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## LANDSCAPE PROFILE



Arizona highway landscapers use a variety of low-water requirement desert plants and decomposed granite to beautify roadway and suppress erosion.

labor pool and the proximity of Arizona State University's college of engineering hasn't exactly hurt the industrial influx.

And new industry, high-tech or whatever, brings new people, younger people—some 10,000 a month, according to the Greater Phoenix Chamber of Commerce. Many of them buy homes and a community's environs can be a heavy deciding factor in where they buy.

### A highway's look does matter

"A point hardly ever made with highway landscaping," Brady notes, "is that the appearance of a freeway has a major impact on the people who drive them and who live in the communities along them.

"It creates a positive image if it's an attractive freeway. Things like texture control and color accents just create an overall comfortable feeling. Conversely, if you don't have landscaping, you can have a very real negative impact. Is a developer going to put money into improvements in land adjacent to an undeveloped freeway?

"Here's another point that should be considered," he continues. "If you construct a freeway and delay landscaping three, five, eight years, that's the image of what the freeway is. Even after you begin planting, it takes another three years before the freeway looks good.

"In our desert environment, we have to pay attention to growing sequences fairly soon after construction so that the highway is a contributor to the urban/suburban

environment. Fortunately, you can incorporate all kinds of water methods in an aesthetic approach."

### Low-level chemical use

Because roadside plantings are a hardy desert breed, maintenance is not a big concern.

"Insects are not one of our major problems," Brady reports. "We don't do an awful lot of spraying. When we do, we use a variety of herbicides, depending on the area. Short-term, pre-emergent herbicides are used to control weeds in urban landscape plantings; in rural areas, around road signs, guards rails and delineators, we go to longer-term chemicals. We have to be careful what we spray and where. This is a big agricultural area—citrus, cotton, and vegetables."

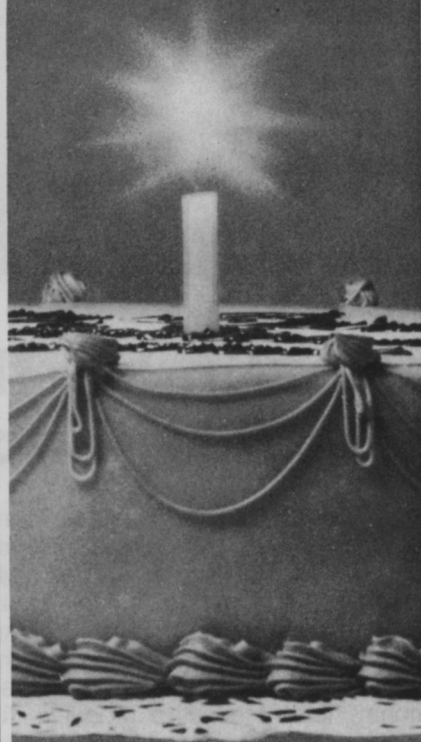
There are weeds to contend with; pig weed, sunflowers, telegraph weed, Russian thistle, and camel thorn, among others.

"You see some real weird things growing along the roads here," says a landscape worker.

"What happens is that we don't have a lot of rainfall, so that when it does rain, water collects along the side of the road. Along comes a truck from back East with seeds stuck in its tires, or a cattle truck dropping excrement loaded with seeds. The seeds germinate in the roadside water and you get a new weed, like Texas mesquite."

When the new highways are built, there will certainly be more transient trucks and, undoubtedly, more "weird" weeds. **WT&T**

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County worker Dave Brackin uses a 200-gallon rig to control Johnsongrass.

# WEED ERADICATION

In sunny San Bernadino, bare ground next to the roadside is the aim of county agriculture workers.

by Ken Kuhajda, managing editor

**T**here's plenty of room for weed growth in the nation's largest county. But, fortunately, most of the 20,000 or so square miles of San Bernadino County in Southern California is desert where weed growth isn't a problem.

In the sprawling county's non-desert areas, though, weeds and other climatic conditions like the annual Santa Ana winds throw a challenge to county deputy agriculture commissioners John Gardner and Tom Baird, and their staffs.

Weed control is but a small, yet important, part of their jobs.

Gardner's responsibility is pesticide management (application) of roadside weed control. Paradoxically, Gardner also heads pesticide enforcement.

"We have kind of a schizophrenic role of enforcement and service combined," says Gardner, holder of a master's degree in pesticide

management from the University of California at Riverside.

Baird, a 20-year agriculture department worker, supervises fire hazard weed abatement. Both say their main function is enforcement of county codes.

Baird also oversees soil erosion control, issuing permits to farmers who've devised a plan to control the effects of the annual Santa Ana winds. From September through April, the sometimes 100 mph northeast winds can roar down the Cajon Pass, stirring up dust and creating major problems. Says Baird: "We've had trucks blow over."

The seasonal Santa Anas cause concern, but Baird's main responsibility is fire hazard weed abatement. That's a year-round project, although the threat of fire is less during California's rainy winter season.

That rainy season means more work for the roadside weed control workers.

### Roadside control

Deputy commissioner Gardner is a relative newcomer to roadside control, having assumed the duty after a reorganization earlier this year. He's been with the San Bernadino agriculture department eight years—as a field aide, biologist, supervisory biologist (in pesticide use enforcement), and finally deputy commissioner. He earned the position in 1984.

Along the way he garnered experience in pesticide use enforcement but received little training in pesticide application.

He's taken a crash course in the last six months, at the same time trying to avoid the problems his department looks for. "We probably look into anywhere from one to 10 problems per week," says Gardner. That helps his workers while they are applying pesticides. They recognize a problem situation.

Among the herbicides used by department workers: amitrole, bromacil, diuron, diquat, glyphosate, simazine, and sulfometuron. Department workers are not using PGRs, but Gardner says they may in the future.

"Our workers know what they should be doing and the answers to most questions. Their education is continuous. They attend seminars and training sessions," he says.

All are college graduates (the county agriculture department hires only college grads for field and management positions), two are trained in pesticide use, and three are generalists. All are licensed pest control operators.

### Contract workers

The weed control division of the county agriculture department operates mainly by performing work for the county's towns and cities, which in turn, repay the department for the services.

The payback system, common in California, works well, says Gardner. "We offer weed control as a service to the public and we do it at cost," he says.

The county owns four 1,000-gallon spray rigs, one 200-gallon rig, and one 50-gallon rig. "It's rare when we have all four large rigs running at one time," says Gardner.

San Bernadino County is not in the chemical storage business. Trucks returning at day's end with

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Tom Baird (left), agriculture deputy commissioner, San Bernadino County, has been with the department since 1966. Fellow deputy commissioner John Gardner (right) fields a point of concern from "Holly" Hollingworth, operator of Hydrex Pest Control Co.



Bare ground next to a roadside is cause for joy in San Bernadino County. This road runs through Rancho Cucamonga.

chemicals still in the tanks are sent back out to spray until empty. "We have no intention of getting into the mass liquid storing business," Gardner promises.

Activity peaks during the winter season with pre-emergent work. The goal, says Gardner, is bare ground along the roadside. Application of pre-emergence herbicides continues into March and then post-emergent control begins.

The San Bernadino roadside weed control division is not involved with roadside landscape, says Gardner. Consequently, you won't see the complicated landscapes you see in neighboring Los Angeles or Orange counties.

The intersection of I-10 and I-215 in San Bernadino is being landscaped, says Gardner, but by a private company.

#### And after the weeds...

Weed control, an important function within the large county, is but a small part of the overall duties of the county agriculture department. Workers must be schooled in other areas.

Biologists must take an eight-part exam, including sections on pesticide use enforcement and weed control, to become state certified.

The other sections are plant quarantine and pest detection; nursery and seed regulations; insect and disease pest management; fruit, vegetable, and egg quality control; vertebrate pest management; and apiary regulations.

After passing all eight parts, an employee must then pass a management test if he or she wishes to become a deputy commissioner.

In San Bernadino County, four

deputy commissioners (Gardner and Baird, plus Rich Campana and Don Schreiber) answer to agriculture commissioner Roger Birdsall.

Ed Layaye serves an office management function as chief deputy commissioner. Some 40 employees staff the agriculture department.

Deputy commissioner Baird supervises 15 workers, including nine hazardous weed abatement officers.

After inspection, a weed abatement officer decides whether an area presents a hazard (90 percent of the of the time, the hazard is in the form of grass or weeds, says Baird). If so, the owner is informed and asked to remedy the situation.

If he doesn't, a private contractor is called in to clean the mess and a bill is sent to the owner. Some 24 contractors work for the county agriculture department.

If the owner doesn't comply, then he's subject to a fine. Most cases don't get that far, says Baird, a native of Meadville, Pa.

He still gets out to do some field work but lately the managing of the weed abatement division budget has cut his field time to 50 percent. That's enough for him.

"There's a lot of freedom in this job. I'm pretty much my own person and I enjoy that. The commissioner and assistant don't hover over you, they let you do your own thing," says Baird. **WT&T**





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# PGRs FOR HIGHWAY TURF

The use of PGRs has led to the concept of 'chemical mowing,' the idea being that growth suppression will minimize or eliminate the mowing requirement.

by Drs. T. Karl Danneberger and John R. Street  
Department of Agronomy, The Ohio State University



Vegetative and seedhead suppression of Kentucky bluegrass with Embark (left) compared to an unmowed check (right).

As state and local governments struggle with fiscal restraints, transportation departments are looking for ways to minimize highway maintenance costs.

Mowing highway rights-of-way is a multi-million-dollar-a-year cost—not including the private and government monies spent on mowing along power lines, airport divider strips and railroads. By eliminating or reducing the number of mowings, substantial savings in manpower and fuel costs could be achieved.

Some attempts, which have been successful on a limited scale, have been made to reduce mowing costs by turning highway rights-of-way into wildlife areas or landscaping the area with plant materials that do not require mowing. But due to safety factors, indirect costs or impracticability of these alternatives, the vast majority of highway rights-of-ways are still mowed.

The use of plant growth regulators

(PGRs), chemicals that retard plant growth, on turfgrass has led to the concept of "chemical mowing," the idea being that growth suppression will minimize or eliminate the requirement of mowing.

Because of the increase in the number of PGRs on the market and the publicity they get, are they a hot new item? In a lot of ways they are. However, PGRs in some form have been around for a number of years. One of their first uses was targeted to highway rights-of-way.

Growth regulators have not, in the past, received large scale acceptance because of certain limitations, although their use will undoubtedly grow.

## An ideal PGR

Characteristics and performance of turfgrass growth regulators vary. Ideally, a turfgrass growth regulator should exhibit the following characteristics:

1. Reasonably long residual activity.
2. Inhibition of seedhead and stalk formation.
3. No objectionable discoloration or chemical burning of the turf.
4. Control or suppression of broadleaf weeds.
5. No reduction in turfgrass quality with repeated usage.
6. Low toxicity to desirable vegetation, and no long-term residual.

No growth regulator currently on the market possesses all of these traits. So the use of PGRs requires an understanding of the situation and the desired end result.

For example, highway rights-of-way turf quality can be lower than that required in a home lawn. Turf quality on a roadside, observed at 55 mph, is considerably different than the turf seen while standing on a home lawn.

A PGR for highway rights-of-way should provide relatively uniform vegetative suppression. This requirement is not as important as with a higher maintained turf, but enough that the turf appears uniform at 55 mph.

A lack of vegetative uniformity may necessitate mowing sooner than desired. PGR effectiveness on a wide spectrum of plants, including grasses and broadleaves, is critical to long-term maintenance of vegetative uniformity.

A PGR for highway turf should have low toxicity to the desired vegetation. Highway rights-of-way are low maintenance turf areas that undergo enough stresses through the year without having to deal with excessive chemical stress.

Excessive phytotoxicity in combination with repeat treatments can cause thinning of the turf.

A PGR for highway turf should have at least a five- to six week residual. If vegetative suppression is less than five weeks, the reduction in mowing num-