

GRADUATE THESIS DEFENSE AND LECTURE SERIES
Environmental Studies Department

Vegetated Filter Strips
a Case Study of Creeping Wild Rye (*Leymus triticoides*)

When: Tuesday, October 18, 2005, 4:30pm to 6:00pm

Where: BBC103 (smart room)

Presenting: **Michael Ashworth Powers**, SJSU Environmental Studies, Graduate Student



Michael Powers

Disced field, filter strip, conservation easement.



Vegetated filter strip

About Michael Powers:

Mike grew up in Los Gatos backpacking in the Sierra Nevada and caring for the family garden. He attended UC Santa Cruz and earned a B.A. in Environmental Studies with a dual emphasis in Culture & Resources, and Agroecology. He became more interested in constructed wetlands. He has worked at the UCSC Center for Agroecology and Sustainable Food Systems, and in landscape installation. He volunteers for the Coastal Watershed Council monitoring stream flow and water quality, and the Pack Your Trash beach clean-ups. Mike entered SJSU's Environmental Studies graduate program in 2000. His study site is in Harkins Slough. Mike is a musician, dancer, singer, surfer, hiker, and botanist with an eye for medicinal herbs.

Abstract:

Vegetated filter strips are defined as areas of vegetation designed to remove sediment and other pollutants from surface water runoff. Creeping wild rye (*Leymus triticoides*) is a California native grass used in vegetated filter strips, where it must compete with non-native plants for establishment. The objective of this thesis research was to determine the extent to which *Leymus triticoides* seed is effective in competing with non-native weeds, and reducing erosion and impacts to water quality in vegetated filter strips during establishment, compared to *Leymus triticoides* plugs planted at 9/m² and 4/m². Percentage cover of vegetation was measured monthly. Sediment and nutrient concentrations were measured from storm event grab samples. The higher density planting of plugs maintained a greater average percentage cover of vegetation throughout the entire trial ($p < 0.001$). The means for sediment and nutrient concentrations were all lower in the seeded plots than either of the plug treatments.