



Teacher Background

An Ending -- And A Beginning

This final chapter introduces a subtle but important link between Pacific salmon and the fertility of the broader environment which they inhabit, including our magnificent coastal forests.

Pacific coast mountains are known to have poor soils. Derived from young rock to begin with, their soils have been stripped repeatedly by recent glaciations. On the east coast, where soils are much more fertile, Atlantic salmon do not inevitably die after spawning, but may live on for several years, migrating to the ocean and back each year to spawn. Is it simply a coincidence that in the nutrient-poor streams of the west coast, spawning salmon always die soon after spawning, leaving their carcasses close to where their eggs were placed? Scientists suspect this is not a coincidence, but rather an adaptation that has helped improve the survival chances of the young salmon. Salmon fry don't eat the carcasses directly, but nutrients carried upstream in the adults' bodies may enrich all the life in the stream. At the same time this annual supply of natural marine fertilizer has probably been an important factor in sustaining productive northwest forests.

Lesson Plan

Materials

- One copy per student: AN ENDING -- AND A BEGINNING

Procedure

This short epilogue can be used as a brief written assignment.

Answer Key:

1. In fresh water salmon fry eat water insects.
2. Trees and other vegetation stabilize the soil with their roots and provide shade over the water. Their branches and roots create sheltered micro-habitats and their leaves are food for the insects which salmon fry eat.
3. a. Eelgrass, in the form of detritus, is the food source of many animals which salmon smolts eat.
b. Eelgrass helps shelter salmon from their enemies.



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As the little salmon prepare for the next phase of their lives, let's take a look at an important gift Hyak has left her babies. When she made her final trip up the river, she carried in her body trace minerals from the food she had eaten in the ocean. These minerals are scarce in our mountain soils and badly needed by plants of the forest.

Soon after she died, a coyote found her body, still carrying its valuable load of minerals. The coyote dragged the carcass to higher ground, fed on it, and left the remains. Soon an eagle found it and scattered what was left over a half a mile of forest. This may not sound like a very elegant ending at first glance, but take a second look!

Some of her body's nutrients washed directly into the river, providing food for water insects.

1. How could this help young salmon survive?

Some of the minerals from her body were left on the ground as droppings by the coyote and the eagle. They have now been taken up by the roots of large trees, trees which shade the river along which later generations of salmon will spawn.

2. How do young salmon benefit from healthy trees growing near their streams?

Some of the minerals have even washed all the way downstream to the estuary. They are already beginning to fertilize the beds of eelgrass in which her own young have been hiding.

3. What are two ways the eelgrass will be used by the little salmon?

a.

b.

Hyak's offspring are now ready to leave us. They have already begun their migration up Hood Canal and out toward the open ocean. There they will continue to take their chances with the many dangers salmon face. With your help and ours, and with a little luck perhaps, we hope to see them back this way four years from now!