# TEMPORAL VARIATION IN THE GROWTH, NITROGEN PARTITIONING, AND CRITICAL NITROGEN CONCENTRATION OF *ARUNDO DONAX* L. (POACEAE) IN RELATION TO HERBICIDE EFFECTIVENESS

A THESIS

Presented to the Department of Biological Sciences

California State University, Long Beach

In Partial Fulfillment

Of the Requirements of the Degree

Master of Science in Biology

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B.S., 1996, California State University, Dominguez Hills

December 1999

ABSTRACT

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*Arundo donax* L. (Poaceae), a pestiferous riparian weed, was grown hydroponically in a greenhouse, in soil-filled pots, and in the field to determine changes in growth and nitrogen partitioning and, under nitrogen limitation, to determine critical tissue nitrogen concentration. Soil-filled pot and field plants were sprayed with glyphosate herbicide to determine if application during a period of low tissue nitrogen concentration resulted in a lower post-spray regrowth rate.

There were significant changes in growth and nitrogen partitioning among tissues as hydroponic plants grew. Green leaf blade nitrogen concentration decreased during the summer for plants grown in pots and in the field. There was significant variation in critical nitrogen concentration among tissues and growth treatments.

There was no nitrogen concentration effect on regrowth rate for plants sprayed during the summer and fall of 1998; glyphosate allowed less than 0.5% regrowth when compared to a control.

ACKNOWLEDGEMENTS

I would like to thank my thesis advisor and committee chair, Dr Antonia H. B.M. Wijte. Her faith in me allowed this thesis to become a finished work. I would like to thank all the faculty and staff in the Department of Biological Sciences at CSULB, especially Judy Brusslan, Alan Miller, Rich Grogan, Kay Belletti, Cory Zinn, and Philip Baker. My interactions with them helped me to remember that doing science is a 'possible dream.' I also want to thank Erica Motamed, Cromwell Espineda, Alicia Linford , Norbert Languyn, and my other colleagues who always had a kind word of encouragement during my tenure at CSULB. Others who helped include: Dr. Robert Petty at UC Santa Barbara; Jim Asmus, Rick Griffiths, and Bill Berry at Camp Pendleton; and Leroy Jackson at Monsanto Chemical. I want to thank my mother for her support over the years. It was she who opened up the biological world to me at an early age. I thank my Uncle, Burr Peck, who helped finance my education at CSULB. Finally, I want to thank Vanessa Higbee, whom I met while working on my thesis, and later married.

This work was funded in part by a grant from the National Sea Grant College Program, grant number NOAA NA66RG0477, project number 07201798, through the California Sea Grant College System. (R/CZ-151)