Native Plant Society of New Mexico

NATIVE PLANT SOCIETY OF NEW MEXICO NEWSLETTER

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Special Native Plant Gardening Issue

LANDSCAPE ECOLOGY: THE GARDEN PATH TO SUSTAINABLE LIVING SPACES

By Judith Phillips

Our daily activities effect the world around us like ripples in a pond. That analogy is particularly apt in the desert southwest, where water is a precious resource. Developing an environmentally appropriate landscape begins with a thoughtful assessment of the site, how you will use it, and your relationship to the larger ecosystem surrounding you. Long and leisurely walks through nearby natural areas are the best preparation for planning such a landscape. Having evolved over time in response to environmental pressures, local native plant communities are made up of a core of co-dominant trees and shrubs, wildflowers and grasses. Translated to the garden, the trees and shrubs provide a basic framework, are the walls and ceiling, enhanced by drifts of wildflowers for seasonal color, and grasses as textural gracenotes that become the carpeting.

When building on a previously undisturbed site, preserve as much of the native cover as possible. This may involve a battle of wills with the developer and contractors. A clause in the contract requiring reimbursement for all unnecessary site disturbance may provide incentive where environmental awareness is lacking. Having time to live on the site and learn its peculiarities before making landscaping decisions gives you a better perspective for making those choices. Erosion is minimized, and the invasion of tumbleweeds and other noxious colonizers of disturbed soil is, if not entirely avoided, at least kept to a manageable level. If you have inherited disturbance-caused weed problems with your site, expect to invest some time in reversing the damage as you work toward rebalancing the ecology.

To develop a functional plan, consider the physical characteristics of the site and your needs as its occupants. Work with the site, using exposure to sun and wind and existing contours to your advantage as you work to moderate the climate, stabilize the soil, and channel runoff to supplement plantings. Consider views, your need for privacy, and traffic patterns on the site to develop outdoor living spaces open to our amazing panoramas, but shaded in summer, and protected from wind.

Consider also your position in the surrounding ecosystem and the effect of your landscape on wildlife. As human development encroaches on habitat areas, your landscape can help mitigate losses by serving as a link in the network of greenspaces supportive of wildlife.

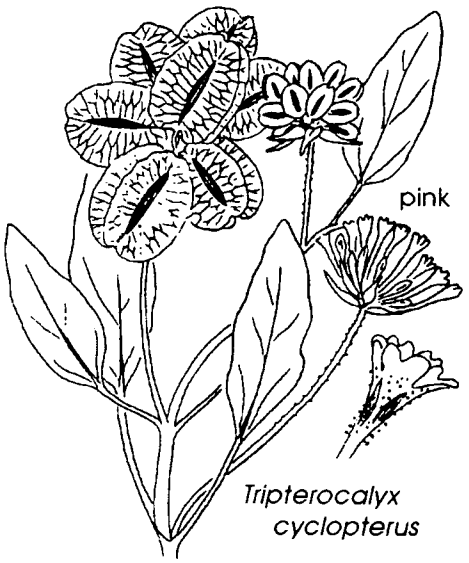
Reconsider the lawn as a basis for landscaping. Manicured lawns originated in England where the wet climate and heavy soil can easily sustain them, and at a time when maintenance labor was a bargain. Traditional lawns use more water and resources per square foot than any other type of landscape planting. Closely mowed turf also has little wildlife value. Limit such lawns to areas where they serve a clear purpose, such as play areas or patio extensions. Amend the soil to increase its water holding capacity. Since most cool season grasses, the traditional lawn species, are not deeply rooted compared with dryland natives, most of the potential root zone can be improved by tilling four or more inches of compost into the soil to a depth of 8 inches before seeding or sodding. Consider substituting more heat and drought tolerant native grasses in large areas, or use porous paved pathways bordered by groundcovers and shrubs, partly shaded by trees, in place of lawns.

Select plants well-adapted to the site and their purpose in the landscape. In this climate, the majority of the plants should

Inside.....

be drought tolerant. Climate adapted plants, especially natives, require no soil amendments at planting time or fertilizer once established. Peat moss, manure or compost added to the backfill when transplanting can have a containerizing effect on plant roots, alter the way water moves through the soil and limit the rooting of plants to the amended soil, making the plants less self-sufficient. Heavy clay soils require amendment of 70% sand or organic matter by volume to have any real effect. Adding smaller amounts of sand to clay results in a material more suitable for making adobe bricks than for planting anything, native or not. Selecting plants that adapt well to clay soils is a more reasonable approach, although it limits the plant palette somewhat. Ecologically, the suitability of the plants to the site is more important than their aesthetic quality, but most of us garden at least partially to fulfill a creative need, to participate in the creation of a place of beauty. The key to effective plant selection is balancing the desire for beauty with the realities of the site.

Group plants in communities according to their water needs and their function in the garden. The wettest zones may be oases surrounding the buildings and other high traffic areas, where the water used to maintain the garden also has a cooling effect on living spaces. An oasis is most effective in contrast to the arid



Tripterocalyx cyclopterus

The **Newsletter** is published six times per year by the New Mexico Native Plant Society. The Society is composed of professional and amateur botanists and others with an interest in the flora of New Mexico. Articles from the Newsletter may be reprinted if fully cited to author and attributed to the Newsletter.

Membership in the Native Plant Society of New Mexico is open to anyone supporting our goals. We are dedicated to promoting a greater appreciation of native plants and their environment, and to the preservation of endangered species. Members benefit from chapter meetings, field trips, publications, plant and seed exchanges and a wide selection of books available at discount.

We also encourage the use of suitable native plants in landscaping to preserve the state's unique character and as a water conservation measure.

We maintain a register of business and professional people who are members and can supply information and services related to native plants. To be added to this roster or to request information, contact the Membership Secretary.

Schedule of Membership Fees
Dues are $10.00 annually for individuals or families. "Friends of the Society" include organizations, businesses, and individuals, whose dues of $25.00 or more provide support for long range goals. To join us, send your dues to Membership Secretary, 443 Live Oak Loop, NE, Albuquerque, NM 87122

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climate it moderates. Use more drought tolerant plants as a buffer and transition zone between the wetter zones and the desert, be it our high plains grassland or the asphalt desert of urban evolution. The transition zone may be a dry streambed where extra water is available periodically, harvested from adjacent roof and paved surfaces.

Such a streambed may also serve as a meandering pathway through the garden. The driest zone meshes with the surrounding ecosystem on suburban or rural sites. In urban areas, dry zones may be the harshest microclimates such as parking strips and street medians.

Irrigate efficiently. In the garden, plants use more water than in the wild. Plants are often planted more closely than they occur naturally, increasing the competition for moisture. Dryland grasses planted as lawn areas must support foot traffic as well as increased competiton. Prolonging bloom cycles and maintaining leaf density also require consistent moisture. To minimize weed growth, limit watering to planting zones, and as specifically as possible, to the individual plants. When extensive soil disturbance is unavoidable, as in cultivating to sow native grasses or wildflower meadows, till and water repeatedly to germinate and destroy as much weed seed as possible before sowing the intended cover. This will reduce weed competition substantially. Deep mulching trees and shrubs stifles weed growth and speeds the establishment of new transplants by moderating soil temperatures and reducing moisture loss. Fiber mulches such as shredded bark and straw are cooler than gravel. Some heat-lovlng plants, especially those sensitive to overwatering, grow better in gravel mulches. The most effective depth of mulch varies from 2 inches around low-spreading herbaceous plants, to 3 or 4 inches under trees and shrubs, to 6 inches compacted for pathways. Air and water permeable weed barrier fabrics may be used under mulches to further reduce weed problems. The specific water requirements of plants vary with the seasons and with their stage of development in the landscape. New transplants require consistent moisture in order to develop the extensive root systems essential for later drought tolerance. The length of time it takes for plants to become well-established also varies. Generally, the better adapted the plant is to the site, the faster it will find its niche in the community. All plants use proportionately more water during hot weather and when flowering. Although evergreens require some winter moisture, avoid keeping arid land natives, especially the heat lovers, too wet when air and soil temperatures are low.

Allow space for plants to attain their mature sizes without "shrink-to fit" pruning. Thinning plants to enhance their natural forms is an interesting way to learn about the growth patterns of individual plants. Shearing creates artificial looking tortured forms, and guarantees your next appointment with the shears. Never remove more than a quarter of the plant's mass at any one time, and remove the suckers from tree-form plants in early summer to limit the amount of regrowth. Landscapes that are planned with long term objectives in mind will look underplanted the first season or two. Using wildflowers as short term fillers creates interest without creating subsequent maintenance problems. Mulches also give a new planting a more finished look.

As part of the design process, develop a management plan based upon the time and resources you consider reasonable to maintain the landscape. Be realistic. Well timed mowing, fertilizing, pruning, pest control and weeding assure that the landscape will develop as intended. With careful planning it is possible to have a landscape that ages gracefully, and requires little more than periodic deep watering and seasonal clean up. Avoid excesses. Too much water and fertilizer can result in abundant soft growth more susceptible to insect attack. An ounce of timerelease fertilizer per bushel of backfill when planting in spring or early summer, and small amounts of calcium nitrate (1 tablespoon per 1 gallon size plant, 2 tablespoons per 3 or 5 gallon, 3 tablespoons per 15 gallon and 1 pound per 1000 square feet of grasses and/or wildflowers) at budbreak for the first few years after planting, will help establish the plants on site more quickly. The better the plants are adapted to the site and soil, the sooner they will develop symbiotic relationships with soil microorganisms and become self-sustaining. Likewise, the best approach to dealing with insect activity in the garden is to first learn to distinguish the good.from the bad, (some people never quite come to terms with the ugly), the insect predators from the pests they help control. There is no need to elliminate insect pests. Balance is the objective and felexibility is the shortest route to that end. If the plants are well adapted, as they become established they will progress from needing protection for survival to providing protection. By observation and participation, learn when to intervene and when to leave well enough alone.

Sustainability is the essence of an environmentally appropriate landscape. There is a resonance to such gardens because they fit their place and purpose. That they can be managed with minimal effort on an occasional basis is a happy by-product for the people who choose to create and live in them.

Mirabilis longiflora
Sweet four o'clock

Boerhaavia erecta
Spiderling

LANDSCAPING WITH NATIVE NEW MEXICO GRASSES

by Kelly W. Allred

More and more home gardeners and landscape artists are turning to grasses for borders, hedgerows, contrasts, and accents in their landscape plans. The New Mexico grass enthusiast has more than 460 kinds of grasses that grow in the state from which to choose. Unfortunately, space here permits only the listing of native grasses to consider as you plan the landscape for home or business. When deciding on a landscape grass, one should consider sun or shade tolerance, invasiveness, water requirements, soil adaptations, winter hardiness, weedy potential, mode of propagation, and growth characteristics such as height and season. (a=annual; p=perennial)

Short grasses (less than 1 ft)
Bouteloua hirsuta (p)
Chloris cucullata (p)
Erioneuron pilosum (p)
E. pulchellum (p)
Festuca minutiflora (p)
Hilaria belangeri (p)
H. pusillum (a)
Muhlenbergia minutissima (a)
M. torreyi (p)
Munroa squarrosa (a)
Scleropogon brevifolius (p)
Sporobolus nealleyi (p)

Tall grasses (more than 3 ft)
Andropgon gerardii (p)
Bothriochloa alta (p)
Calamovilfa gigantea (p)
Muhlenbergia emersleyi (p)
M. metcalfei (p)
Panicum virgatum (p)
Phalaris arundinacea (p)
Phragmites australis (p)
Sorghastrum nutans (p)

Hordeum stebbensii

Medium grasses (2-3 ft)
Aristida dissita (p)
A. longiseta (p)
A. purpurea (p)
Bothriochloa laguroides (p)
B. springfieldii (p)
Bouteloua curtipendula (p)
Bromus fondosus (p)
Danthonia parryi (p)
Elymus canadensis (p)
Eragrostis erosa (p)
Festuca arizonica (p)
Glyceria striata (p)
Heteropogon contortus
Hordeum jubatum (p)
Leptochloa dubia (p)
Lycurus phleoides (p)
Muhlenbergia montana (p)
M. pungens (p)
M. setifolia (p)
Oryzopsis hymenoides (p)
Panicum bulbosum (p)
P. capillare (a)
Pappophorum vaginatum (p)
Phalaris caroliniana (a)
Phleum alpinum (p)
Poa palustris (p)
Schizachyrium cirratum (p)
S. neomexicanum (p)
S. scoparium (p)
Sitanion hystrix (p)
Sporobolus airoides (p)
S. flexuosus (p)
Stipa neomexicana (p)

FOXTAIL BARLEY (*Hordeum jubatum*)
Description: Perennial, although sometimes short-lived, bunch-grass 1 to 2.5 feet tall. Foliage is light green or greenish yellow. Flowers appear in attractive, golden-yellow, long-bristly spikes, which break into wind-borne segments when dry.
Planting and Care: Foxtail barley is a cool-season grass. It grows best in full sun on well-drained soils but will go dormant during hot periods in the desert areas. Sow during autumn or early spring, watering frequently. Plants may become weedy.
Propagation: By seed.
Uses: Foxtail barley is an extremely attractive plant when grown in dense clumps among broad-leaved ornamentals, or to add accents and contrasts to drives, rock gardens, and backdrops. The shattered seedheads may be a bit messy or troublesome.

INDIAN RICEGRASS (*Oryzopsis hymenoides*)

Description: Perennial, densely-tufted bunch grasses 1.5 to 2.5 feet tall. Foliage is light to bluish green and fine-leaved in arching sprays. Flowers are borne in stiffly branched, airy clusters, with hairy seeds protruding.
Planting and Care: Indian ricegrass is a cool-season grass, growing during spring and fall. It thrives in full sun in dry, loose, sandy soil. It is drought tolerant, but it is not suited to poorly drained sites.
Propagation: By seed, readily available from commercial sources, or it can be gathered from native plants.
Uses: Indian ricegrass is widely used for range restoration and erosion control. A clump of seedheads makes an attractive dried bouquet. Plants are suitable for rock gardens and native plant landscapes.

SIDEOATS GRAMA (*Bouteloua curtipendula*)

Description: Perennial bunch-grass 1 to 2.5 feet tall. Foliage is light green, generally low, and rather coarse. Flowers are borne on little flags usually on one side of the slender stems (whence the name, sideoats), which break off and fall to the ground as the seedhead matures.
Planting and Care: Sideoats grama is a warm-season grass found naturally throughout most of New Mexico. It prefers full sun in calcareous soil and is drought tolerant. Clumps become a bit scraggly and coarse with age and should be thinned or divided.
Propagation: By seed, which should be sown in fall, or division of large clumps. Seed is available commercially.
Uses: The little flags of the seedheads make a delightful accent mixed in native landscapes, or as a backdrop or corner effect in rock and cactus gardens.

INDIAN-GRASS (*Sorghastrum nutans*)

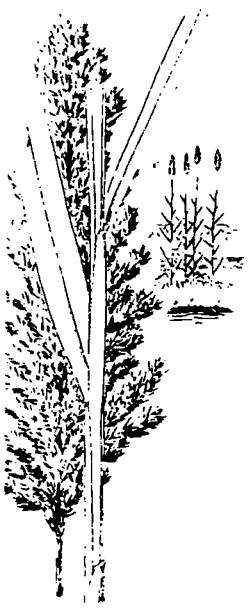
Description: Perennial, loosely-tufted or short creeping grasses from underground runners (rhizomes), growing 3 to 6 feet tall. Foliage is light or bluish green, somewhat coarse, and turns orange or purplish after frost. The fuzzy seedheads are rusty, coppery, or bronze-colored, with delicate bristles.
Planting and Care: Indian-grass is a warm-season grass native to the Great Plains. It thrives in full sun in a variety of soils, but prefers moist, well-drained sites. Plants reseed themselves readily.
Propagation: By seed, root stocks, or division of large clumps. Seed is readily available commercially.
Uses: Indian-grass is useful in mixed stands, in native plant gardens and naturalized areas bordering the garden or yard. Dense stands make attractive screens and hedges.

SWITCH-GRASS (*Panicum virgatum*)
Description: Perennial, tussock-forming grass spreading by underground runners rhizomes), mostly 3 to 5 feet tall, occasionally taller. The long leaves are medium green to bronze, drooping and giving a fountain effect. Flowers are displayed in attractive, reddish clusters.

Planting and Care: Switch-grass prefers loamy soil, full sun, and plenty of water. It is a warm-season grass, but is hardy except in extremely cold areas. The underground runners invade adjacent ground in light, sandy soils, but less so in heavier soils.
Propagation: By seed, which is available commercially, and root stocks, both of which can be gathered from plains and prairie meadows.
Uses: Switch-grass plantings make an effective backdrop, border, screen, windbreak, or large accent. Seedheads are used occasionally in cut flower arrangements. Switch-grass is most attractive when grown in dense stands, and also provides wildlife cover and bird seed. There are several varieties of this species.

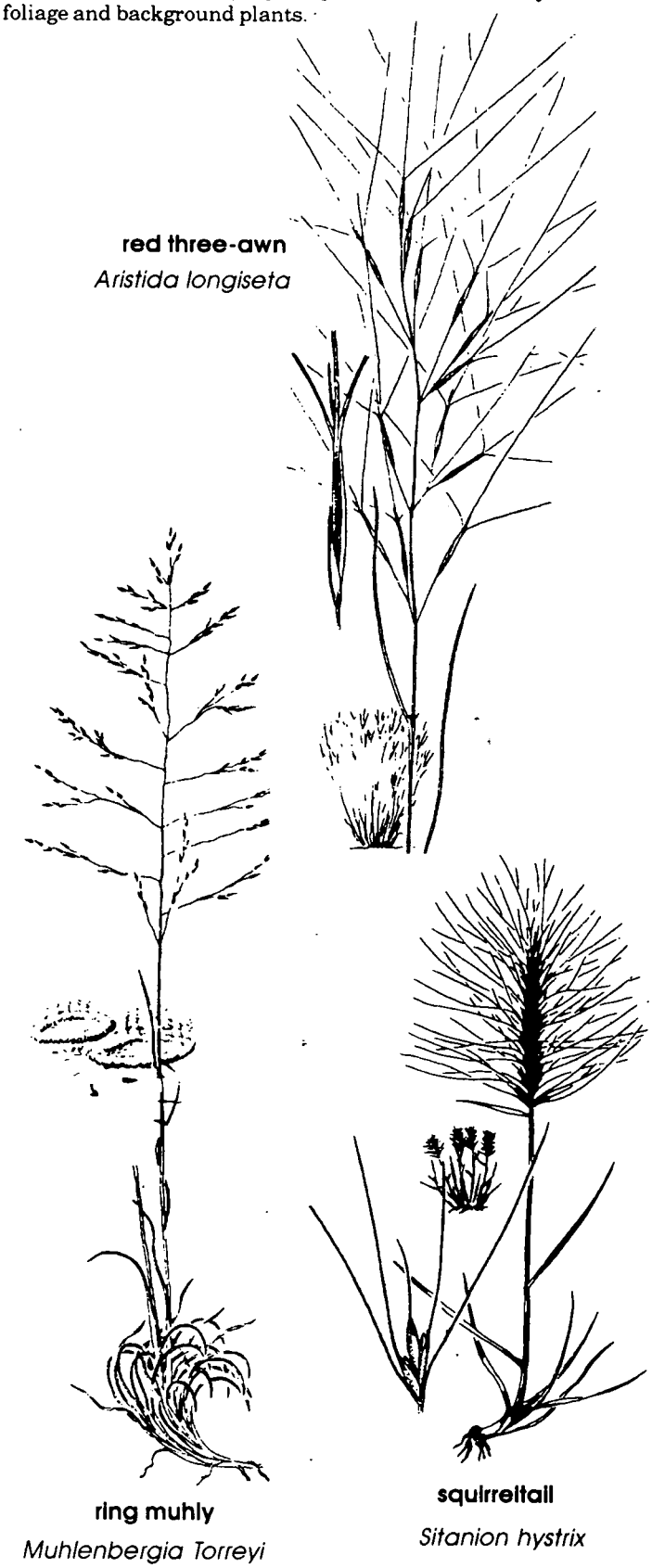
BIG BLUESTEM *(Andropogon gerardii)*
Description: Perennial, scraggly bunch-grasses 3 to 7 ft tall. Some plants also spread by underground runners (rhizomes), especially in sandy soil. Foliage is gray-green, turning reddish or purplish in the fall. Flowers are displayed in dark, turkeyfoot-like branches rising above the leaves at the tips of the shoots.
Planting and Care: Big bluestem, a common warm-season grass of the prairie and plains regions of the state, grows best in light, well-drained soils. With ample ground water, it thrives in hot, dry sites in full sun. The forms with underground runners must be contained.
Propagation: By seed or root stocks. The seed is easily available commercially or can be gathered by hand.
Uses: Big bluestem can be put to many landscaping uses, as a border, backdrop, screen, living fence or hedge, and to give fall colors. Dried seedheads are sometimes used in flower arrangements.

COMMON REED *(Phragmites australis,* syn. *P. communis)*
Description: Perennial, cane-like plants that spread vigorously from underground runners (rhizomes), producing large, dense stands. Stems are bamboo-like, 8 to 16 feet tall. Foliage is medium green or greenish yellow, coarse; one selection has variegated leaves. Flowers are displayed in silky plumes atop the stems. Plants are sometimes confused with giant reed, which is generally a taller, coarser plant with larger panicles.



Planting and Care: Common reed is a cool-season grass, but flowers throughout the growing season. Plants do best in low, wet areas, such as pond and stream banks, springs, and boggy ground. Careful planning is required to keep plants from invading and dominating the landscape, especially in sandy ground.
Propagation: By root stocks, which are readily available from wet habitats throughout New Mexico.
Uses: Common reed forms dense thickets in wetland areas, providing habitat for wildlife. Plantings should be restricted to large, open areas and are useful as living fences, windbreaks, screens, and accents against ponds and streams. The silky plumes persist through the winter and are employed in dried arrangements.

PURPLE THREEAWN *(Aristida purpurea)*
Description: Perennial, densely-tufted grasses 1 to 2.5 feet tall. Foliage is medium to light green and fine textured. Flowers are arrayed in plume-like, nodding, purplish seedheads with long bristles.
Planting and Care: Purple threeawn is a warm-season grass and prefers full sun in well-drained soils. It is extremely drought tolerant. Seed may be gathered from native plants throughout the plains, prairies, and desert areas of the state.
Propagation: By seed or plant division of large clumps.
Uses: Purple threeawn creates an attractive accent in native plant gardens. The delicate, purplish plumes contrast nicely with other foliage and background plants.



PLANTING TO ATTRACT WILDLIFE

by Dr. G. Scott Mills and Mark Raming, SWCA, Inc.

Vegetation is generally the most important environmental factor that affects the numbers and kinds of wildlife in both natural and urban environments. A recent study of breeding bird populations in urban and natural habitats conducted by SWCA, Inc. clearly showed vegetation to be the most important factor affecting bird populations in urban areas. This study, funded by the Estes Company, included 34 study sites encompassing a wide range of housing densities and amounts (volumes) of native and exotic vegetation. These sites fell into four general categories: urban areas dominated by native vegetation, urban areas dominated by exotic vegetation, natural desert with no houses, and urban parks dominated by exotic vegetation.

Major results and conclusions of this study are summarized below.

1) Vegetation had a much greater direct influence on bird densities and numbers of species in urban areas than did aspects of housing density. Areas with high amounts of vegetation supported more birds than areas with low amounts of vegetation.

2) Though housing density had little direct impact on bird populations, it was clear that housing density can significantly impact bird populations through its effects on vegetation. Increasing housing densities limit the area available for planting vegetation and thus limit the amount and structure of vegetation.

3) The type of vegetation (native or exotic) very significantly influences bird populations. Urban areas with large amounts of native vegetation supported large densities and varieties of territorial native birds. Urban areas with large amounts of exotic vegetation supported the highest densities of exotic birds, which were often most closely associated with the area of lawn. Two non-territorial native birds, White-winged Dove and House Finch, were much more common in areas with exotic vegetation than areas with native vegetation. Both species frequently nest or roost in one area and feed elsewhere.

4) As in studies conducted elsewhere, urban areas generally support higher bird populations but fewer species than adjacent natural habitats. Part of the increase in densities is accounted for by increased vegetation in urban areas, but part of it appears to be due to increased nonvegetative resources, such as bird feeders and water.

These results indicate that the numbers of bird species and densities are affected by the type and amount of vegetation. To maximize density and numbers of native species, high volumes of native trees and shrubs should be planted. To minimize exotic birds, areas of lawns and volumes of exotic trees and shrubs should be minimized. Small exotic plants, such as perennial or annual flowers, account for a small percentage of vegetation volume in an area and therefore have little effect on bird populations.

Some species of "near-native" plants, those native to adjacent states or higher elevations but not the Tucson valley (such as Mexican paloverde, yellow bird-of-paradise, perhaps Chilean mesquite), appear to be used as much as native plants by some native birds. Some exotic plants, such as pyracantha or cape honeysuckle, may also be used by some native bird species. It is not fully known which exotic plants provide significant resources for native birds and are "acceptable." Some exotic species, however, such as eucalyptus, African sumac, and Italian cypress, are clearly of little value to native birds because they provide virtually no food resources. Indeed, one reason that some of these plants are recommended by nurserymen is because of their lack of "insect pests."

Each native bird species reacts differently to the kinds, amounts and structure of native plants. With proper planting, it is possible to attract specific species. Hummingbirds are probably the most obvious birds that can be attracted by planting certain plant species, but many other species, such as thrashers, cardinals, and woodpeckers can be attracted through planting of specific plant species.

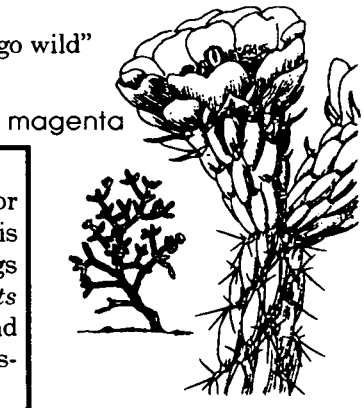
Though restrictions appear to be greater, populations of native small mammals and lizards can also be increased through extensive use of native plants.

Increased use of native plants to attract wildlife is generally consistent with low water use landscaping.

To attract native wildlife in urban areas:

* Plant only native trees and shrubs
* Minimize exotic plants and areas of lawn
* Maximize the amount (volume) of vegetation
* Plant a mix of species and create a mix of structural types (low shrubs, grasses, wildflowers, trees)
* Include cacti, especially chollas, which provide nesting sites for many species
* Let some of your yard "go wild"
* Keep cats indoors

Many thanks to Robert Dewitt Ivey for permission to use his wonderful drawings from *Flowering Plants of New Mexico*, second edition, in our newsletter



tree cholla
Opuntia imbricata

Book Review

By Jean Heflin

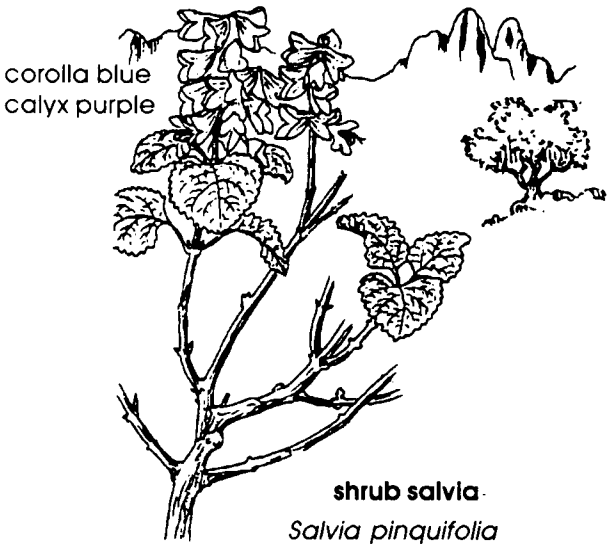
The Xeriscape Flower Gardener, A Waterwise Guide for the Rocky Mountain Region, Jim Knopf, 1991, Johnson Books, Boulder, Colorado, 14.95

A beautiful cover photograph of a garden of Iris and several Penstemons will draw you to this book and you will find it filled with all kinds of useful information for gardeners of the Rocky Mountain region, which the author defines as an area extending from Albuquerque and Flagstaff to Reno on the west, Spokane and Lethbridge, Alberta on the north and Bismarck and Dodge City on the east.

The forward and first chapter define and explain the concepts of Xeriscape and why they are important to the Rocky Mountain region and give data for climate in major cities of the area covered. I found the author's quantity figures for high, moderate and low watering zones particularly interesting. He uses 18 - 20 gallons of irrigation water added per square foot per 20 week season for high water zones such as Bluegrass and pansies, 10 gallons per square foot per season for Echinacea, Potentilla and Fescue lawn and three or less gallons for Ratibida, Rabbitbrush and native grasses.

"In landscapes designed for water efficiency, flowers have compelling advantages over traditional lawns in many situations. Considering the beauty and relatively low maintenance needs of semiarid flowers, they could be appropriately incorporated into landscaping much more often than they have been." So begins the introduction to the second chapter: Planning and Designing Waterwise Gardens. I could not agree more! The compelling figures for conversion from high water use plant materials to moderate and low water use materials for a property were a change from 137,000 gallons of water use over a season to less than 20,000 gallons!

Several following chapters deal with building, irrigating and maintaining the waterwise garden and then a section of plant profiles lists many useful plants with their light and water needs and more detailed information and photographs of some of them. The book concludes with an appendix giving blooming sequence, suggestions for meadow mixes, butterfly and hummingbird attractors, edible wild plants, seed and plant sources, demonstration gardens and organizations that support Xeriscaping. Interesting sidebars throughout the text on a tremendous variety of subjects from how to evaluate manure to how to control slugs will add to your gardening skills.



shrub salvia
Salvia pinquifolia

FROM THE EDITORS' DESK

With this special issue we hope to provide relevant information which many of you can use in your landscaping endeavors. Thanks to all of you who contributed. We have had many compliments on the quality of the Newsletter, but it is your Newsletter and we depend on you to keep us in "copy".

The article in the previous Newsletter titled "Livestock Factsheet" prompted two of you to write expressing disagreement with the content of that piece. The message you two gave us was that the livestock industry is a supporter and protector of our native landscapes. This issue is a lively one in the Southwest and provokes strong opinion. It is our responsibility as editors to provide information which is both timely and factual. With that in mind we encourage our membership to contribute to this debate with articles for us to print. Articles with references are most desireable because the reader can check the validity of statements. Opinion pieces will also be considered although we may ask for clarification if questionable material is submitted. Be assured that we are here to edit, not to censor. We don't think that you want a publication that avoids controversy, for through quality debate we can all learn.

Tim McKimmie
Rick Castetter

Bosque Fall Festival

The Festival of the Cranes will be held at the Bosque del Apache National Wildlife Refuge November 22 - 24. Volunteers are needed to staff the Native Plant Society Booth. Contact your chapter representative for information.

CALENDAR

OTERO

2 November- Potluck at noon followed by annual business meeting to plan the 1992 schedule. Home of Ad and George Hanawalt. Just after, or north of the 50 mph sign at the south end of Tularosa turn west. Got to dead end. Turn left (south). Go 1.5 miles until you cross the RR tracks. Hang a hard right after the tracks onto Hanawalt's land. BYO CHAIRS. Also bring your personal calendar, something to write on, and ideas about where you would like to go and what you would like to do.

LAS CRUCES

13 November — Pot Luck Dinner. St. James Episcopal Church, South Main and St. James, 6:00 p.m.
11 December — Organizational meeting for 1992 at 7:30 in Room 190 of NMSU Ag Building. Bring your ideas.

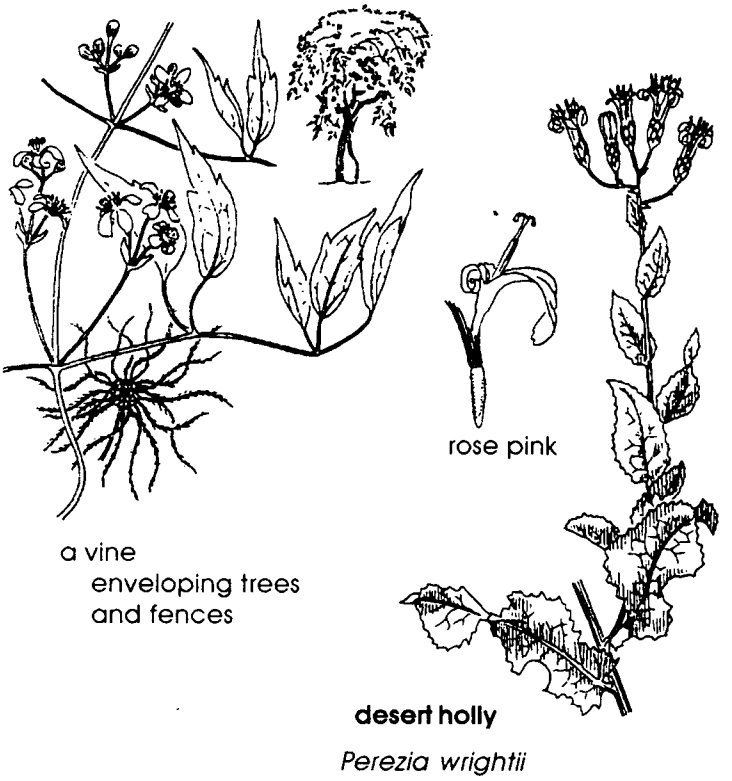
SANTA FE

Meetings 3rd Wednesday of the month at 7:30 at St. John's College.

GILA

10 November - Cave Creek, Chiricahua Mtns., Arizona. This is a must trip for those who have never been to this area on the western slope of the Chiricahua Mtns. near Portal. For those of us that have been to the area, we are always ready to go back. The fall color should be outstanding, and we will see plant species that don't occur in our area. The birdlife is also outstanding in the Chiricahuas.
Leader is Bob O'Keefe 385-5101

virgin's bower
Clematis ligustiicifolia



VIEWS FROM THE SOUTH

One Member's Opinion

Recently I talked at length with a District Ranger with the U.S. Forest Service about the need for "Ancient Forests" and why they are so important to the long term health of any forest system. He expressed surprise saying he had recently learned that there are actually some people who think that natural predator-prey relationships are beneficial and should be allowed to function where ever possible. He explained to me that in like manner, he felt that forests need to be managed, by logging, to reduce pests such as mistletoe and spruce bud worm. The point I tried to make to him is that there are a growing number of people who feel that mistletoe, spruce bud worms, coyotes and such are natural phenomena and there should be areas left where natural processes can function. Neither agreement or disagreement was expressed by him, but he felt those people should be satisfied with the areas already designated as "Wilderness".

This seems to bring again the question "How much is enough?"Since our conversation, I have continued to ponder this question. It seems to me that what is not considered in his statement is the fact that our population keeps increasing, our mobility keeps increasing, and our development of previously undisturbed areas continues, making the protected areas that seemed adequate years ago, inadequate today. Additionally we are fragmenting ecosystems and /or populations with our activities when we really should be leaving connecting corridors. Some excellent articles appear in the August 16 issue of "Science" regarding the long term damage to our ecosystem occuring because of over use.

Certainly you will not find me saying that I want all timber operations stopped, but I do say that we are being extremely short sighted and reckless with our present levels of production on the forests of southern New Mexico. We must continue to look for and push for less commodity orientation by our public land managers and for a much stronger preservation ethic. Leadership to this end must come from our elected officials, but it can start with local land managers as well.

Tom Wootten

CHAPTER REPORTS

Otero-Jean Dodd

Sept. 27,28,29 we spent looking at the Gila Valley near Silver City under the expert guidance of Ralph Fisher. Anywhere around the Gila or Mimbres rivers you have to be impressed by the power of water even if at the time you are seeing a trickle of water and an enormous area of debris from the flood stage. Ralph told us in various areas exactly how high the water could come compared to what we were seeing.

Altogether we saw many wonderful old trees including a grove of Arizona sycamores, netleaf hackberries, Western soapberry, Arizona walnut, N.M. Olive, oaks-scrub, Emory, gray, *turbinella*, and the bulkiest cottonwood in New Mexico. It has at least two tree size branches which had fallen over on each side of the main tree and one had taken root and grown as if it were independent. The whole tree is 94' tall, has a crown of 135', and a diameter of 37'10".

We saw many different morning glories especially the small scarlet *Ipomoea coccinea* and a beautiful sky blue *Evolvulus* (see Warnock-Davis p. 179 *Evolvulus alsinoides*). As happens so often with natives we "discovered" one of the little blue flowers and then looked around to see that they were everywhere we looked in that area! Nightshade came in white, yellow, and blue. 4 o'clocks included Trailing windmills *Allionia sp.* (Ivey p.212), Sweet 4 o'clock, *Mirabilis longiflora* in large patches (Ivey p. 213), red 4 o'clock, *Mirabilis coccineus* (Audubon 555/619), *Tripterocalyx cyclopterus* (Ivey p. 215), Spiderling *Boerhaavia erecta* (Ivey p.213). It is such an interesting country that we already have suggestions for more trips down there.

Otero's trip through Carr Gap and on to 16 Springs in the Sacramento Mountains was August 24th following an unusually large amount of rain that month so that all the growth was lush. Member Henrietta Mitchell brought a 1896 picture of her grandfather Carr and his family. The background was totally desolate. Nary a sprig of vegetation was noticeable. As we stood in the area named after him, Carr Gap, it looks now like a normal mountain scene with trees, shrubs, grasses, and wildflowers. Paul Gordon and some of the Mayhill members were telling us how couples with very large families tried to make a living from the land until eventually it became barren and the families moved on leaving the land to heal.

As we drove on we saw deep blue, purple morning glories (*Ipomoea heterophylla* ?). Along the roads and rocky slopes were the usual profusion of skyrockets, white ragweed, geraniums, and lots of yellow composites. We saw pink evening primroses, gayfeather, and one lone stalk of Pinesap *Monotropa hypopitys* (Ivey p. 161).

Las Cruces-Paul & Betty Shelford

At our August meeting, Conservation Chairman Tom Wootten told of his work trying to reduce the cost of permits for visitor use of State Public Trust Lands. There was a discussion of our participation in the endangered plant survey of the Cox Ranch area. Nine members of the chapter have been involved in this search for six rare plants. Jony Cockman, botanist and range ecologist for the Los Medanos Natural Area, talked on the flora of this area of sand dunes and salt flats between Jal and Carlsbad. She also showed slides of the Golden Crownbeard Daisy, *Gaillardia*, Heliotrope, Spectacle Pod Mustard, Honey Mesquite and flowers of the Gentian family.

On August 18th we took a late afternoon field trip to Achenback Canyon and the Solidad Rocks in the foothills of the Organ Mountains. Due to the above-average rainfall this summer, there was a profusion of wildflowers. There were huge specimens of Fishhook Barrel Cactus *Ferocactus Wislizeni* with blooms varying from yellow to red to orange. Some of the more unusual plants found were Clammyweed, Wild *Clematis*, Spinyleaf *Zinnia*, Wire Lettuce, Snake Cotton, Mexican Oregano and Rough Twin-pod.

At our September meeting, Melanie Florence talked on "Plant Communities in the Organ Mountains," starting with a discussion of deserts in general (areas where evaporation exceeds precipitation), the four desert regions of the United States, and the adaptation of plants to deserts in order to survive. She then went on to an overview of the four life zones of the Organ Mountains: 1) Chihuahuan desert with seven to ten inches of annual rainfall, 2) Desert grassland where the soils are deeper with increased rainfall at higher elevation, 3) Pinon-Juniper-Oak woodlands between 5,000 - 7,000-foot altitude, and 4) Rocky Mountain coniferous forest area above 7,000 feet. This was accompanied by a slide show illustrating the changes of native plants, shrubs and trees in the four life zones of the Organ Mountains.

Our field trip on September 15th was to the "Old Bird Refuge" on the Rio Grande south of Las Cruces. This is a semi-riparian area of comparatively lush foliage. Cottonwoods, Giant Reed Grass, Green and Gray Willows, and Tamarisk provide nurturing soil for Lemon Chinchweed, Purple Asters, Blue Morning Glory, Peach and Pink Globe Mallows, Herbacious Dalea, Silverleaf Nightshade, White Dayflower, Jimson Weed and Desert Holly.

At our October meeting Barbara Sallech discussed "Historical Vegetative Changes in New Mexico". She explained that many factors are responsible for changes in New Mexico vegetation. Although many New Mexico landscapes are less healthy there is evidence that some areas have actually improved. More study is needed regarding the effects of climate, cattle, mining and other human impacts.

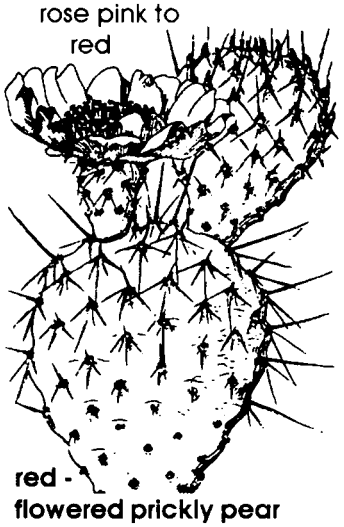
Cacti and Succulents for New Mexico Landscapes

By Theodore B. Hodoba

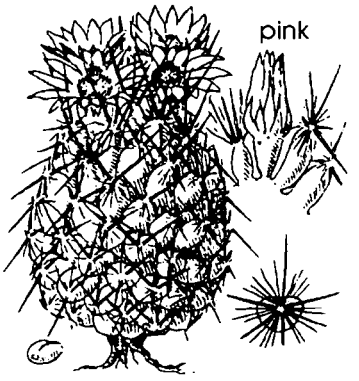
Cacti and succulents of New Mexico range in size from tiny plants such as *Epithelantha micromeris*, a couple of inches across to very large plants such as *Yucca elata*, several feet wide and tall. The smaller ones are easier to use in the desert garden. The larger ones, on the other hand, need to be chosen carefully and should be planted where they won't become a problem when they reach mature size.

This group of plants can be used in all areas of your garden or as separate features and in gardens of their own. Use your imagination when designing with these fascinating plants. An individual giant *Yucca torreyi* or *Agave neomexicana* can make a strong sculptural statement in the landscape. Place them in an open spot where their dramatic forms can be appreciated. An adobe wall shows them off beautifully. Large rocks, a gravel mulch, and other native wildflowers will keep the planting looking neat, the weeds down, and add a natural appearance to the overall composition.

In a garden with several vertical layers, the smaller cacti and succulents can be a part of the understory layer. In these situations, groups of the same species will create a strong, geometric statement. These plants, such as some of the *Mammillaria*, *Coryphantha*, and *Escobaria*, species appreciate being grown in the light shade of the branches of airy shrubs, such as legumes like *Acacia*, bird-of-paradise, and mesquite. Not only is this healthier for the plants, but they can also be "discovered", especially when they are in bloom, on garden walks. Island beds have become popular in recent years for perennials, and they also lend themselves well to this group of plants. Basically these consist of raised mounds of earth arranged in oval, kidney, and odd-figured, fluid geometric shapes. Group larger plants on top of the mound and smaller ones around them to the bottom of the mound. Island beds have the advantage of being viewed from all sides, thus showing off the plants. Another advantage to these beds is that they are raised and drain better, especially with soils amended with gravel, sand, or scoria (crushed volcanic rock).



red - flowered prickly pear
Opuntia erinacea



pincushion cactus
Coryphantha vivipara

When planting cacti and succulents, care should be taken to insure their survival. Many nursery plants start out life in a greenhouse and are protected for much of their early life in lath houses or by other means. They will need to be acclimated to the change in growing conditions gradually. Cacti and succulents should be planted after all danger of frost is past and like to be planted during the hottest times of the year. Plant them early enough in the summer so they can establish themselves before winter. Protect them for about one week from the hot, midday sun with some sort of shade structure to prevent sunburning the plants. Once they have adjusted to their new home, the majority like a good amount of sunshine and airy conditions. While the cacti should not be watered until they are established, the other succulents should be well watered upon planting.

One of the biggest complaints one hears about these plants, and especially cacti, is that they are difficult to weed. This is in large part due to the *Opuntia* species which have small, almost microscopic spines called glochids that are actually more of a problem than the larger ones. They flake off the cactus, and these tiny, hairlike spines work their way into the skin. It's true that these make weeding and cleaning out trash from prickly pears and chollas an unpleasant task. Other cacti and succulents do have spines, some quite sharp; however, they are more easily avoided than with *Opuntia*. Many lay flat against the body of the plant or are so small that you can plant then, weed them, and even pick them up easily. Weeds germinate best in soil that has been disturbed. To avoid the problem of weeding cacti, including *Opuntia*, be careful when planting them so as to keep the soil as little disturbed as possible.

dagger cholla
Opuntia clavata

As with any plant, careful planning and consideration are necessary in placing cacti and succulents in a garden. They are our most intriguing plants, highly prized by collectors around the world, and we are lucky to live in a climate where we can grow them in our landscapes.

Blanket Flower, *Gaillardia* species

By Dennis Swartzell

Southwest Lawn & Landscape, September 1991

The Blanket flowers are some of the most beautiful of all the wildflowers available for use in the landscape. These herbaceous members of the *Compositae* family are native to North America, and include several semi-hardy perennials and one tender annual specie. The flowers, which are typical for the family, are daisy-like, two inches or more in diameter, and appear in warm tones of red, orange, yellow and bi-colors. The plants appear as leafy, erect herbs with alternate or basal foliage. Leaves are more or less lanceolate, hairy and usually rough to the touch.

The annual *Gaillardia pulchella* is known as the Indian blanket flower, which will grow to three feet in one season with an erect, bushy habit. *G. aristata* is known as the Firewheel, a perennial native to the Western United States growing to two feet. Flowers are red with yellow tips. *G. grandiflora* is produced from the previously mentioned species. This hybrid has the most variation in flower color and shape. Bright combinations of red and yellow with orange or maroon bands are possible. Larger flower sizes and double-petaled varieties are available within this specie. Various cultivars and strains of *Gaillardia* are also marketed, including: 'Goblin'— a very compact variety growing to only one foot tall; 'Lorenziana' which has no outer ray petals and only the inner disc petals, giving it an odd balllike appearance; and the strains 'Double Gaiety' and the similar 'Lollipop' which are double petaled, often appearing as bi-colors.

Indian blanket flower
Gaillardia pulchella

Blanket flowers are real sun lovers, thriving in hot, dry places. They may be used for massing in beds, borders or as an addition to a wildflower meadow. The flowers are perfect for cutting. Soil preparation should ensure that adequate drainage is provided to avoid problems with root rot. The addition of organic matter and deep tilling will also allow the plants to withstand some drought. Seed may be started early indoors and set out after all danger of frost is past, spacing on 12-inch centers. *Gaillardia* may also be sown, scattering sparsely and lightly covering the seed, again after danger of frost. Plants should be thinned to 12 inches apart for best growth. Light applications of a water-soluble fertilizer will initiate early growth but avoid frequent fertilizations to avoid lush growth lacking flowers. Your Blanket flowers should begin blooming in June and continue until frost.

Native Plant Collecting

By Tom Wootten

In order to have a more "instant" landscape, many people seek very large specimens of some of our native plants. These plants are almost always collected from the wild. Do it yourself projects or dealing with professional collectors can be satisfactory. Dealing with illegal collectors may be quite expensive and frustrating. Frequently, collected plants may be diseased or infested with damaging insects. If your plant fails and it was acquired illegally do not count on finding any recourse against the seller.

There is no restriction on non-commercial collection of native plants from private land, with the owner's permission, except for plants listed as "Threatened and Endangered" by the U.S. Government or by the State of New Mexico. Lists of the protected plants can be obtained from the U.S. Fish and Wildlife Service, Box 1306, Albuquerque,NM 87103 for federally listed plants and Department of Minerals and Natural Resources, Villagra Building, Suite 129, Santa Fe, NM 87503, for state listed plants.

Plants may be collected for commercial purposes with the permission of the landowner, but in addition, State of New Mexico, through New Mexico Department of Agriculture, requires a collector to have a collector's permit, an authorization permit signed by the land owner, or a bill of sale from the US Forest Service of Bureau of Land Management, and NMDA tags for each collected plant. Tags should be attached to each collected plant during the interval from initial digging, through sale and transplanting. As a potential buyer then, herein lies your first tip as to the legitimacy of the seller. Texas and Arizona have different rules that may not require tags, but sellers still need to have a New Mexico dealer's permit. Commercial nurseries are not required to keep tags on the plants, but should have bills of sale indicating the source of the plants.

The US Forest Service and Bureau of Land Management offer plants for sale to both commercial and non commercial applicants at a very nominal charge. They do restrict the areas where collection is permitted. Commercial collectors still need to have the State permit, authorization, and tags noted above.

If you observe an apparent collector removing plants from the wild, observe license number, make and color of vehicle being used if possible. Do not endanger yourself. Notify the land owner if known. If unknown call either US Forest Service or the Bureau of Land Management offices in the nearest community and report your observation. If after working hours, call 1-800-neighbor. The latter number reaches an interagency switchboard where your report will be received. All of us have an interest in improper removal of native plants because of the scar and vacuum this leaves.

Desert Marigold Blossoms Brilliantly

By J. Joseph Pearl

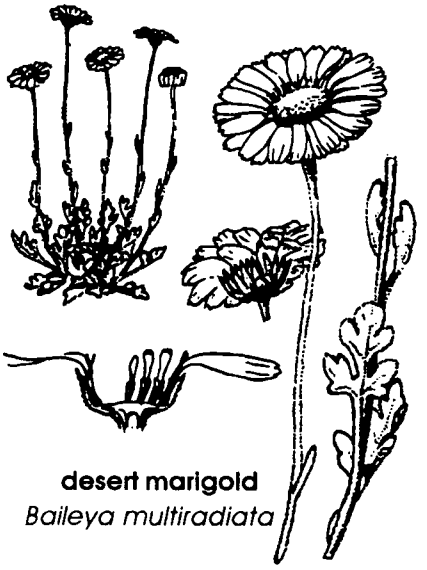
Southwest Lawn & Landscape, June 1991

That wooly, almost white colored plant seen along roadsides throughout the Southwest is the desert marigold. It is most visible from March through early fall because of its bright yellow solitary blooms. *Baileya multiradiata* grows along roadsides. on and around mesas and in the desert plains up to five thousand feet elevation.

These are some of the hardiest plants in the desert. They form a tap root, and eventually harden off and become woody plants. The root system allows this plant to grow in some extremely rugged conditions. Where it appears a plant could never survive, a desert marigold will pop up. The plants spread from seed, so the distribution in the wild can be charged to the birds and the wind.

Desert marigold will eventually reach a height of up to 20 inches, but when given supplemental watering may reach two feet in height. As mentioned earlier, the plant has a basal growth habit and the foliage is very wooly looking. The foliage is usually lobed at the base of the plant, but the lobes are very irregular. One leaf may be deeply lobed and the alternate leaf will not have have any lobes at all. The terminal part of the plant tends to have foliage that is more lanceolate than lobed.

Blooming begins in early spring, usually around late March. The flowers are a beautiful bright yellow about one inch to one and three quarters inches in width. Each blossom has about 35 to 50 petals, and are quite full-looking. The flower will reach a height of up to eight inches. The bloom will remain on the plant throughout the summer and fall, and should be cut off when faded in the home landscape to encourage reflowering. Once the bloom begins to fade, it will dry out and become papery. It will eventually droop and hang on for the remainder of the season. The seeds can be gathered once the flower has completely dried for seed next spring. The dried and fresh flowers can be used for arrangements.



desert marigold
Baileya multiradiata

For use in the landscape, a sandy, gravelly well drained soil works best. Drainage is a very important factor with this plant. A compacted, heavy soil can result in reduced flowering. Soil amendments are recommended if clay soils are encountered.

Although this plant is indigenous to North America, no historic uses by native Americans are known. Historically, though, this plant has been a burden to goat and sheep herders, as the desert marigold is poisonous to sheep and goats. Sheep generally will not eat the foliage, but they love the flowers, which are twice as poisonous. Goats will avoid this plant in the range. However, in extreme drought conditions where desert marigold is one of the only plants present, livestock losses will occur due to the fact that there will be no aternative forage.

There are plenty of places for the desert marigold in the home and commercial landscape. The persistent bloom makes this a desirable plant. Few plants will provide color for such a long time. In rocky areas, slopes or areas that need accent this is the plant to use.

Availability of this plant has increased, and most nurseries are carrying it. They will most often be found in one gallon containers, and rarely in five gallons.

If one has an area that is in need of color, *Baileya multiradiata* is a good choice. It is a true drought tolerant plant that supplies a landscape with unique foliage and beautiful yellow color.

Maintaining the Native Garden: Fall Tips

By Susan Wachter

1. As temperatures cool, divide spring and early summer flowering perennials.

2. Planting continues for most all plant material except warm-season grasses (Buffalo and Grama grasses). Cool season grasses do well when sown in the fall. Supplemental irrigation is a must.Bare root planting begins after woody deciduous plants have lost their leaves and undergone a long cold period. Ornamental bulbs including alliums, daffodils, grape hyacinth look charming in native-type landscapes. While purists may protest, a little extra color isn't out of line. These need planting now.Where underground critters eat the bulbs, plant the bulbs in chicken wire cages.

3. Work through garden removing weak growth, especially woody plant growth that may become damaged in winter. Don't do excessive pruning now.

4. Mow meadows no lower than 6 inches to tidy area and disperse seed.

5. Apply mulches to tender plants after first hard freeze.

6. Gradually reduce watering frequency back to mid-winter's rate.

7. Late summer through late fall is a nice time for seed gathering trips. Don't remove all the seed from an area. Mother and her animals need these seeds more than you do.

8. Trim plants. Remove dead flowers, spend seed heads unless they are particularly attractive and aid the winter garden's appearance. Use the plant material as mulch or compost before returning it to the garden.

9. Watch for bug hiding places and egg laying areas. Learn to identify the good bugs from bad and eliminate the bad bugs. Late season sprays help reduce overwintering aphid populations.

10. Gradually reduce irrigation frequencies to mid-winter rate of once a month.

11. Record your impressions of the garden in a journal. These notes will help you improve next season's garden.

Rabbit Resistant Plants as Experienced in Sandia Heights, Albuquerque, New Mexico!!!

by Jean Heflin

In the first place, all my friends who know about these things say there is NOTHING rabbits won't eat when they are hungry enough. Drought years are especially tough. To discourage the little darlin's, always protect new plants till they grow up and toughen up a bit. Early spring (when you are dying to get your plants in the ground) is usually when the rabbits are hungriest because their natural food has not yet leafed out. Young and tender means salad for all creatures especially if you're watering a lot to make them grow!! Chicken wire will hold them at bay until your plants are to a stage where they are not so succulent.

Not to discourage anyone BUT not only rabbits like salad; quail, towhees, and thrashers pull up young plants. One year I couldn't figure out what was taking everything I put out in one bed, even milkweed - it was a family of woodrats!

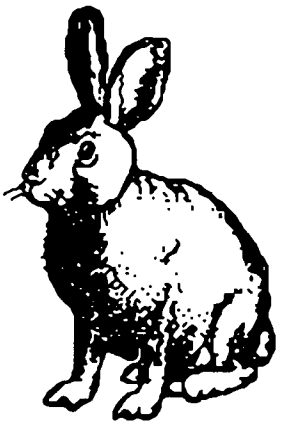
In spite of all this, there are some things that seem to go on flourishing outside of our fenced areas, which must mean they are (1)drought resistant and (2)low on the rabbit consumption list. You will notice the list consists for the most part of plants with spines or bitter taste. Here's one list. (* indicates a New Mexico native.)

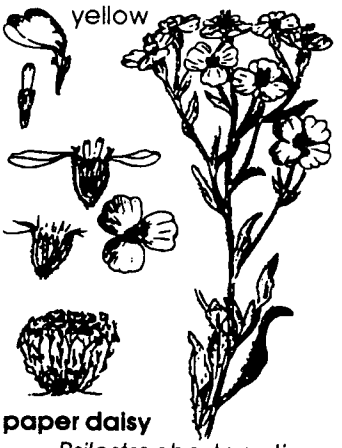
Chocolate flower
Berlandiera lyrata

sand sage
Artemesia filifolia

SHRUBS

Rhus trilobata *- lemonade bush - nice fall color
Rhus glabra *- smooth sumac - good fall color. Try for the laceleaf variety which is especially nice.
*Artemisia filifolia**, *A. frigida**, *A.tridenta** - sages
Caryopteris incana, - blue spirea
*Fallugia paradoxa** - apache plume
Dalea scoparia * - broom dalea for sandy areas
Juniperus species - junipers
lilacs
barberries - they don't seem to like to mess with the thorns
hollies
Yucca species
Hesperaloe parviflora - Texas red aloe
Poliomentha incana * - rosemary or bush mint
Chamaebatiera millefolium - fernbush

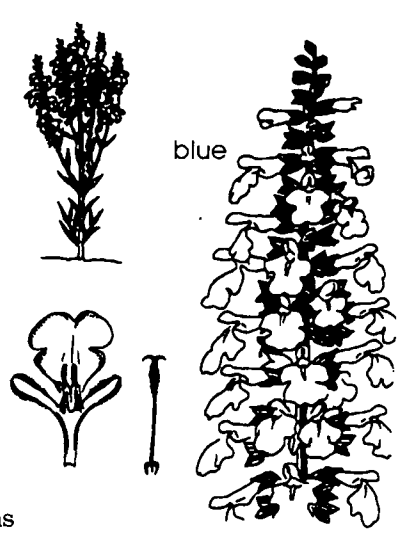




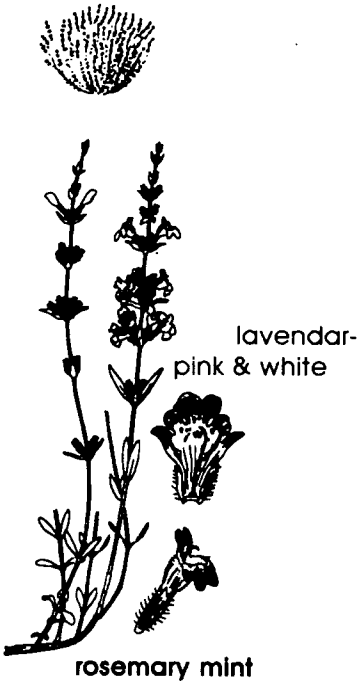
paper daisy
Psilostrophe tagetina

PERENNIALS

*Penstemon. anqustifolius**, *P. Palmeri* *, *P.pseudospectabilis**, *P.pinnifolius**, *P.ambiguus* * (for sandy areas), *P. strictus* * and *P. whippleanus* * - Desert species of penstemons (these have been cut back by rabbits, but not out.)
Bearded iris
Maxmillian daisies* - fall bloomer, give LOTS of room
Salvia azurea * - big blue sage
Red hot pokers
Coneflowers* - *Ratibida* species
Berlandiera lyrata * - chocolate flower
Spurge - This seeds itself; be prepared.
Baileya multiradiata * - desert marigold
Zinnia grandiflora * - desert zinnia
Liatris punctata * - gayfeather
*Psilostrophe tagetina** - paperflower
Day lilies -They eat them when emerging in early spring but tend to leave them alone afterwards.



blue salvia
Salvia azurea



rosemary mint
Poliomintha incana

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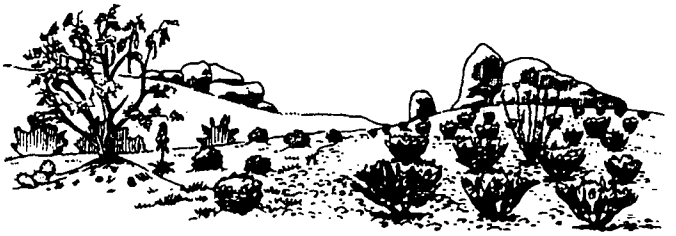


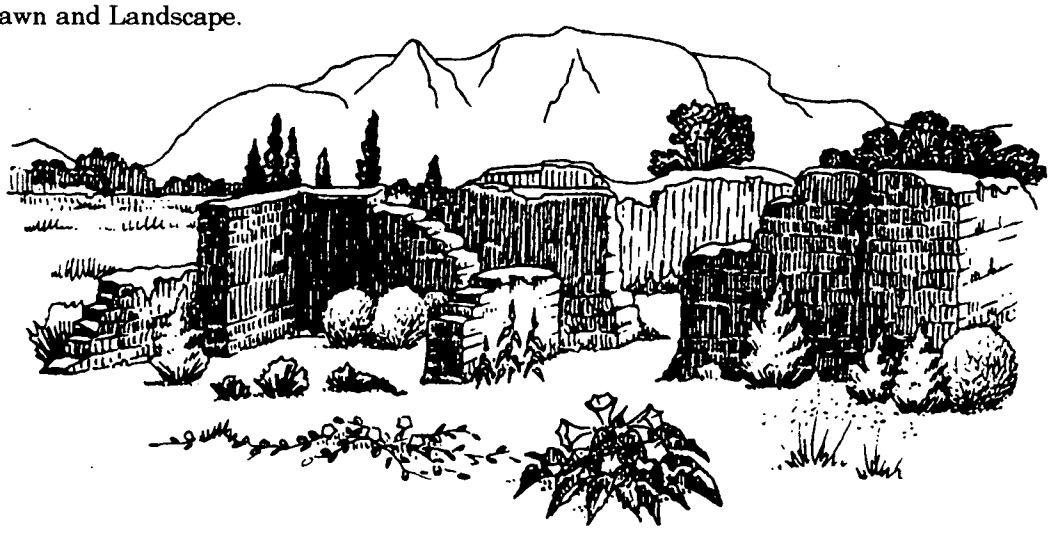
PERIODICALS

American Nurseryman

Desert Plants

Selected Publications available from State Experiment Stations or Cooperative Extension Services

Southwest Lawn and Landscape.



For Genuine "Global Relief", Plant A Native Tree

by David K. Northington

In a complicated world with complex ecological and environmental problems, there are no easy solutions or quick fixes; we should guard against addressing any single aspect of a complex system without considering how that action might affect the rest of the system.

A very real example of this problem is the large number of usually well-intentioned (but not fully thought-through) tree planting initiatives. "Re"planting trees that have been cleared for urban growth implies that the native trees that were cleared will be replaced with those same native species. But many of these programs instead recommend planting "exotic" trees that are introduced from other continents. Even if they are "selected" for your hardiness zone, or are "drought-tolerant" or "naturalized," it does not mean they will fit into local ecological interactions. This is true even for trees native to North America, or even to your region or state, if they are not native to the area where they are being planted.

Exotic ornamental trees often consume many resources, including water, soil amendments, fertilizers, and pest control. Additionally, they usually do not reproduce, so "replacement" begins anew when the tree dies, which is often in the first few years. If you blindly plant such a tree, you may do so at a huge net ecological resource loss.

Admittedly, some exotics do not require additional watering, fertilizing, spraying, etc.; they are touted as being "naturalized" or "just as good as a native." But ecologically, what do they provide? They do not provide wildlife habitat, soil microbe interaction, or other ecosystem involvement, and they do occupy space that a true native—that *would* contribute to the local ecosystem— could occupy instead. So, while such naturalized exotics may not be a resource drain, they make few, if any, contributions beyond aesthetics, such as flowering or shade. They do not ecologically replace what was once there.

Another argument for "planting a million trees". is the belief that they will absorb carbon dioxide, thus reducing the global warming caused by the greenhouse effect. Although this sounds good in theory, it is not clear how serious the greenhouse effect is, and ecologists do not agree on whether a million trees (or even a billion) will absorb even as much carbon dioxide as was produced by the propagation, delivery, and .planting process, let alone provide any measurable mitigation of global warming.

The ecological results of removing native plants, however, is well documented. Native plants provide the base of the food chain for all wildlife, they are sources of oxygen production, and they are the only organisms capable of converting light energy to a form of energy that all life on Earth can use. Removing native wildflowers, grasses. shrubs, and trees has resulted in many ecological problems that planting an exotic tree does not address, and may well make worse.

So if you wish to take action on ecological problems, plant a tree native to your area. You will address problems with a *total resource conservative* approach, not a no-gain or, worse, a net resource loss. Doing something in the name of ecological good is only valid if that good is not offset by negative ecological consequences.

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Maintaining the Native Garden: Winter Tips

By Susan Wachter

1. Check plants for broken or damaged parts. Winter winds and snows may break branches or smash plants beyond repair. Prune off damaged plant parts when noticed.

2. Check the soil for moisture. This seems strange for native plants, but how many are actually native to your particular area? Unless you inherited one of "Mother Nature's" displays and made no changes, you are likely to have some plants from more moist areas. Water evergreens monthly and deciduous plants every four to six weeks.

3. Planting is possible with bare root deciduous plants through the winter until leaves threaten to emerge. Plants must have been stored or collected in cold areas to insure dormancy. Some dormant, container-grown, properly hardened-off plant material can be planted in winter.

4. Mulches are applied to plants that need the extra protection. Sun, wind and cold temperatures are brutal on plants which are barely hardy for an area. Straw, hay, and dried grass are a few of the mulches that can be used. In exposed areas, chicken wire secured to the ground will help keep the mulch in place.

5. Sunscald protectors on young deciduous trees is a good idea. Damage occurs on the south and west sides of the tree due to many factors including winter soil drought, previous tree stress or injury and warming of the south and west sides of the tree by the winter sun. Wrapping the trees in December from the soil line to the first branch or beyond helps prevent winter injury. Remember to remove the wrapping when the leaves emerge.

6. Seeds that need cold moist stratification shyould begin their treatment in mid-winter. Experiment with sowing cold-loving annuals such as Bachelor buttons, Shirley poppies and sweet peas outside. Yes I know they are not native, but they add much to the early garden.

7. Take time now to analyze the winter garden. One major complaint about native landscapes is they appaear so "dead" in the winter. We have enough nice looking plant material to make winter an interesting season in the garden.

8. While bugs are not a major concern in winter, dedicuous, woody plants can be sprayed with a dormant oil spray to eliminate overwintering insects. Day temperatures must be above 45° F while spraying and several hours afterward to allow for drying.

9. Repair walkways and other non growing items now.

10. Don't forget wildlife. Water is primarily importaing and food supplements may be necessary if supplies in your area are limited. Lean more towards developing natural food sources rather than free handouts.

The Use of Regional Native Flora for Desert Landscaping

By Karen Reichhardt

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I'd like to offer some comments on desert landscaping from a bioregional perspective, as a plant ecologist. I've studied the native landscapes of Arizona for more than 10 years, and cultivated a keen interest in the native flora as color, cures, tastes, textures, shades and smells. Home landscaping is for us an attempt to bring into our urban environment a bit of the quality and habitat that remains outside in the desert. Choosing natives as landscape materials simply makes common sense. In research with other biologists I've learned that many desert trees and shrubs provide a niche for birds and animals that would not exist with exotic plants.

Public service organizations and agencies frequently know very little about the values which guide home residents in their choice of landscape materials; in fact it may be that they perpetuate a number of myths about which plants are most useful for arid landscaping. To learn more about homeowner plant materials choices, Judy Mielke and Gary Nabhan designed a survey which they gave to about 100 visitors to the Desert Botanical Garden, to both desert residents and non-resident visitors.

The most surprising finding was that twice as many Arizona desert dwellers have native plants in their home landscape than do non-desert residents. Although it was only 30% of all desert dwellers that did include natives in their yards, this information indicates that there may be more lay interest in plants of local origin here in the Arizona desert than in other regions. Why is this?

Is it because of a decade's worth of propaganda from desert municipalities that urges their citizens to beat the peak, slow the flow, and use drought-hardy plants and landscape designs to conserve water? For 30% of Arizona dwellers water bills are costly enough that they are interested in ways to cut landscape watering costs—only 16.2% of nondesert dwellers felt this to be an issue. More to the point, 45% of the Arizona desert dwellers said that their selection of home landscape plants would be different if they knew which required less irrigation.

But interestingly enough, just as many Arizona desert dwellers said that whether or not a plant is native affects their decision to plant it in their yards. Why would 45% of the desert residents feel that a plant's status as a native is a critical factor in selection? Like us, they may feel an aesthetic pull toward our own desert plants.

In the past few years brochures on arid landscaping plant materials have promoted exotic trees and shrubs as well as the natives. Even our own desert trees brochure includes several exotic trees. While all of these trees thrive here, only the natives suffice for regionalism.

In the Phoenix area, little native flora remains in core areas which were slowly converted from agriculture to urban cities. What distinguishes this city from Perth, Australia, or Cobble, Iran? Olives, eucalyptus, Italian cypress would grow in any of these locations.

Our native mesquites, palo verdes, acacias, and desert willows help to distinguish us. If we focus only on water saving desert plants, we will open the doors to the widespread use of tamarisk, petite oleander, bermuda grass and buffalograss. On the basis of the native plant survey, perhaps "appropriate" means that a plant must reinforce the regional biocultural identity that has evolved in the Sonoran Desert and neighboring deserts over centuries. To improve the desert urban environment it is also desirable that a plant provide habitat for native fauna and not escape to compete with native flora. We are aware that there will always be an interest in imported plants in the urban landscape. City governments and parks are urged to preserve and increase our biocultural identity through native plants. It is a question of balance: how much effort should we invest in truly native, but underappreciated plants right at our back doorstep?

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