

Effects of imazapyr treatment of a *Spartina* meadow on Benthic infauna

WSU Long Beach

Wednesday, April 19, 2006

First run data on benthic infauna – post treatment of the *Spartina* Meadow at the Porter Point Unit – Willapa National Wildlife Unit.

Not for publication

Background.

Study Site

4 sites in the southern part of willapa bay at the Porter Point Unit. *Spartina* meadow ~10-15 years old

OT-Old Tilled site – tilled 2001/2002 *Spartina* free since then, herbicides used for spot treatment of new infestation. – site ~100 acres

ST- Sprayed – tilled- Sprayed with imazapyr 2004/2005 tilled 2005 – 100 acre

S-Sprayed - Sprayed with imazapyr 2004/2005 ~ 100 acres

BM- Bare mud – adjacent mudflat ~ 100 acre

Methods

Collection of Benthic Infauna Samples

Benthic invertebrates were collected from 4 sites—Bare mudflat, tilled, sprayed and tilled, spray only, on February 21 and 23, 2006. From each site, 5 sediment cores (5-cm diameter to a depth of 5 cm--98cm²/3080cm³/.0098m²/.003m³ **choose one**) were taken (using a shrimp gun?) at random locations within a 25 meter radius. The core tube was inserted into the sediment to a depth of 10 cm , withdrawn, and the upper 5 cm of sediment was retained for analysis. Core samples were immediately placed in a large sifting tub (500-um mesh) and sieved in the field using a nearby channel. The tub was submerged in just enough water to cover the sample and using a rigorous back and forth/up down motion excess mud was removed. In some samples, it was necessary to gently break up the mud using thumb and forefinger. When the samples were relatively free of mud, they were rinsed with isopropyl alcohol, and transferred into jars using rubber spatulas. The jars were topped off with isopropyl alcohol. In the laboratory, the samples were rinsed using ethanol. Large pieces of debris were checked for remaining organisms and subsequently removed. The sample was then stained with rose bengal stain (D.M. Rosenberg et al. 2001)

Using a dissecting scope, the invertebrates were separated into groups and identified to the lowest taxonomic level possible given the EXPEDITIOUS time frame of this project.

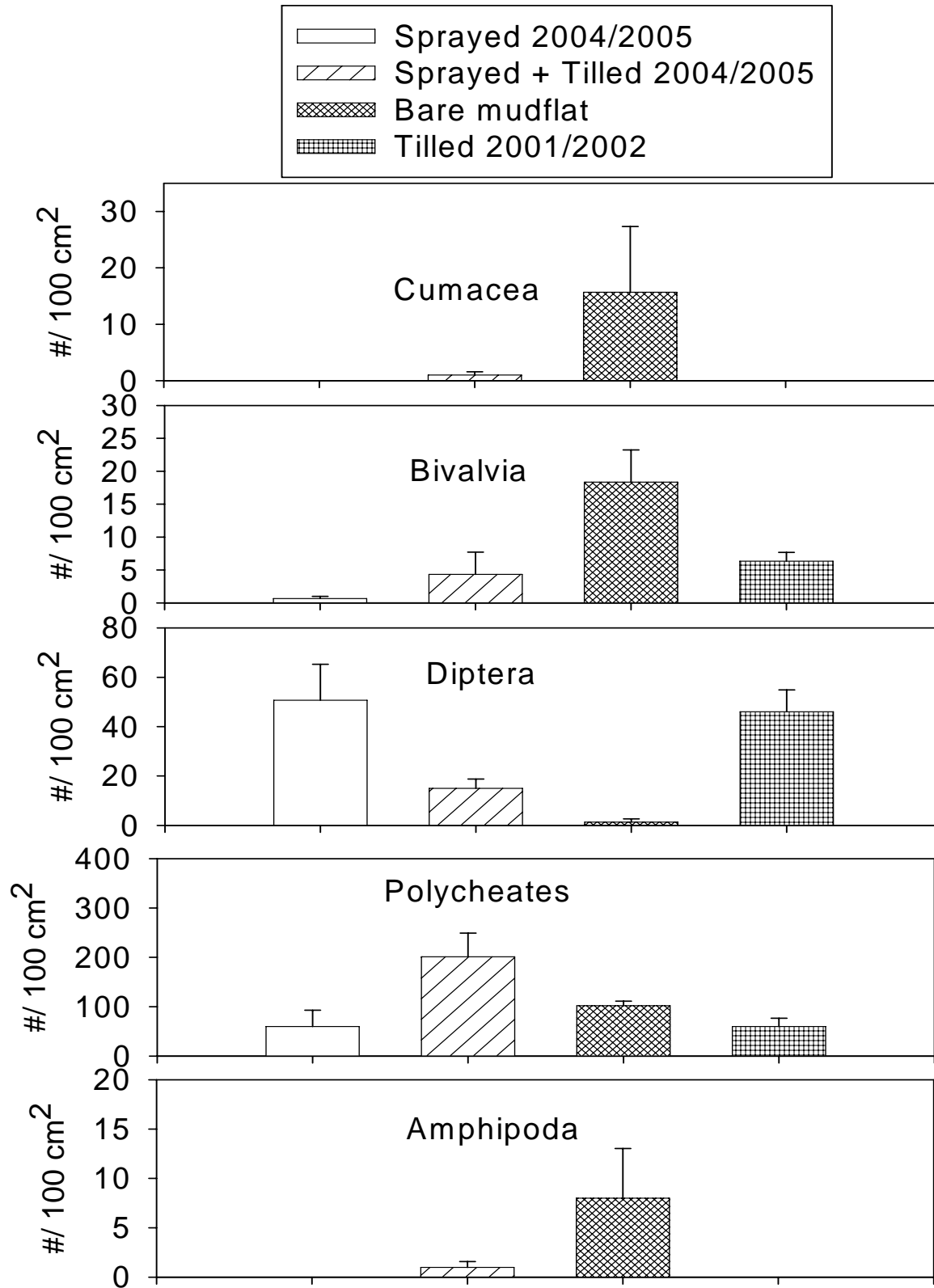


Figure 1. Post-treatment benthic infauna density of *Spartina* infested mudflats. Samples collect 2-21-06

Previous data collected in the summer 2003 (pre-imazapyr).

Mean Benthic infauna - Porter's Point

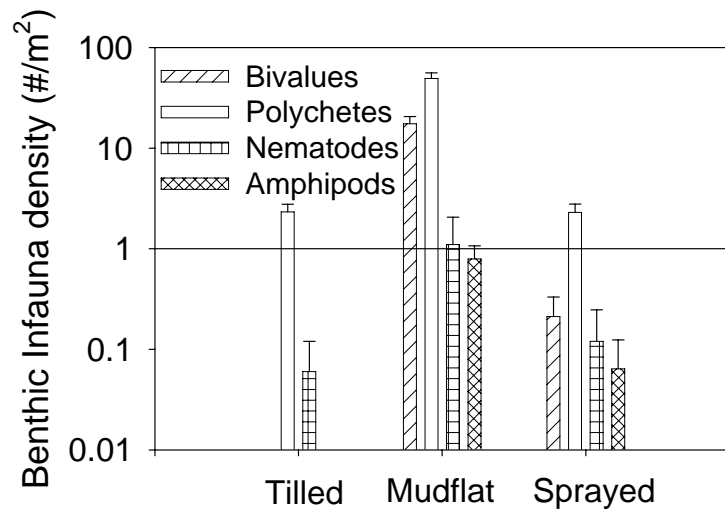


Figure 5. Shorebird prey density (mid-summer 2003) in Porter Point as a function of Spartina control method.