

## Wading Shorebirds Habitats, Food Resources, Associated Infauna, Sediment Characteristics and Bioremediation Potential of resident Microbiota of Deltaic Mudflats

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We are surveying the microbial, microalgal, meiofaunal, and macrofaunal assemblages at three estuarine river deltas in the eastern Beaufort Sea to better understand the importance of these systems as food resources for wading shorebirds. Our specific objectives are to (1) quantify the spatial and temporal distribution of bacterial assemblages, meiofauna, and macrofauna at coastal lagoons and river deltas along the Beaufort Sea coast within the USFWS Arctic Refuge at three sites associated with the coastal lagoons and deltas of the Jago, Hulahula/Okpilak, and Canning Rivers, and (2) characterize the sediment pore water chemistry for salinity, ammonium, organic carbon, chlorophyll *a*, stable carbon isotopic signature, and sediment grain size at sample locations representative of each site.

Table 1. Samples collected in 2011:

|                           | Canning | Okpilak/<br>Hulahula | Jago |
|---------------------------|---------|----------------------|------|
| Birds Captured            | 39      | 37                   | 44   |
| Bird Surveys              | 6       | 10                   | 10   |
| Macroinvertebrate samples | 121     | 289                  | 250  |
| Meiofauna samples         | 84      | 189                  | 182  |
| Soil Samples              | 84      | 189                  | 182  |
| Algae Samples             | 84      | 189                  | 182  |
| Ammonium Samples          | 84      | 189                  | 182  |
| Bacteria Samples          | 3       | 5                    | 5    |

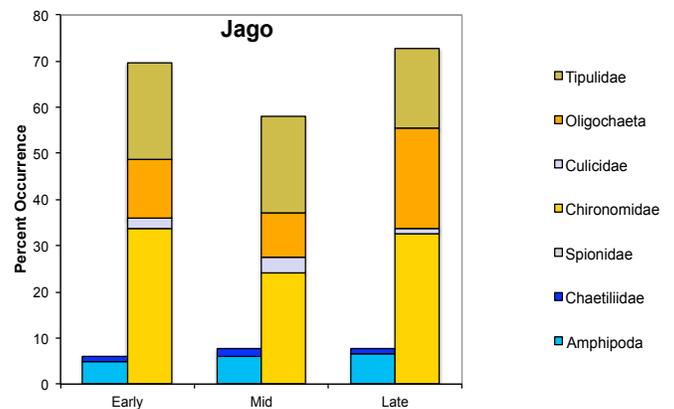


Fig. 1. Example of the relative abundance of macroinvertebrates at one site during three sampling periods.

To date we have completed one field season and collected samples from three sites (Table 1). We will continue to analyze data to determine the abundance (Fig. 1) and distributions (Fig. 2) of invertebrates and shorebirds at the three sites. In 2012 we will conduct our second year of sample collection and will continue our analyses.

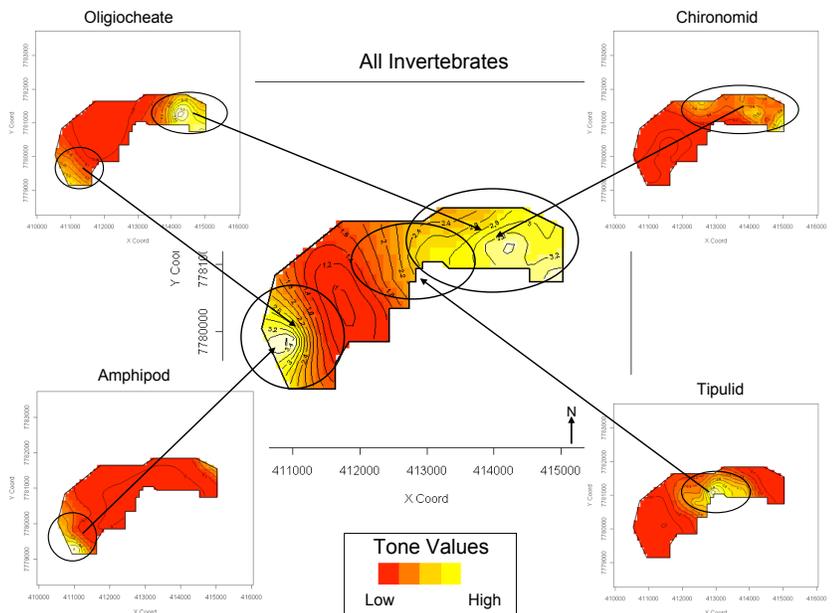


Fig. 2. Example of how macroinvertebrates are distributed at one site during one sampling period.

