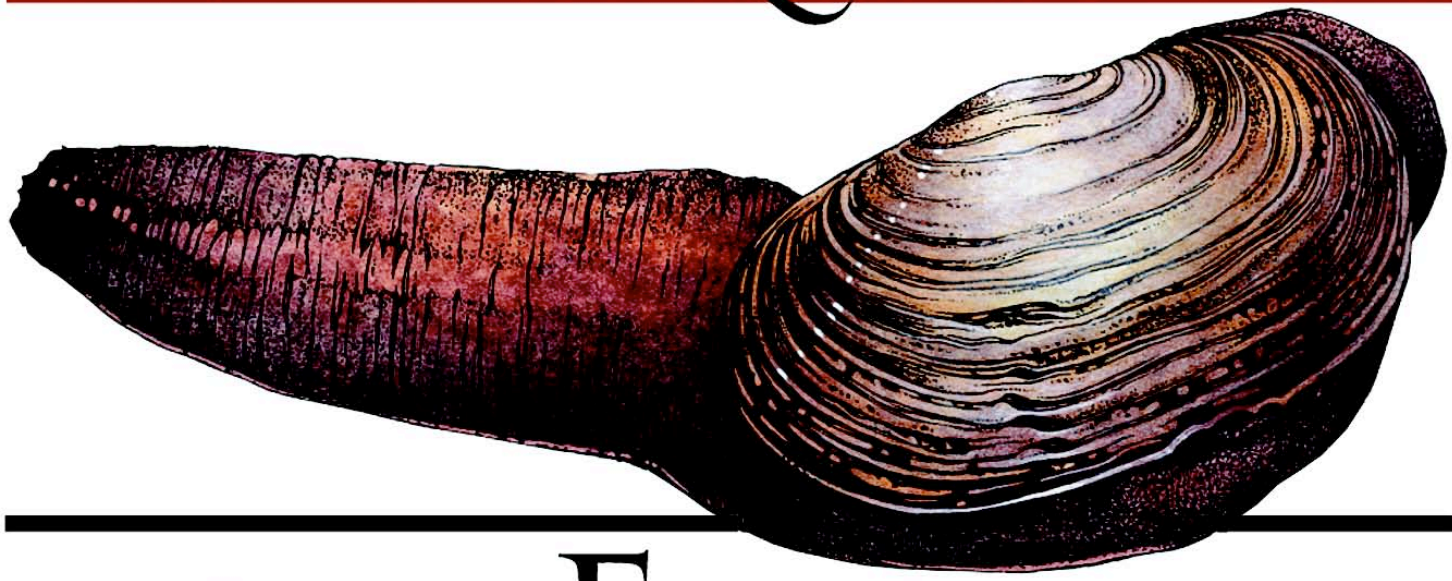
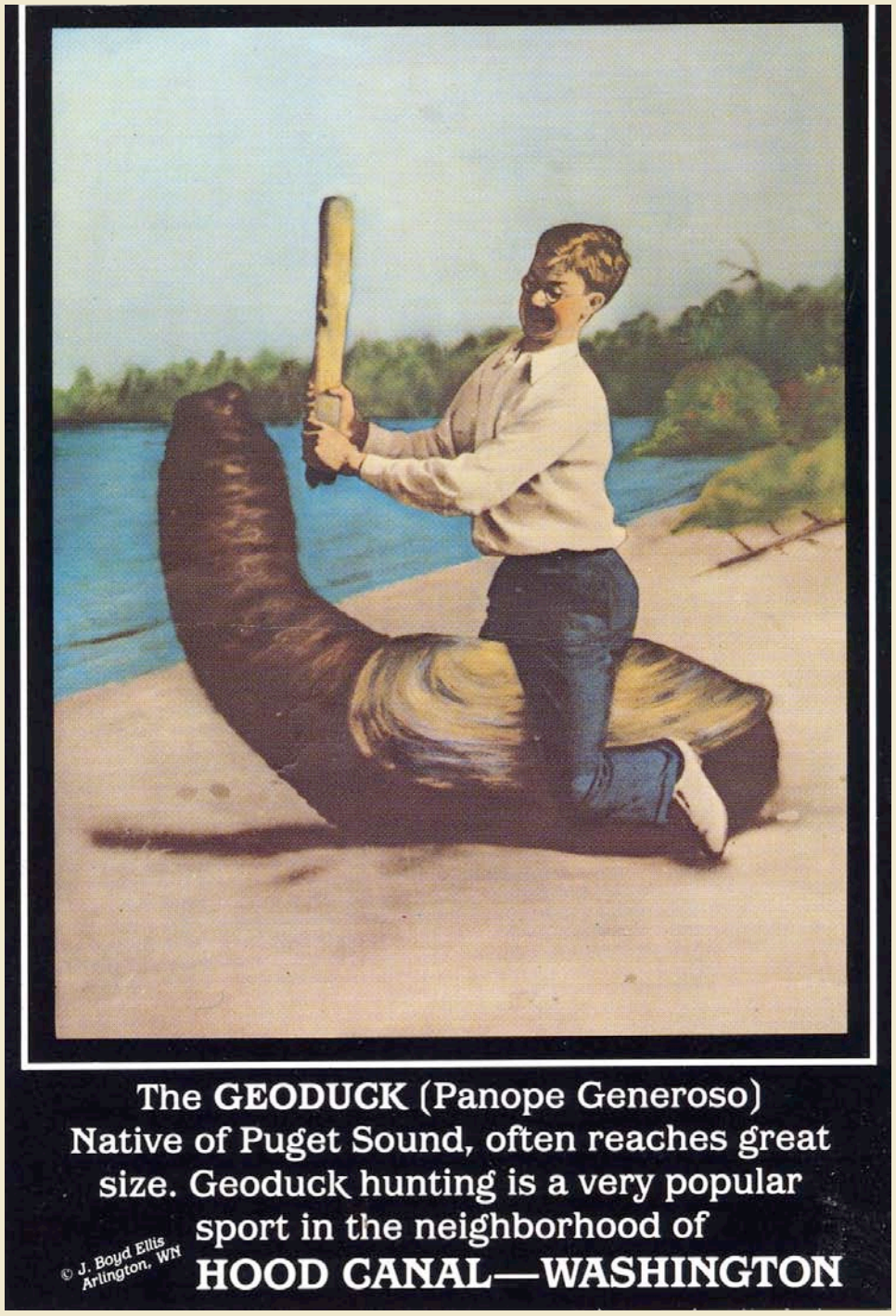
# Bivalve Aquaculture



# and the Environment

Seattle • September 13th - 14th, 2007




# Workshop focus:

**What is the current state of knowledge regarding on-bottom intertidal bivalve aquaculture and its interactions with the environment?**

**What are future research and information needs?**

# Online Survey of Research and Information Needs

**47 responses from diverse individuals with interest in shellfish aquaculture**

**89% fromWashington, 2% from British Columbia and 1 other**

**Respondent aquaculture interests:**

- 16 (34%) Natural resource managers
- 8 (17.0%) Aquaculture industry employees
- 6 (13%) Scientists
- 6 (13%) Residents or property owners
- 2 (4%) Public interest group representatives
- 9 (19%) Others

BIVALVE AQUACULTURE AND THE ENVIRONMENT

# Online Survey of Research and Information Needs

## Theme areas:

1. Genetics and Disease
2. The Effects of Aquaculture Structures
3. Water Column Effects
4. Benthic Effects
5. Other

# 1. Genetics and Disease

**Likelihood of genetic interaction and disease transmission between cultured, wild geoducks examining:**

- reproductive timing and success
- larval dispersal
- culture density
- broodstock source

**Effects, if any, of cultured geoducks on wild genetic diversity including local adaptations and population resilience**

**Potential to minimize risks through:**

- hatchery protocols
- development of sterile (triploid) animals
- understanding of geoduck biology

# 2. Effects of Aquaculture Structures

**Positive and negative effects of exclusion devices on:**

- sediment dynamics
- habitat availability and quality
- benthic community diversity
- other species like salmon, birds, crabs, algae

**Impacts of aquaculture-generated marine debris**

**Potential to minimize risks through alternative technologies**

# 3. Water Column Effects

**How water column characteristics (turbidity, nutrient levels, contaminants, etc.) are affected by**

- filtration and presence of cultured shellfish
- planting and harvesting methods
- culture density
- seasonal cycles

**Relationship of above factors to different flushing rates**

# 4. Benthic Effects

**Ecological effects on biodiversity and on other species that rely on benthos from:**

- presence of structures, cultured animals
- culture density
- seasonal cycles

**Shoreline, substrate and habitat considerations for siting shellfish farms**

**Biological and physical impacts of and recovery from harvesting methods (e.g. use of "stinger")**

**Potential to detect and assess disturbance and physical impacts and differentiate from natural and other human-induced change**

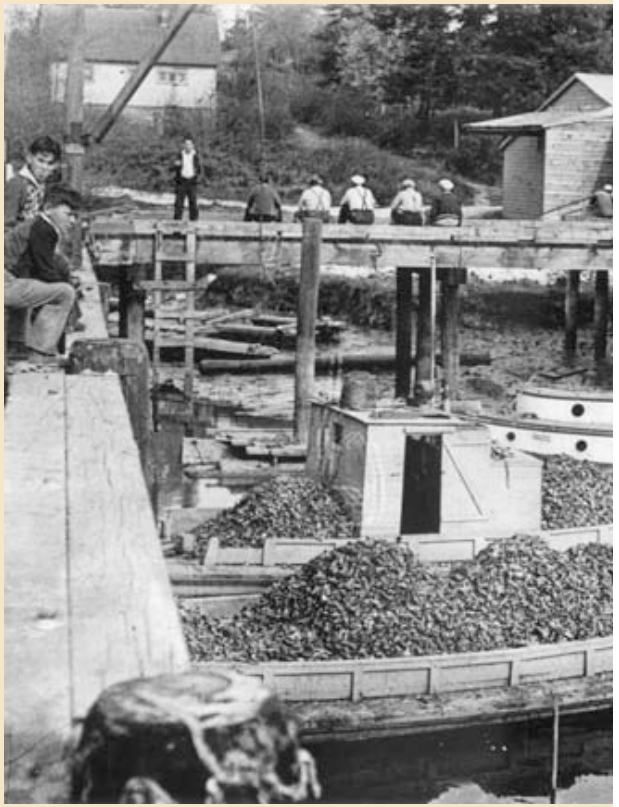
# 5. Other

**Ecological interactions with and management implications for:**

- Cumulative impacts of human activities
- Carrying capacity
- Wild stock fisheries
- Invertebrate and fish species spawning and recruitment
- Estuarine habitats like eel grass, kelp and sand dollar beds
- Predator and other wildlife populations

**Economic and social impacts**

- Aesthetic and recreational effects
- Comparative economic benefits of alternative tideland uses




Sea Grant
Washington