

Thinking Like a Mountain: Journaling with Aldo Leopold

Essential Question(s):

How does the loss of one species affect the whole ecosystem?

At a Glance:

Learners are introduced to the work of a well-known naturalist and his perspective of interconnectedness within an ecosystem. They complete a worksheet based on an example of his work and practice incorporating this new perspective in their own journaling.

Background Information:

Explorers and naturalists kept logs of their journeys and discoveries through nature journals. Drawings and writings were used to describe new species of plants and animals, as well as distribution and behaviors.

Aldo Leopold was a well-known professor, forester, and naturalist who has been called the “Father of Wildlife Ecology”. It is said that he knew more about America’s wildlife than anyone else of his time. Aldo grew up in Iowa, but also had the opportunity to work in the southwest during his time with the Forest Service. Though he had always been interested in the natural world, Aldo’s respect for the interconnectedness of nature grew during his time here. He later taught the philosophy that people cannot hurt one part of the web of life ecosystem without the rest of the web being affected. This ideal is outlined in his essay “Thinking Like a Mountain”.

In 1935, Aldo and his family bought an old farm in Wisconsin, where he lived until his death in 1948. Here he produced years of nature journals that were published in his book, “The Sand County Almanac” a year after his death (1949). This was one of many books and publications by Aldo Leopold that have had a great influence on wildlife managers, naturalists, and conservationists ever since.

Procedure:

1. Read and generally discuss the essay, “Thinking Like a Mountain,” with learners. Depending on time and reading/comprehension level of learners, you may want to read the condensed version.
2. Tell learners that many naturalists make use of a quiet, natural area to reflect on their surroundings or to be inspired by their own thoughts.
3. If possible, take the learners to a quiet area on the school site. Have them spread out, so other learners do not distract them.
4. Pass out the ‘Aldo Leopold Journaling Worksheet’.
5. Have learners reflect on the “Thinking Like a Mountain” essay.
 - What is the lesson being taught in the essay?
 - How was each aspect of the ecosystem affected by the killing of the wolf?
 - The wolf population?
 - Deer and other wolf prey?
 - Vegetation?



- The river?
- The air?
- The mountain as a whole ecosystem?
- Give the learners 15-20 minutes to reflect and write. They may also draw a picture to express the affects of the wolf's death.
- Gather learners back together to share reflections on the essay as a group.

Extension:

Other journaling techniques based on Aldo Leopold's "Sand County Almanac".

1. Locate a plant or animal to observe. How does it adapt to the changing seasons?
2. Find some "signs" of animals in the area (tracks, nest, etc.). Can you identify the animal from the sign?
3. Find an area that you consider to be beautiful. Sketch a small part of this scene without looking at your paper and pencil. How did this method help you observe more carefully?

Discussion/Assessment:

1. Review how each part of the mountain ecosystem was affected by the killing of the wolf.
2. Can you think of similar situation? (ie cutting of the rainforest, extinction of a plant or animal, pollution of an area, etc.) Track the affects to the ecosystem as a whole?

Thinking Like a Mountain

By Aldo Leopold

A deep chesty bawl echoes from rimrock to rimrock, rolls down the mountain, and fades into the far blackness of the night. It is an outburst of wild defiant sorrow, and of contempt for all the adversities of the world. Every living thing (and perhaps many a dead one as well) pays heed to that call. To the deer it is a reminder of the way of all flesh, to the pine a forecast of midnight scuffles and of blood upon the snow, to the coyote a promise of gleanings to come, to the cowman a threat of red ink at the bank, to the hunter a challenge of fang against bullet. Yet behind these obvious and immediate hopes and fears there lies a deeper meaning, known only to the mountain itself. Only the mountain has lived long enough to listen objectively to the howl of a wolf.

Those unable to decipher the hidden meaning know nevertheless that it is there, for it is felt in all wolf country, and distinguishes that country from all other land. It tingles in the spine of all who hear wolves by night, or who scan their tracks by day. Even without sight or sound of wolf, it is implicit in a hundred small events: the midnight whinny of a pack horse, the rattle of rolling rocks, the bound of a fleeing deer, the way shadows lie under the spruces. Only the uneducable tyro can fail to sense the presence or absence of wolves, or the fact that mountains have a secret opinion about them.

My own conviction on this score dates from the day I saw a wolf die. We were eating lunch on a high rimrock, at the foot of which a turbulent river elbowed its way. We saw what we thought was a doe fording the torrent, her breast awash in white water. When she climbed the bank toward us and shook out her tail, we realized our error: it was a wolf. A half-dozen others, evidently grown pups, sprang from the willows and all joined in a welcoming melee of wagging tails and playful maulings. What was literally a pile of wolves writhed and tumbled in the center of an open flat at the foot of our rimrock.

In those days we had never heard of passing up a chance to kill a wolf. In a second we were pumping lead into the pack, but with more excitement than accuracy: how to aim a steep downhill shot is always confusing. When our rifles were empty, the old wolf was down, and a pup was dragging a leg into impassable slide-rocks.

We reached the old wolf in time to watch a fierce green fire dying in her eyes. I realized then, and have known ever since, that there was something new to me in those eyes - something known only to her and to the mountain. I was young then, and full of trigger-itch; I thought that because fewer wolves meant more deer, that no wolves would mean hunters' paradise. But after seeing the green fire die, I sensed that neither the wolf nor the mountain agreed with such a view.

Since then I have lived to see state after state extirpate its wolves. I have watched the face of many a newly wolfless mountain, and seen the south-facing slopes wrinkle with a maze of new deer trails. I have seen every edible bush and seedling browsed, first to anemic desuetude, and then to death. I have seen every edible tree defoliated to the height of a saddlehorn. Such a mountain looks as if someone had given God a new pruning shears, and forbidden Him all other exercise. In the end the starved bones of the hoped-for deer herd, dead of its own too-much, bleach with the bones of the dead sage, or molder under the high-lined junipers.

I now suspect that just as a deer herd lives in mortal fear of its wolves, so does a mountain live in mortal fear of its deer. And perhaps with better cause, for while a buck pulled down by wolves can be replaced in two or three years, a range pulled down by too many deer may fail of replacement in as many decades. So also with cows. The cowman who cleans his range of wolves does not realize that he is taking over the wolf's job of trimming the herd to fit the range. He has not learned to think like a mountain. Hence we have dustbowls, and rivers washing the future into the sea.

We all strive for safety, prosperity, comfort, long life, and dullness. The deer strives with his supple legs, the cowman with trap and poison, the statesman with pen, the most of us with machines, votes, and dollars, but it all comes to the same thing: peace in our time. A measure of success in this is all well enough, and perhaps is a requisite to objective thinking, but too much safety seems to yield only danger in the long run. Perhaps this is behind Thoreau's dictum: In wildness is the salvation of the world. Perhaps this is the hidden meaning in the howl of the wolf, long known among mountains, but seldom perceived among men.

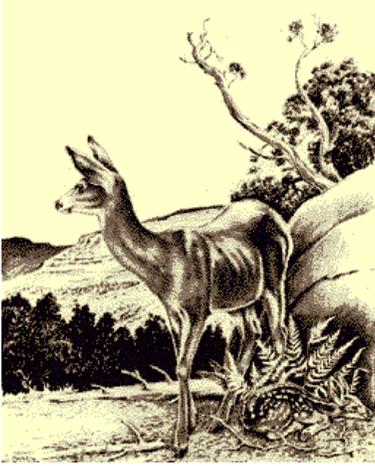
Thinking Like a Mountain

By Aldo Leopold

Condensed/Student Version

Aldo and some friends were eating lunch high on a rock with a river below. They thought they saw a deer struggling in the waters, but soon realized it was a wolf. There were about six wolf pups along with her. Thinking that the only good wolf was a dead wolf, Aldo and his friends opened fire. The old wolf was down and a pup was injured as a result. As Aldo reached the wolf, he reflects watching “a fierce green fire dying in her eyes”. In this moment, Aldo’s understanding of the ecosystem changed. He knew that the fragile balance of this mountain ecosystem had been upset. Previously, and like many others, he had thought that fewer wolves meant more deer. More deer was great news for hunters, or so they thought. “But after seeing the green fire die, I sensed that neither the wolf nor the mountain agreed with such a view.”

Every organism has its special purpose in the ecosystem, whether it is a wolf, deer, insect, or plant. Wolves have been wiped out of many states throughout the U.S. and are endangered. Great measures have been taken to reintroduce these species after people have learned how they help keep the ecosystem in balance. As Aldo also learned, wolves keep the deer population under control. Without this control, deer browse the vegetation down to virtually nothing. After the food is gone, the deer starve and get sick. The vegetation is gone, which also affects other wildlife living in the area. Without vegetation on the mountain, water runoff will wash away nutrient rich topsoil. This eroded soil will runoff into the rivers and other water sources. Large amounts of runoff into the river will lower the oxygen levels in the water, upsetting the water ecosystem, possibly killing aquatic wildlife. The negative impacts are unending.



“Thinking Like a Mountain”

In Aldo Leopold’s essay, “Thinking Like a Mountain,” he discusses how his actions did not only affect the wolf, but the mountain as a whole. After reading his essay, reflect on how each aspect of the mountain ecosystem was affected. You may want to use the back of this page or another sheet of paper to draw a picture of what the mountain might look like once the ecosystem became unbalanced.

How was each aspect of the ecosystem affected by the killing of the wolf?

- The wolf population?
- Deer and other wolf prey?
- Vegetation?
- The river?
- The air?
- The mountain as a whole ecosystem?