

Giant Garter Snake
(*Thamnophis gigas*)

California Rice Industry Association

*Managing
Ricelands for
Giant Garter
Snakes*

The Giant Garter Snake survives today in part because one type of agriculture—rice farming—creates habitat that comes close to supplying all of the snake's requirements.

"The snakes are doing better in the ricefields than they are in the preserves."

George E. Hansen
environmental biologist



This pamphlet describes ways rice growers can protect giant garter snakes (GGS) from possible harm due to pesticide applications and other practices. Recognizing that carbofuran is currently the industry's only rice water weevil insecticide, the US Environmental Protection Agency (EPA) has granted a two-year extension of granular carbofuran use on rice provided that certain measures to protect threatened and endangered species are observed.

Recent federal listing of GGS as a threatened species brought with it special concerns over canal maintenance, some field practices and use of the granular insecticide, carbofuran. (Furadan®5G). The California Rice Industry Association, in cooperation with EPA, California Departments of Fish and Game and Pesticide Regulation and FMC Corp., have developed this stewardship pamphlet to assure the safe use of carbofuran on rice.



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...another in a series of efforts designed to help growers expand the rich biodiversity of California's ricelands.

STATUS: GGS is listed as a threatened species by the California Department of Fish and Game and the United States Fish and Wildlife Service. The Endangered Species Act (ESA) provides broad protections for listed animals and imposes costly fines and penalties on those who harm them.

DESCRIPTION: Up to 5 feet long, GGS is olive to dark brown or black with 3 yellow stripes running along its back. In the southern end of its range, the snake shows stripes with a checkered pattern of black spots.

HABITAT: From April to October, the snake hunts for small fish and frogs in canals, drains and rice fields. Wary but fast, it seeks cover in weedy ditches near flooded fields, marshes and sloughs. From late October to late March, GGS hibernates in abandoned rodent holes and concrete structures along ditches and drains above the high water line.

STEWARDSHIP: Typical rice farming practices are generally compatible with GGS. However, it is especially important to be able to identify and know how to protect the snake. Growers and their field help should read and understand this pamphlet before spring tillage.

GGS tend to congregate and hunt for prey in puddles near rice boxes and other irrigation structures. Take extra care when buttoning or

opening fields in these areas. If given a chance, GGS will quickly flee to safety. Inhabited ricelands should be drained gradually to avoid stranding the snakes in the middle of a dry field.

Driving carefully and minimizing trips atop ditch banks should be encouraged when snakes are present, especially during spring planting.

One of the best ways to protect GGS is to follow the agricultural burn rules. After fields pass the “crackle test,” they are too dry to be productive foraging habitat. Snakes generally move back to drains to hunt frogs, small fish and other prey.

Any GGS incident possibly related to the use of carbofuran should be immediately reported to the county agricultural commissioner or to FMC Corp. at 1-800-331-3148.

Growers should attend any education programs on the safe use of carbofuran that may be offered by county agricultural commissioners, the University of California Cooperative Extension or other organizations.



Locations of known giant garter snake populations in California

Sources: Natural Diversity Data Base (CDFG, 1994) and Pesticide Use Report (CDPR, 1992)

STEWARDSHIP GUIDELINES FOR CARBOFURAN ON RICE: EPA believes granular carbofuran use on rice may harm GGS. To minimize the potential for GGS exposure to carbofuran, rice growers should adhere to the following stewardship guidelines:

- Treat for rice water weevil only if field history or monitoring indicates.
- Do not exceed the use label rate of 0.5 lb. ai/ac.
- Apply only in affected areas of the field. Most weevil damage occurs within 15 to 20 feet of field borders and levees.
- Consider using ground rigs to avoid contaminating roads, drains, banks, levees and other non-target areas, especially within known habitat.
- Apply only during calm weather conditions
- The water holding period for carbofuran fields is 28 days. Fields in closed systems must hold water for a minimum of 8 days.
- Early season applications (before July 15) are preferred.
- Preplant applications must be lightly incorporated no deeper than 2 inches.
- Use a postplant treatment only after weevil damage exceeds economic thresholds as described in UC publication 3280, *Integrated Pest Management for Rice*.
- It is illegal and ineffective to treat flooded rice fields with carbofuran. Fields must be unsaturated 1 to 2 inches below the soil surface. Re-flood immediately after application.

Free copies of this pamphlet are available from county agricultural commissioners, University of California Cooperative Extension Offices and the California Rice Industry Association at (916) 929-3996.