

# AN INTERDISCIPLINARY ENVIRONMENTAL EDUCATION APPROACH TO AQUATIC INVASIVE SPECIES INSTRUCTION FOR SECONDARY STUDENTS

Purpose Statement: The **Interdisciplinary Environmental Educators Workshop (IEEW)** is an intensive two-session experiential opportunity for area teachers and school administrators to learn how to safely and effectively use canoeing skills and equipment to merge their curriculum, selected state standards and **aquatic invasive species (AIS)** identification methodology into an effective environmental education program. The IEEW will enable teachers to expose students to the importance of AIS and encourage students to become future citizen researchers and expose them to the wonders and joys of the area's pristine rivers and lakes.

Introductory Statement: Recently the environmental and economic importance of AIS has become evident. At this alarming juncture it is critical to engage teachers and encourage students to become a more active part of the solution equation. The IEEW workshop will aggregate local teachers into effective teams to design interdisciplinary curricular materials to better address AIS through environmental education. Science/Ecology, Physical Education and History/Cultural and other instructors will review local curricula, state standards and AIS materials with safe conduct on waterways. They will now have an opportunity to learn how to efficiently and safely canoe, conduct outdoor group aquatic activities (methods) and imbed the state standards into their science, environmental, history, physical education or other curriculum with AIS awareness. The emphasis of the workshop will be on canoe/water safety, group dynamics, AIS identification and the environmental interdisciplinary outdoor teaching methodology.

## Learning Objectives:

The objectives of the workshop are for participants to learn:

- How to merge various educational disciplines, state standards, local curriculum and AIS material into a meaningful interdisciplinary environmental awareness programs
- Methods for conducting Interdisciplinary-AIS classes in the aquatic environment
- Basic canoe paddling, handling, portaging skills and ethics necessary to safely explore and survey local waters
- Safety concepts necessary to conduct environmental education classes within the aquatic environment
- How to identify, collect, preserve and report AIS samples/data

### Session 1 Indoors (place to be determined)

- Welcome- coffee and nametags
- Introduction of FOTSCH board, instructors and participants
- Workshop overview and expectations
- Survey participants- swimming ability, medical concerns
- Review relative (content areas) state standards
- Determine what is an AIS and their environmental and economic importance
- Ascertain how Aquatic Invasive Species and water quality work can be integrated into curriculum
- Review available AIS materials including
  1. Clean Boats Clean Waters (CBCW)
  2. IMRivers
  3. DNR
  4. Sea Grant
  5. Useful web-sites
  6. Aquatic Invasive Species Education and Outreach Materials
  7. College/University materials
  8. Others
- Workshop Safety requirements including Personal Floatation Device (PFD) policy- always used when in canoes or near water
- IEW Site specifics- workshop site, toilet facilities, first aid kit, cell phone, etc.
- Workshop emergency procedures

### Student Personal Behavior Considerations

- Control substances (alcohol/drugs)
- Private property rights
- Litter
- Etiquette –at landings and on water, noise, etc.
- Parental permission protocol
- Limiting electronic entertainment
- Horseplay on the water

### Student Personal Considerations:

- Swimming ability- Identify non swimmers
- Medical/physical concerns/limitations
- Physical fitness and warm-ups

### Water Safety Equipment:

- Canoes: types, parts, materials, care
- Paddles: types, parts, hand positions, sizing, care
- Life jackets (PFD): types, materials, correct fit, care

### Laboratory/Field Equipment:

- Taxonomy keys

- AIS prepared samples
- AIS/plant collection supplies
- Aquatic plant field guides

Group Dynamics and Class Control:

- Group aware of expectations
- Discipline problems- affects safety
- Preliminary objectives should be evident
- Group visibility/compactness- essential for monitoring, partnering

Instructional Considerations- covered indoors and practiced outdoors in Session 2:

- Safe paddling and boat handling- state laws
- Personal equipment- raingear, sunscreen, drinking liquids
- Safety and rescue- where to get help: 911-cell phone
- Boat carries: Suitcase, overhead
- Launching: from land or docks- stern person enters first
- Tandem communication
- Hull trim
- Positions: sitting, kneeling, standing?
- Aquatic plant collecting ethics and care

Safety & Rescue Considerations- covered indoors and practiced outdoors on Day 2:

- Canoe/Buddy system- looking out for each other
- Hypothermia- Help & Huddle, Care (plastic bags/space blanket), clothing
- Hyperthermia- hydration, clothing
- Rescue procedure- stay with canoe- keep upstream. Reach-throw first.
- Rescue priorities- people, canoes, gear
- How to empty a boat full of water
- Canoe-over-canoe rescue

Strokes & Maneuvers:

- Strokes- forward, back, “C,” “J,” pushaway, pry, draw, crossbow
- Demonstrational skills:
  1. Forward travel in reasonably straight line
  2. Stopping in reasonable distance
  3. Spin- pivot in place
  4. Turn arc both directions while underway
  5. Navigate through maze
  6. Repeat 1-5 in both stern and bow positions
  7. Repeat 1-5 while solo canoeing

AIS Investigations:

- Scientific hypothesis development and method
- Review Wisconsin Standardized Protocol
- Baseline aquatic plant sampling methodology
- Survey local lake littoral zone applying learned canoeing and safety skills
- Collect plants ethically and mark locations
- On shore- identify collected samples and compare findings
- Complete Aquatic plant report

Assessment/Evaluation:

- Each participant will complete an evaluation sheet (to be developed)
- Each participant will forward a written lesson incorporating state standards into their curriculum integrated with an other area of instruction and AIS. Generated lessons will be shared with all participants.

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