



Gorilla-proof sprinklers or It's a Jungle out here

Interesting reactions to irrigation sprinklers have been displayed by endangered and not so endangered species of animals that inhabit San Diego's fascinating Wild Animal Park. Elaborate sprinkler and drip irrigation systems maintain the jungles, compounds, mammoth aviary and exotic gardens in the 1,800-acre park in the subtropical hills near the Southern California community of Escondido.

Three million people have visited the park since it opened four years ago. They can see it by walking and also by riding quiet, pollution-free, electric safari cars that traverse a five-mile route through the compounds.

Sprinklers of various sizes distribute most of the 850,000 gallons of water that the park consumes every day. Irrigated are the 600 acres of the park that are nearly developed.

Many sprinklers are in compounds with the animals and irrigate grasses and plants on which the animals browse. The animals, some of them endangered species, have reacted in a variety of ways to living with sprinklers.

The elephants and elands make good use of them. The elephants seem to enjoy waving their trunks through the streams of water. On warm days, the graceful elands are apt to lie in the paths of the spray.

But the gorillas and lions react in a most negative way. The gorillas are the most demonstrative. The nails of their little fingers are especially strong, says Park Horticulturist Jim Gibbons, and they use them to pry out the sprinklers in their compound. The gorillas accomplish this even though the sprin-



klers, like many in the park, are sunk below the ground in concrete collars and pop up when the water is turned on.

"We need gorilla-proof sprinklers!" commented Gibbons.

He could use lion-proof ones also. The great cats simply rip out the sprinklers with their claws. The tigers react differently again. They apparently are not annoyed by water and ignore the sprinklers entirely. So do the white rhinos, which are rather ponderous animals. They sometimes step on the concrete collars and snap the risers, not out of aggravation but simply out of ignorance.

More predictable and positive to the elaborate and extensive irrigation systems at the park is the response of the many varieties of plants. Grasses, bushes and trees are combined by skillful landscaping into looking like glamorous replicas of the African and Asian habitats of the animals.

Most of the 15,000 sprinklers in the park are Rain Birds because, as Gibbons explains, that company makes a sprinkler for every purpose and its consulting and engineering facilities are excellent.

Most of the irrigating is automatically timed by electric controllers. Power for the timers in the more remote areas is provided by batteries. Most pop-ups are set in concrete collars and are operated by valves that open and close slowly to prevent any sand in the water lines from clogging the valves.

Many of the sprinklers water native California grasses and experimental grasses in the large 100-acre compound in which a variety of animals live together: rhinos, elands, impalas, giraffes and other hoofed animals. A species of bird such as the great hornbill lives with them too. The hornbills are great black birds that don't fly. Zebras had to be removed from this community because they tended to kick the young of their neighbors.

Many of the animals in the 100-acre compounds are browsers, feeding on the indigenous fescues, bermudas and other grasses. Some of the irrigating in this compound is done with big guns which throw water for a radius of 150 feet. These sprinklers remain above ground and

are protected by piles of heavy rocks.

The principal diet of the browsers is not grass but hay and acacia trees. The park maintains an orchard where acacias are grown. These trees are cut when they are 20 feet or so high and are tied upside down onto big trees in the compound. Tender acacias are a favorite diet of the browsers, the animals

consuming 20 of the trees a day. The orchard is expanding and plans call for a stand of more than 3,000 trees.

On hilly land, the orchard is irrigated with a drip system. Water is dripped slowly into the ground from outlets located in the vicinity of each tree. Drippers prevent evaporation, maintain good soil moisture—even on steep hillsides—and discourage weeds because they irrigate

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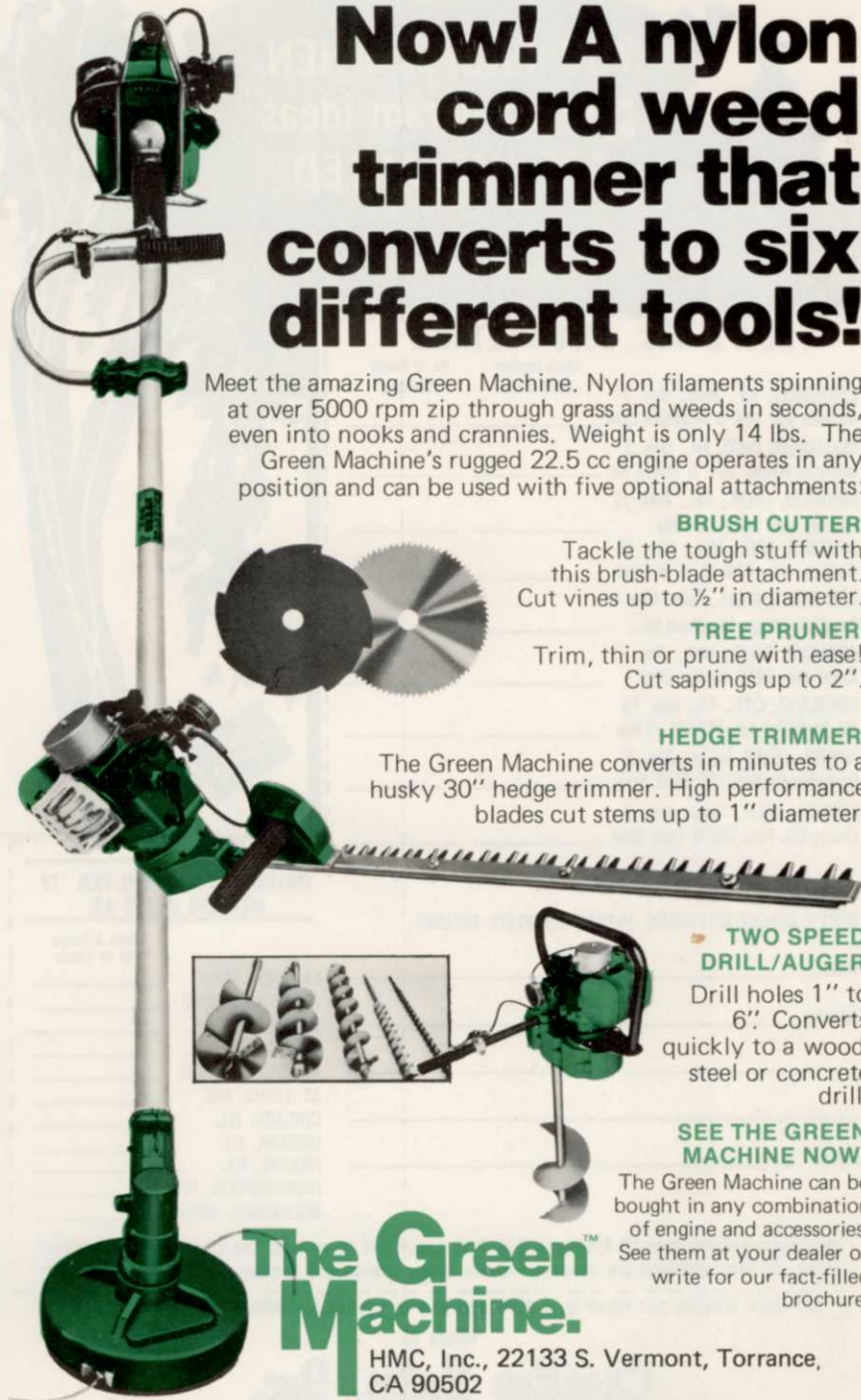
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gorilla-proof sprinklers

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Many golf courses and parks fertilize through their sprinklers. However, this isn't possible at the San Diego Wild Animal Park because it is linked with the Escondido municipal water system via a ten-inch asbestos main. The park administration wants to avoid the

possibility of contaminating the city water. So fertilizing is done by helicopter.

Water in the park is used at least twice. The park has its own sewage system which is yielding purified, nitrogen-rich water that is reused through a separate sprinkling system.

The park makes good use of indigenous grasses and other plants, such as the wild evergreen shrub called California buckwheat, and more exotic plants such as rocket pincushion from South Africa. The latter grows wild in southwestern Cape Province and reaches a height of ten feet. It has a brilliant red flower.

More than 50 acres of the park have been planted with a new technique — hydro-seeding. Seed, mulch and fertilizers are mixed in a tank and pumped out through nozzles onto the desired terrain. The seeds are protected by the mulch and nourished by the fertilizer. Grasses are started this way and even eucalyptus trees. It's a fast way to cover hillsides and valleys with green.

The San Pasqual Valley in which the park is located enjoys a climate and topography very much like that of South Africa, Gibbons observed. The Southern California valley, 30 miles north of downtown San Diego and still within the city limits, is a bit colder than Africa in winter. Last winter — an unusually chilly one — the thermometer dipped to 22 degrees above zero. The temperature can climb to 100 degrees in the summer.

The park has more than 2,200 wild animals living in settings much like their own native haunts in Africa, Asia and Australia. They are thriving and multiplying.

The park is operated by the Zoological Society of San Diego for the preservation of wildlife. Gibbons proudly declared that the white rhino no longer is on the endangered list because it has enjoyed a population boom at the Wild Animal Park and in several zoos.

In 1975 more than 25 endangered species babies were born at the park, including two gorillas and an Arabian oryx. The previous year 14 of the 19 endangered species at the park added to their respective populations.

As Dr. James Dolan, curator of San Diego Wild Animal Park, said: "The park is fulfilling its primary purpose — to preserve endangered species and to serve as a haven for vanishing wildlife." □

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