
Abstract. Iliamna remota Greene (Malvaceae) is an endangered species that is endemic to Langham Island in the Kankakee River, in Kankakee County, Illinois. In 1984, the population was suggested to be in danger of extinction after the total number of flowering stems declined from 109 in 1981 to 49 in 1983. The population was also concentrated into five stands in 1983, rather than a more continuous population as noted in 1973. Further supporting notions of extinction (Schwegman, 1984). A recovery plan was drawn up in 1984 to avoid extinction and ensure population fitness. Predominant recovery plan recommendations included mechanical and chemical eradication of invasive, woody shrubs, namely Lonicer a maackii, to reduce canopy cover, controlled burns to maintain open environments optimal for I. remota growth and development, and yearly surveys of the population including direct counts of flowering and vegetative stems and seedings (Schwegman, 1984). The population was maintained for almost 20 years as per recovery plan suggestions. Data from this study showed that there was an overall increase in population size from 180 total stems in 1983 to 1,846 stems in 2002 (Glass et al., 2003). However, management of this island has been lacking since 2005, which may increase the potential for declines in the population.

The objective of this study was to estimate the population size of Iliamna remota on Langham Island to provide information to determine the status of the population. This information would be useful for management plans.

INTRODUCTION

Iliamna remota Greene (Malvaceae) is a perennial, herbaceous plant which is endangered in Illinois and endemic to Langham Island in the Kankakee River, in Kankakee County (Figure 1) (Herkt and Ebinger, 2002). This species was first documented to be on the island in 1872 by Reverend E. J. Hill (Strausbaugh and Core, 1932, Sherff, 1948). The population occurs along the northwest portion of the island, wherein most plants have been noted to exist in abundance along the ridge leading down to the river (Sherff, 1946; Schwegman, 1984). In 1986, Langham Island was dedicated as an Illinois Nature Preserve with the primary goal of preserving the Iliamna remota population (Schwegman, 1984).

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The objective of this study was to estimate the population size of Iliamna remota on Langham Island to provide information to determine the status of the population. This information would be useful for management plans.

MATERIALS AND METHODS

Permission was granted for this study through an Illinois Nature Preserves special permit and the Illinois Department of Natural Resources.

A GPS unit (Trimble Pro XRS) was used to mark positions where I. remota first occurred, concentrated colonies, and the last area where I. remota occurred. Population length was based on first and last coordinates. Coordinates were based on the Illinois State Plane East Zone global positioning system.

Position coordinates where I. remota occurred were overlayed on a high-resolution map of Langham Island (created by GIS specialist, Roger Diercks of Kankakee County). Position points (on map) were formatted to correspond to stem numbers assigned using a Jekyl scale.

A visual survey of species occurring among and at the edge of I. remota colonies was recorded.

Mean numbers of flower buds, open flowers, and fruits per stem were recorded from ten colonies in 2005.

The number of fruits per stem was recorded based on random choices of plants per colony in July 2005.

Fruits were collected from six random colonies, stored at room temperature (22°C), treated with a 10°C R. M. King & H. Robins. 1981. A Field Guide to the Wildflowers of North America. Houghton Mifflin, Boston, MA.

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Finally, seeds of fruits collected in this study were shown to be viable, but the percent germinated was low (36%). Since seeds were mechanically removed from the fruit, embryos may not have been fully developed; thus explaining a low germination percentage in this study.

RESULTS

The Iliamna remota population occurred from the middle to northwestern portion of the island, with a length of approximately 325m (Figure 2). The population was continuous within this range with concentrated areas recorded as colonies in order to estimate population size.

Coordinates per colony are shown in Table 1. Total stem number was 1074 (Table 1). A visual survey showed Poss pratiensis L. and Lonicera maackii, two non-native species growing with I. remota, could therefore, possibly cause future decreases in population size. Further monitoring and managing via prescribed burns and chemical control of exotic species may improve the survival and fitness of the Iliamna remota population on the island.

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