

VII.1 Future Directions in Grasshopper Management—An Introduction

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The following chapters about future directions in grasshopper management fall into three general categories. These categories can be described as potential new agents for grasshopper suppression, emerging new ecological information that could be integrated into grasshopper management systems, and issues that could affect grasshopper management priorities, especially on public lands.

Chapters VII.2, 3, 5, 6, 7, and 8 discuss a number of promising new candidate agents for conventional short-term control of economic infestations of grasshoppers. The agents' eventual viability will be dictated primarily by the same practical elements that affect current control tactics. These elements include

- approval by regulatory agencies,
- reasonable production costs plus economical volume for the producer,
- reasonable shelf life and consistency of demand for the distributor, and
- satisfaction plus reasonable profit for the consumer.

A candidate agent that is deficient in any critical element will not compete strongly with current technology until the deficiency is corrected.

Chapters in this section also discuss two exotic biological control agents that were considered by the Federal Government for nonconventional long-term suppression of grasshopper populations. Grasshopper Integrated Pest Management (GHIPM) Project scientists evaluated a fungal pathogen (chapter VII.4) and an egg parasite (chapter VII.9) from Australia as candidates for release in the United States to build a reservoir of biological control.

Such a strategy, called inoculative release, appeals to some pest managers because the organisms could become self-perpetuating and therefore permanent deterrents to grasshopper populations. Conversely, inoculative release is worrisome to others because it could produce undesirable side effects that also could become permanent. At this time, it appears unlikely that current regulatory guidelines will allow the release of the two exotic agents.

Chapters VII.11, 13, 14, and 15 discuss areas of unfinished long-term research on grasshopper ecology. Hopefully, the finished products someday will be incorporated into improved land-management systems. An understanding of how grasshoppers respond to controllable attributes of habitat can be exploited in management systems that reduce the frequency and intensity of grasshopper depredation.

Finally, this handbook would be incomplete without some direct input into the complex and competing social, political, and environmental issues that affect grasshopper management on public lands. Chapters VII.10, 12, and 16 are contributions that obviously are within the competence and responsibility of GHIPM and are of interest to the Project. The information is intended not to provide definitive solutions to problems but rather to be available when conflicts of interest must be resolved.