Program 29 - WOODS, WATER, AND WILD LIFE - April 21, 1941

SOMETHING TO DO AND TALK ABOUT FIRST

This broadcast is intended to show that nature, when left to herself, produces a balance of life. By balance of life we mean just enough plants and animals growing up to take the places of the old ones that die or are killed. Imagine plants and animals living together in a certain region for thousands of years. Year after year the same plants and animals will be found there in about the same numbers.

What happens when man moves in? He cuts down the forests. He may kill birds and snakes. Soon the things upon which these animals live begin to multiply. The balance of life is destroyed.

Have pupils discuss the ways in which man has destroyed the balance of life. Suggest such things as shooting hawks, plowing prairie sod, and draining marshes.

DO YOU KNOW THESE WORDS?

balance of life biologist

LISTEN FOR THESE IDEAS

1. How do forests keep up the balance of water?
2. How does water keep up the balance of wild life?
3. What happened when rabitts were introduced into Australia?
   The starling into the United States?
4. How do birds help to keep insect life in balance?
5. Do hawks help to maintain a balance in any way?
6. If all the eggs of frogs, toads, and fish hatched and grew, there would not be habitats large enough for them. What keeps them in balance?

SOMETHING TO DO AND TALK ABOUT LATER

1. In a National Forest, Rangers killed all the enemies of the deer. What do you suppose happened?

2. In another region hawks were killed. What happened to orchard and tree plantations?

3. An authority recently stated that the southern tiers of Wisconsin counties will be as barren as Canaan in a few centuries if present practices are followed. What did he mean?

Wisconsin School of the Air
Afield with Ranger Mac
April 21, 1941

WOODS, WATER AND WILD LIFE

Hello Boys and Girls:

This is your day,
So, up and away!

Today we are going to talk about woods, water and wildlife. We will use the words "natural resources" quite frequently as we journey along, and so we must be quite sure you know just what we mean by those words. By natural resources we mean the gifts of nature upon which our lives depend. These gifts are the soil, forests, water, grasses, wildlife, and the minerals. Each one of these helps the other. The soil is the mother of them all. It feeds the forest and furnishes a foothold for the roots of trees. In turn, the forests enrich and guard the soil and keep it from washing and blowing away. Soil feeds the grasses as well, and in turn, the grasses cover the soil with matted roots and leaves that hold the soil in place. Wildlife gets the food and shelter from the forests and grasslands. In turn, birds and animals enrich the soil and protect the trees and grasses from harmful insects. Water sustains the forests and grasses and wildlife, and makes possible all life on this earth. The trees and grasses, in turn, help water to penetrate the soil to a place where it may be stored. So you can see that all of these natural resources live in a friendly neighborhood of helping-one-another. But it isn't all so friendly as it seems. For instance, the elms are now coming into bloom. You observe an elm tree and notice the countless numbers of seeds. If they all grew there would not be space enough for all of the trees. So in the competition for light, water and air and soil-space many more of them die than live. Let's take the frog as another example. The female frog lays thousands of eggs each year. Many of these eggs are eaten by other animals. The eggs that grow develop into tadpoles. But tadpoles are attacked by leeches, water-bugs, fish and birds. A few of the tadpoles develop into frogs, most

which will be eaten by birds, snakes and fish. Only a small percent of the frog's eggs ever develop into adult frogs that can lay more eggs. And so the number of frogs in a pond remains about the same year after year. This struggle among living things may seem tragic to us, but it is all a part of nature's way of keeping a balance among the numbers of living things. Let me use a very simple example to illustrate what is meant by a balance in nature. Suppose that for some unknown reason a certain kind of insect succeeded in producing a dangerously large number of young. The insects will be a large supply of food for the birds that feed on them. With this larger supply of food available the number of birds will increase. With the larger number of birds, more and more of the insects will be eaten. As the insects get fewer and fewer, the birds will get fewer and fewer, and soon the number of insects and birds will get back to where they belong in nature. This is called abalance in nature, and the example I cited shows just about how nature holds her creatures down to the right numbers. This is called the balance in nature. Nature left to herself always works for a proper balance of her creatures. The things of nature had learned the art of getting along together until man came, and when he came and stirred up trouble, the whole land objected. And nature punishes severely for misuse of the earth, just as she rewards abundantly for wise use of her resources. The example of the beaver shows the disaster that follows when man does not fit into nature's plan. Whenbeavers were trapped in Canada so that they all but disappeared and the swamps and marshes drained to make greater room for making a living, fires began to burn the forests. The water supply began to shrink. Ducks and geese found no feeding and breeding places in those parts. And now the government is starting all over again by trapping and transplanting beavers to these same regions. Last Saturday a man told me that he discovered the nesting place of a pair of screech owls. Around the roost he found the pellets containing the disgorged remains of

49 mice. Whenever we shoot hawks and owls we interfere with nature's tools to keep mice and other rodents in check. Once a sportsman thought it would be fine to introduce our native Jack rabbit into Australia so that shooting might be improved. This was done, but nature had provided no check on jack rabbits in Australia, and as a consequence they have become such a pest that the government has offered $125,000 to the man who will provide a way to get rid of them, and no man has accepted the offer.

Once there was a country of wondrous riches. Magic forests of green covered its mountain slopes, and grass of green gold carpeted the plains between. Water in silvery streams trickled down its valleys. The whole country was undisturbed and peaceful.

But peoples in far-off countries heard of this place of wondrous riches, and they called it America, the Promised Land. Into this richest land in the world came a troubled people, honest most of them, and hard working. They helped themselves freely to this wealth. Faster and faster they came, their eyes aglow with the hope of finding homes. On they came, more and still more of them, eager to enjoy the wealth of a kind nature had provided, yearning to have homes of their own, craving to live freely and without too many laws. These things they found here - soil, water, forests, grasses, and wildlife. These are the gifts of nature with which this country was richly blessed. But these people cut down the green forests without any thought of the future, and flung to the winds the green gold of the plains.

There is an old legend among the Chippewa Indians which tells how a hunter, walking through the forest, stumbled and fell. As he was getting to his feet, he heard a quiet voice behind him: "Human," the voice said, "when you fall you rise to your feet and stand. When we fall, we never rise again." The hunter turned his head, but all he could see was a large tree towering above the others. He knew that a tree had spoken. With this legend

the Indians taught their children to respect every tree in the forest. Not one was to be used without purpose because trees were friends that gave them wood to roast their meat and keep their tepees warm, bark for their canoes, medicine for their illnesses, and shelter for the animals that gave them food and skins. Scanty seem the gifts of the forests to the Indian compared with the uses white man makes of them, but sadly enough, with all these uses, the white man gave little thanks or respect to the forest. Let's run down the list of uses white man has made of the forest. First, from the forest came the best masts in the world, masts which made the British navy the ruler of the seas because of the large amount of canvas that her ships could carry. Railroad ties - 2,500 of them to the mile, needed in the expansion of this country. Lumber for homes so cheap that there is no country in the world where a larger percent of people own their own homes than in America. Here is an example of how the forests help to develop and preserve a democracy. Nuts and fruits, paper and rayon, turpentine and rosin, movie films, tannin for the tanning of leather, alcohol, dyes, lacquers, powder, rugs, carpets, cellophane for a thousand uses.

But most of all the forest stands guard over the soil and water resources. Its canopy of branches keeps off the beating of the sun, wind and rain. The twigs that fall to the earth decompose and form humus, or forest duff as the foresters call it, which is soft and spongy, able to hold large quantities of water. Each root and tiny rootlet clings to soil particles, holding them in place, and allowing the water to seep slowly through the humus into the soil and then into the subsoil. A square yard in a jack pine forest was carefully examined to a depth of eighteen inches. That made just one-half of a cubic yard. In that one-half of a cubic yard they found roots which when placed end to end extended over two-thirds of a mile. Each one of those roots is a waterway that leads the main and melting snows downward. Consequently water is seldom seen running over the ground in a forest, and no matter how

steep the slope erosion is seldom seen. Streams that rise in a forested watershed seldom flood, while treeless watersheds are sure to be troublesome. In the past we have thought of forest largely in terms of the lumber and other things it supplies, but in the future we are quite sure to think of the forests more and more because of their ability to hold water and hold the soil, to keep our streams pure and ever flowing and provide the places where wildlife may live, and the part it has in keeping the balance in nature.

So when we cut the forests in America, we interfered with nature's plan; we destroyed the balance in nature. Water began to hurry to the ocean, carrying with it soil from the slopes. Soil began to muddy the streams, making them unfit for fish. Hurrying water found less time to seep into the soil, the soil becomes dry, the grass and shrubs die, and wild life disappears. The mistake acts like a snowball that gains in size as it rolls downhill.

So you can see that the resources of nature are all in partnership. Into this partnership you and I must learn to fit. That's why we study conservation; that's why we take these trips afield - to enter into partnership with nature. Planting even a single tree gives aid to the soil, to water, to grasses, and to wildlife, and, most important, to man. When aid is given one, every other is helped.

To this Promised Land came hoards of troubled, hungry people. They helped themselves freely to the wealth; so did their children and their children's children. Now, 500,000,000 acres of soil in this Promised Land has been spoiled and 2/3rds of the forests are gone. They did not enter into partnership with nature. It is high time for us to say:

Stop cutting and Start planting.
Stop wasting and start saving.
Stop hunting and start watching.
Stop killing and start creating.
Stop hating and start loving.

"Stop hating and start loving" reminds me that this is Humane Week, when we learn better how to be kind to those creatures who depend on us.

Good bye until next week.