money came just in time and has enabled CNGA to plant all the gardens. Until CNGA gets final approval for its non-profit status any funds donated to this project should be donated through The Nature Conservancy's California Grassland Research Fund. Contact Oren Pollak at TNC's San Francisco office.

Cooperative Grass Garden Agreement

CNGA has an official agreement with the Soil Conservation Service that covers research and development goals shared by both organizations. Similarly, there is a need for CNGA to have agreements with each of the cooperative grass garden members. At the last meeting of the Research and Development Committee the committee members and attending cooperators agreed in principle to four points that should be included in a cooperative agreement:

1. The use of the ground is to be donated to CNGA or rented by CNGA for a set period of time (3-5 years).
2. All plants and seed produced belong to CNGA.
3. The plots are to be weeded and maintained by the cooperator. Funds spent by the cooperator in labor and materials on the CNGA plots can be a tax deductible donation to CNGA.
4. Seed will be harvested and distributed at the discretion of CNGA.

NATIVE PERENNIAL GRASS REVEGETAION USING CATTLE TRAMPLING AND GRAZING AS TOOLS TO ASSIST ESTABLISHMENT

Cini Brown
UC Davis

A pilot study designed to test the effectiveness of using cattle trampling and grazing as tools to encourage native perennial grass establishment is being conducted on the Inks Creek Ranch in Tehama County. The site is characterized by shallow, rocky soils and the primary vegetation is blue oak woodland and annual grassland.

Initially, the experiment used two phases of cattle trampling to achieve sufficient seed-soil contact for germination without mechanical methods. In the first phase, cattle were fed mineral salts in buckets to obtain severe disturbance of the soil surface. The minerals were moved daily to new locations in the experimental plots to distribute the disturbance as evenly as possible. This was intended to prepare the soil to receive the seed as tillage would. Next, the seed of four native grasses, Aristida hamulosa, Sitanion jubatum, Stipa cernua and Stipa pulchra was sprinkled onto the soil surface. The species were sown in separate plots at a rate of 200 seeds per square meter, comparable to rates used in range drill seedings. Plots of Stipa pulchra were also sown at a high density of 2,000 seeds per square meter. Cattle were then herded over the experimental area to trample the seeds into the soil. After completing the trampling, seedling plugs of Aristida hamulosa, Sitanion jubatum, Stipa cernua and Stipa pulchra were planted into separate plots. This was done to ensure that there will be plants on which to measure the effect of grazing, in the case that germination is poor. Also, the plugs provide samples to aid identification of seedlings during monitoring.

Grazing will be conducted in order to reduce the competition from annual plants for light, water and nutrients. The grazing will be timed to defoliate the annuals when they are in the boot stage, i.e. when they are committed to reproduction and will not be able to recover significantly. This should be before the perennial grasses reach the boot stage. The grazing treatments will include short-term high intensity and short-term low intensity. There will also be a control which is not grazed.

To date, only preliminary monitoring has been conducted and the grazing treatments have not yet been applied. Updates will be provided as more information becomes available.

LETTER TO THE EDITOR

Dear Grasslands Editor:

I enjoyed reading the interesting comments by Mr. Graig Dremann in reference to my earlier letter on grazing ecology. I wish I could agree with his remarks—it would be so easy to take the polarizing view that livestock grazing per se is bad, so let's be done with it! However, this is not an easy subject, but a highly complex one. Somewhere through all that complexity I hope the currently polarized sides may meet, recognize long-lost allies, and work together.

Meanwhile, I fear my positions have been wrongly interpreted to be on the far end of the polar spectrum. Just for the record, I am not a member of a ranching family, and I have never been employed by ranchers. I have come to my positions through my own observations and research. I began as a hater of cattle; it took fifteen years to transform that view. At this point I feel my ideas are middle-of-the-road (with paleontological overtones): but that does not mean they are not controversial. I believe, for example, that livestock should only be welcomed on public land if they are being managed to promote native biodiversity.

Too much emphasis is being placed on one paper on Rancho LaBrea dentitions (Akersten et al (1988), which concluded not that the late Pleistocene Californian megafauna included only browsers, but that paleontologists need to be careful in their assignments of dietary preferences to various megafaunal taxa. The most prevalent view among paleontologists, viewing all the evidence, is that the megafauna did plenty of browsing and plenty of grazing. Grazing is what hypsodont horses are made for, for example, and the California native ones are as hypsodont as any of their genus anywhere, anytime. They are found in fossil locality after locality in the late Pleistocene of the Bay Area. People who are against livestock to begin with seem eager to seize any piece of evidence they can find to argue that the Pleistocene megafauna did not graze in any significant way.

Elk in the California Holocene migrated in herds of thousands of animals. They grazed. Why do so many people think they had no significant impact on grassland?

I do not agree that a "pound-for-pound substitution of cattle for the native herbivores" was ever made. No one knows how many native herbivores there were. In any case, the main problem is not biomass, but timing. Nevertheless, I suspect that the timing would be much easier to manage if there were far fewer livestock overall in the state—and that would mean changing our meat-centered diets.

I too have been surveying roadcuts—as well as adjacent pastures. It is critical to avoid oversimplification, assuming that grazing vs. exclusion is the only significant factor along fencelines. There is a multiplicity of factors that go into bunchgrass distribution, and no one has sorted them out. I attempted to begin doing so in a recent Fremontia article (January 1992). I too have seen many roadcuts with good native grass stands between them and the pasture fence. I think Mr. Dremann's analysis is correct for some of them, but wrong for many. The main fault

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NATIVE CALIFORNIA PERENNIAL GRASSES FOR THE HOME GARDEN

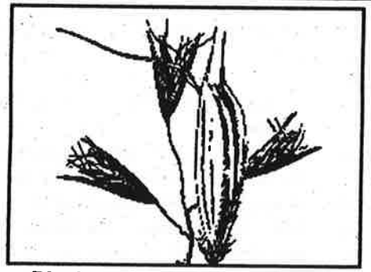
Ornamental grasses are in! They're already fashionable on the east coast, and are just beginning to appear in western gardens. Most species available today are non-native; however California has a wonderful variety of landscape-worthy grasses.

The grasses on page 5 are a sampler of native bunchgrasses for the garden. Bunchgrasses are distinguished from creeping grasses (the turf grasses) by their clumping habit. They are perennial, have deep fibrous root systems (which help curb erosion), and come in many sizes, from tight mounds barely 3" high to more statuesque species reaching 5' or more.

Why grow bunchgrasses? Because they are beautiful, of course! There is probably a species for every type of garden condition, be it sun, shade, dry or moist. They lend themselves to many different garden styles, from formal to informal. Whether used to replace a thirsty lawn, mixed in a perennial border, or sited as a striking accent, grasses bring wonderful textures and movement to any garden. Foliage comes in many shades of green, gray, blue, and even reddish tones. Their flower stalks are often very handsome and can be used in flower arranging. Their appearance changes through the seasons, often turning subtle earthy colors as they dry. Grasses are important for wildlife; many birds use them for food and shelter.

Thanks to Santa Barbara Botanic Garden for permission to use material from Informational Bulletin #9.

For the complete bulletin call Carol Bornstein, Director of Horiculture at Santa Barbara Botanic Garden.



Techniques and Initial Results of a Seeding Trial With Ten Species of Native Grasses On Corning Gravelly Loam Soils

John H. Anderson

The soils of much of the acreage of the low foothills on the West side of the Sacramento Valley is of the Corning gravelly loam type. The rating for these soils is typically class 4-6 . A large portion of this ground has traditionally been dry land grain farmed in a two or three year rotation with grazing in between. Grain productivity on these soils is marginal at best and currently much of the ground that qualifies is in the Conservation Reserve Program (CRP) which leaves it fallow and ungrazed for a 10 year period. In Yolo County alone there are in excess of 20,000 acres in this program.

The native flora of these soils was composed in part and probably dominated by a complex of perennial grasses. Grain farming plus the introduction of non native annuals eliminated the perennial grasses long ago. Restoring the native prairie complex may be the best sustainable management of this land. The purpose of this project is to develop and test the techniques of California native prairie restoration and. more specifically on the Corning gravelly loam soils. The purpose of this report is to describe the techniques utilized and provide preliminary results.

The site is approximately 30 acres located 6 miles North of Winters at the edge of the interface of the foothills and the Valley floor. Slope, exposure, and quality of the soil is variable throughout. Farming history over the past 20 years has been the typical grain/grazing rotation. Over the past 5 years the ground has been kept fallow. The dominant grass species on the site prior to treatment were wild oat, ripgut brome, foxtail barley and in some areas annual fescue. Broadleaf weeds present were star thistle in many areas, mustard, radish, filaree, and a host of other forbs both native and non native.

The site was prepared by burning, disking, and floating (smoothing out with a box scraper) in fall 1990. In April 1991 the majority of the site was treated with either glyphosate/2, 4 -D mixture or Poast/2, 4 - DB. The latter treatment was used to assess the ability to selectively preserve the native lupine and brodea flora. A small area was left untreated. Grass weeds were well controlled in both treatments with the exception of annual fescue which was not supressed in the Poast/2, 4- DB treated area. Star thistle was also a significant problem in this treatment area. The areas of heavy star thistle growth were mowed during the summer. Areas not treated with herbicide were burned just prior to seeding. An additional herbicide application of glyphosphate was applied on two-thirds of the site in the middle of January just prior to the emergence of the planted grasses. The first germinating rains were in late December.

Because of late winter rains, seeding was delayed until late December and January. Seeding was performed with a Truax 10 ft. native grass drill which in this situation performed as a no till drill. Grass species were planted separately on 16 inch centers. The separate planting design was to eliminate interspecific competition as well as to be able to evaluate success of establishment. Six species of grass could be planted at the same time with the drill. Once the drill was loaded with a specific complex of species, it was run in parallel patterns on the site in order to cover all slopes and soil conditions.

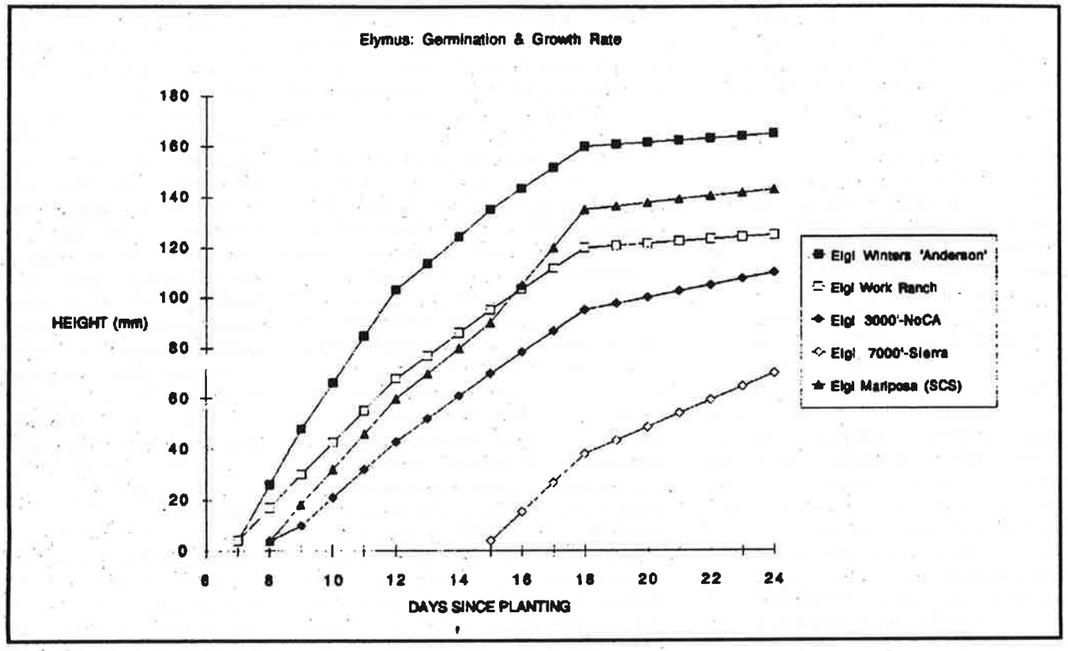
Ten species of native grasses are being tested (Table 1). The species selected were based on our knowledge of what probably occurred at or near this site. Site specific varieties were not available at this time. Because of limited seed availability on many of the species, the amount of ground planted to each species was variable, but each species was tested on all of the site variables i.e. slope, exposure, shallow hardpan areas, deeper topsoils, herbicide treatments, etc.

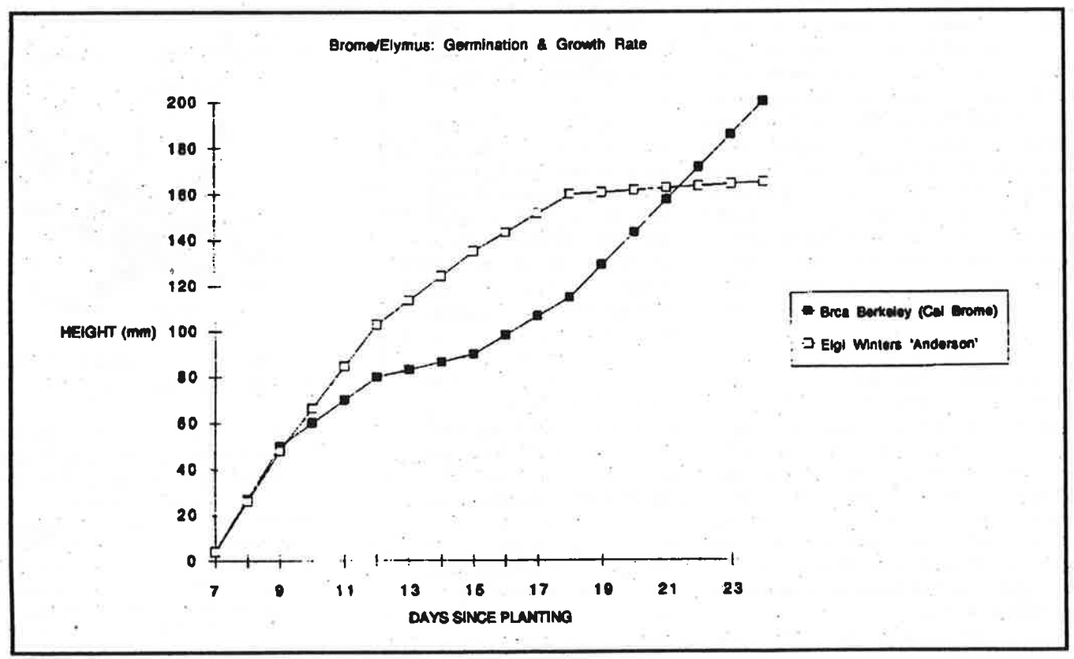
Conditions this winter have been excellent for germination and establishment. Preliminary evaluation as of April 10 demonstrate excellent initial establishment of all the cool season species (9 of the 10) in the non-weedy sites examined. Additionally, herbicide weed control has clearly demonstrated its effectiveness in aiding establishment. Areas that received no treatment or partial treatment of herbicide clearly show decreased vigor of the planted grasses, however this is an initial subjective observation and the final results cannot adequately be defined until later in the season and next year. An incidental observation of significance is the presence of toad rush, Juncus bufonius , in many of the herbicide treated and untreated areas. The density of this species corresponds to the wetter, shallower soils and where it is lush it is difficult to find native grass seedlings.

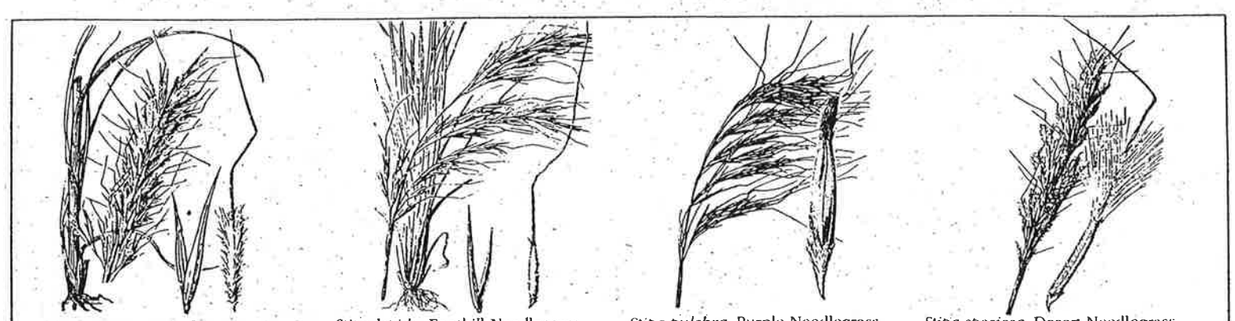
We are very encouraged with the initial results of this trial. On most of the site we used the maximum of intensive farming techniques to insure success and it appears to be working. Management will also be intensive over the next two years at least. Weeds will continue to be a problem until the seed bank is depleted and the perennials become established. Mowing, grazing, burning and herbicide trials will all be incorporated. Also to be mentioned is our intention to maintain and enhance the native forb diversity. Selection of herbicides, timing of applications, and spot spraying of problem areas along with mowing, grazing, and burning are the techniques to be used to reach the desired result of a sustainable natural biodiversity.

Acknowledgments: A special note of thanks to Scott Stewart of Conservaseed who donated a significant portion of the seed for this trial, to Pheasants Forever for partial funding, and to John and Jennifer Menke for help in planting.

CURRENT CNGA RESEARCH
GERMINATION AND GROWTH RATE







NAME	HEIGHT (feet)	LEAF COLOR	BLOOM	LIGHT	WATER	SOIL	GROWTH SEASON	NATURAL HABITAT/ PLANT COMMUNITY
Stipa coronata var. *depauperata*	1 - 2	GyG	Sp, S	Sun	DT	L	C, W	dry rocky slopes, Pinyon-Juniper Woodland Yellow Pine Forest, desert slopes, etc.
• *Stipa lepida* Foothill Needlegrass	2 - 3	G	Sp	Sun; Shade	DT	L, H	C	dry slopes, Chaparral, Coastal Sage Scrub, etc.
• *Stipa pulchra* Purple Needlegrass	2 - 3	G	Sp	Sun	DT	L, H	C	dry slopes; Chaparral, Coastal Sage Scrub, etc.
• *Stipa speciosa* Desert Needlegrass	1 - 2	G	Sp-S	Sun	DT	L	W	dry rocky places; deserts & occasionally Chaparral

KEY CODE

LEAF COLOR: **G** - green **GyG** - gray-green **Gy** - gray **BG** - blue-green

LIGHT REQUIREMENT:
Sun - full sun or western exposure
Shade - filtered sun or eastern exposure, plant does not require direct sun

WATER:
DT - drought tolerant: once, established, plant requires no supplemental watering. However, plant will look better with deep watering about once a month during dry periods.

SW - some water: plant requires occasional, deep watering during dry spells,i.e.monthly

RW - regular water: plant should be watered thoroughly as soil begins to dry

SOIL TEXTURE:
L - light: larger-sized particles (sandy); therefore water holding capacity is low and drainage is rapid
H - heavy: smaller-sized particles (clayey); therefore water holding capacity is high and drainage is slow

GROWTH SEASON:
(based upon observations at the Santa Barbara Botanic Garden)
C - cool season: grows during late fall, winter, and early spring
W - warm season: grows during late spring, summer, and early fall

* *Grows naturally in Santa Barbara County*

Selected References for
Native California Perennial Grasses for the Home Garden

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Illustrations reprinted with permission from Abrams and Ferris, *Illustrated Flora of the Pacific States*, Four Volumes, Stanford University Press 1923. Volume I: *Aristida wrightii, Calamagrostis nutkaensis, Elymus cinereus, Elymus glaucus, Festuca californica, Festuca idahoensis, Festuca occidentalis, Stipa coronata, Stipa lepida*.

All other illustrations reprinted from Hitchock's *Manual of the Grasses of the United States*, United States Government Printing Office, 1950.

Carol Bornstein, Director of Horticulture
November, 1990
Santa Barbara Botanic Garden

NEWS BRIEFS & TRENDS

Agenda CNGA November 13/20 Meeting
Using Native Perennial Grasses in California: Genetic Reality

Convene at 9:00 a.m.

45 Min. I. General Principles of Collecting, Testing, and Selecting (What Must Be Considered) - Cal Qualset, Chairman, Dept. of Agronomy & Range Science, UCD
- A. Geographic Range
- B. Population Sizes - Isolated/Continuous
- C. Genetic Diversity
  1. Within Species
  2. Within Populations
- D. Concerns About Related Species
- E. Mating Systems/Hybrid Potential
- F. Status of Species - Abundant/Rare
- G. Potential Seed Production Problems
- H. Ethics of Gene Pool Multiplication (zonation) - Potential for Contamination of Natural Populations
  1. Expand a Given Population?
  2. Maintain Existing Populations

45 Min. II. A Case Study: Agropyron spp. - Doug Dewey, Geneticist, ARS, Utah State University

45 Min. III. Bringing See to Market - Bob Ball, Cal Crop, UCD
- A. Cooperation with Farmers and Landowners
- B. Certification/Registration - Bringing a Cultivar On-line
- C. Maintenance of Foundation Seed
- D. Government Regulation

15 Min. Break

30 Min. IV. CNGA Annual Report - Adams

90 Min. Lunch

30 Min. V. CNGA Grass Gardens - Amme

30 Min. VI. Establishing Perennial Grasses - Anderson

30 Min. VII. Production of Native Grasses - Schaff

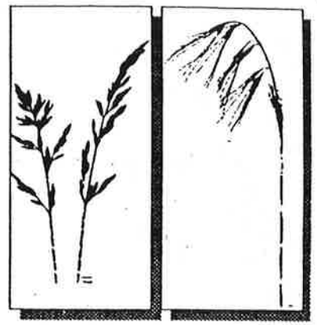
30 Min. VIII. Restoration: The West Davis Pond Project - Kaplow

Adjourn at 3:30 p.m.

THE CALIFORNIA NATIVE GRASS ASSOCIATION
presents two Southern California Workshops

May 8 , 1992
Revegetation After Fire in Southern California
Arcadia Library, Arcadia

May 9-10, 1992
Native Grass Identification Workshop for Southern California
Rancho Santa Ana Botanic Garden, Claremont



RESTORING THE LAND:

THE NATIVE GRASS CONNECTION

THE CALIFORNIA NATIVE GRASS ASSOCIATION

MAY 16, 1992

Elkhorn Ranch
Moss Landing, CA

C. N. G. A. DEVELOP • PROMOTE • RESTORE

Letter to the Editor - continued

I find with his analysis is that the bunchgrasses outside the fence are usually not being protected from livestock grazing, but from mismanagement. Nearly all livestock pastures in the Bay Area have been badly overgrazed.

Outside the pasture fence the conditions for native grasses are typically terrible—as a result of uncontrolled competition from exotics—or grassland may simply be eliminated by brush encroachment. On the other hand, conditions for native grasses outside the pasture fence are indeed often good—especially if this zone is within or adjacent to brush or trees, or on thin or unproductive soils, etc. I have attempted to detail some of these factors in my Fremontia article; but all of us certainly still have a great deal to learn on this subject.

There are grazed pastures throughout the Bay Arrea that include rich, dense stands of native bunchgrasses. A balanced view needs to take these into account.

Removing livestock from ruined grasslands does not normally bring back native grasses.

In excluded open grasslands on relatively productive soils, typically the native grasses (especially Stipa) are focused on rock outcrops or roadcuts, or in the margins of compacted trails or roadbeds, to escape competition. If we really want broad open spaces of rich native grassland, we had better learn how to use livestock correctly. I firmly believe the way to achieve this is for ecologists, native-plant enthusiasts, managers, and ranchers all to work together. Isn't that what CNGA is all about?

Stephen W. Edwards
Museum of Paleontology
University of California
Berkeley, CA 94720
24/V/92

New Board

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regular	$35.00/yr.
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life	$350.00/yr.
corporate	$500.00/yr.
associate	$100.00/yr.

To support CNGA in its efforts to Develop, Promote, and Restore, I am enclosing a donation of $_____
Donations are tax deductible to the extent allowed under federal and state law.

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