

## **Ecological Consciousness**

### **Ecological Macro Model:**

#### **SALMON ENERGY** (Cycles and Interconnections)

##### Rationale:

Ecological understanding is much more complex than we often realize. Most people would probably not associate salmon, which live out most of their lives in salt-water oceans, with forests which are land-based. This macro model helps the learner to start to look for interconnections and causal linkages in other examples of interdependent ecological systems.

##### Philosophy:

Usually we learn about salmon or other wildlife by reading about them or watching a video. To really understand the incredible mystery of the salmon and the adversity they face, one has to become the salmon and experience first-hand (that is, create a visceral reality) what it would be like to “swim upstream” in order to achieve an objective. Trying to create an ecological consciousness might be thought of as somewhat analogous to the journey of the salmon.

##### Significance to the Critical Picture:

It is now understood that healthy forests such as those on the Pacific Coast of BC are healthy in large part because of the salmon (Suzuki, 2002). Even in areas far from the river, the energy of the salmon (primarily nitrogen ingested from the ocean) is carried by many organisms and used by the trees and other plants. There is nothing wasted in this natural process. The amount of entropy is minimal because the degree of human-made complexity is much less than that in the human world dependent on fossil fuels.

##### Objective:

-to see how many salmon can reach the salmon’s spawning area by avoiding all the inherent dangers.

##### Concepts:

-transfer of energy; ecosystems; interdependence; healthy forests.

##### Equipment:

-designate 6 zones with sticks or rocks; piece of rope; cards; popcorn kernels.

### Sequence and Rules:

1. In a group of 25 people, 19 are designated as salmon; the others are either killer whales, fungi, eagles, bears, man or dams (one of each).
  2. The salmon must run up the stream without being caught. The killer whale has a zone at the beginning of the route. It catches the salmon by touching them with his/her head only.
  3. Next zone is the bear who must join her/his hands around some body part and count to eight.
  4. Next zone is the eagle which must touch with a foot only.
  5. Next zone is the human which must touch by throwing a rope attached to a small ball.
  6. Next zone is the dam. The dam is a rope across the stream that salmon must jump over.
  7. The final safe zone is the spawning area.
  8. Fungi can operate anywhere and catch by holding on to a body part for a count of 8.
  9. When a salmon is caught, they follow along at the back of the live salmon or preferably keep them in the game, you could hand out "lives" (corn kernels) and let them continue.
  10. Count how many salmon reached the spawning zone.
  11. Once the macro model is over, each dead salmon explains what eventually happens to it.
  12. You could have laminated cards that explain how the salmon energy is used by each species; these cards would be handed out to the dead salmon who could explain their card during the debriefing.
  13. Of course, all safety precautions should be taken, having checked the area out previously and using a shallow stream or using life-jackets as well.
- (Based on Suzuki, 2002).

### Debrief:

1. How is the energy of the dead salmon used by each species?
2. How does this affect the whole forest?
3. How is energy transferred?
4. What happens to the salmon after they reach their destination and spawn?
5. How do humans disrupt this natural flow of energy?
6. What is biodiversity?

### Intended Learnings:

1. Nature has evolved so that death does not mean total loss of energy, it means a transfer of energy that will benefit other species.
2. Each species has a role to play in the transfer of knowledge.
3. Even though salmon spend most of their time in the oceans, they help to keep the forests healthy.
4. The purposes of species in the wild are not always obvious- natural systems are complex.

### Variations:

Although perhaps not as effective, this macro model can be played out anywhere where there are narrow borders (e.g., a small ravine, trail) as well as during the winter time on frozen creeks or ponds where the resistance to forward motion is impeded by the snow.

# SALMON ENERGY

