

Wolf's Eye

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The first plane, an Aeronca "Champ", took off at 2:07pm CST and the larger Cessna 180 followed at 2:14pm. Location: Eveleth, Minnesota. Date: February 3, 1960 (Wednesday). Destination: Washington Harbor, Isle Royale. Purpose: The second annual winter section of "An Ecological Study of the Timber Wolf, *Canis lupus*" being carried out at Isle Royale National Park by Purdue University. Aboard the planes: L. David Mech, Purdue University; David Stimson, Isle Royale National Park; Don Murray, Pilot, who will remain for the 2-month study period; and Art Tomes, President of Northeast Airways, Inc. of Eveleth, Minnesota. Art Tomes returned to the Eveleth Airport 4 hours later after seeing that all personnel and gear were firmly established at Washington Harbor.

In order to bring everyone up-to-date on the hows, whys and wherefores of the study, the following article is reprinted from Purdue University's Purdue Research Foundation HORIZON, Volume 6, Number 2, October 1959.

In WOLF'S EYE Vol. 3, No. 2, February-March, 1959 were several pages which also spoke of the wolf study at Isle Royale. In it is a statement which reads: "Isle Royale may be the least visited National Park, but it is biologically one of the most important. One of the principle reasons is that it is the only National Park still containing the timber wolf (*Canis lupus*)."

The statement was made without regard to the National Park Service areas in Alaska. Whereupon Mr. Russ Grater, Regional Naturalist of Region Four in San Francisco (Region 4 includes Alaska) reminded us that wolves do exist in several Alaskan areas. This is especially true of Mt. McKinley National Park where there are doubtlessly more wolves than there are at Isle Royale. Therefore, our apologies go to Alaska, Region Four and Russ Grater for our error.

WOLVES AND MOOSE

by Leon E. Trachtman

A light plane cruised over a rocky island in northwest Lake Superior last October, moving to and fro just above the treetops. In the plane were a bush pilot and a passenger, L. David Mech, a graduate student in the Department of Forestry and Conservation of Purdue University's School of Agriculture. They were carefully inspecting the balsam thickets, alder swamps, and stands of birch and maple over which they passed. At intervals, the plane went into a tight circle and buzzed a dense clump of forest growth. At such times, the talk from passenger to pilot went like this:

"Better try again. I'm sure there's an animal in those balsam. Now I see her—there they go—a cow and a calf!"

The animals were easy to identify because in the fall season bull moose have not yet shed their antlers, and cows and calves are readily spotted.

Purpose of the identification? Dave Mech was making an aerial census of the moose herd in his 210-square-mile "laboratory," Isle Royale National Park.

In November the park closed, the last boat headed back for Houghton, Michigan with the maintenance staff, and Isle Royale was totally deserted—until February, when Dave Mech, a pilot, and a Park Service biologist returned to a camp serviced entirely by ski-plane. This time they were in the air during every interval of good weather, studying the daily movements, hunting, and activity of the island's resident wolf population. The same process will be repeated this year.

The Isle Royale project is officially designated "An ecological study of the timber wolf, *Canis lupus*," and receives major support from a three-year research grant of the National Science Foundation. Ecology? It is the broadest of all fields of biological science, the study of environmental relationships. Complex? Yes, endlessly so. In fact, the organization of ordinary wildlife communities is so involved that the biologist must select relatively simplified situations in which to study the relations of herbivores to vegetation and the interaction between populations of carnivores and herbivores. The advantages of Isle Royale as a wilderness study area are explained by Durward L. Allen, Professor of Wildlife Management at Purdue, and director of the program:

"The timber wolf was the dominant carnivore of this region in primitive times. Today the species is gone from all of the United States proper except for a few individuals in northern Michigan, Wisconsin and Minnesota. Isle Royale National Park may be the only place within our borders where timber wolves can be preserved in a sample wilderness biota. There we have isolated and relatively confined populations of wolves and only two major prey species—moose and beaver. The beaver are not active in winter, and the moose and wolves can be counted after the leaves fall and snow covers

the ground. The wolves pack up at that season, and their movements and habits can be followed from day to day with a light plane."

This ideal study situation on Isle Royale was about 50 years in the making. Half a century ago Isle Royale was a primitive range of the woodland caribou, but caribou disappeared about 35 years ago. Moose first appeared on the island about 1910, having crossed over the ice from the mainland. Arriving on a new and protected range, free of natural predators, the moose multiplied rapidly. Within two decades, however, the growth of the moose herds was checked by the depletion of browse. Isle Royale originally supported a thrifty reproduction of balsam, birch and aspen, extremely palatable browse for the moose. With the virtual disappearance of undergrowth over large areas in the early 1930's because of overbrowsing, the numbers of moose underwent a drastic reduction. About 1930 there may have been as many as 3,000 moose on the island. This number decreased sharply within the next few years, but an extensive burn in 1936 rejuvenated browse on about one-third of the island, and the moose apparently built up again for the next 10 years. This increase in numbers led in turn to more overbrowsing and to another decline that came in the late 40's.

One reason for the repeated mushrooming growth of the moose was that there were no natural enemies on the island. The number of moose apparently was controlled only by the availability of food.

This cycle of population growth and decimation might have continued indefinitely but for a new element which entered the ecological picture during the extremely severe winter of 1949-1950. Wolves, ranging far in search of food, came over the ice from the mainland, and for the first time in the memory of man, inhabited Isle Royale. With these new arrivals a new ecological picture took shape.

Professor Allen, recognizing the tremendous advantages of Isle Royale as an experimental observatory, conceived of a broad ecological study of the island some years ago, but waited for the appropriate graduate student to come along to help execute the research. The appropriate student came in 1958 in the person of L. David Mech. Mech, a 1958 graduate of the Department of Conservation at Cornell University, received his BS in wildlife management, and has had for years a deep interest in wildlife biology. This study is serving as Mech's PhD program.

The study, an expensive one, was made possible by a three-year grant from the National Science Foundation, in addition to contributions from the National Wildlife Federation and Purdue University. Field administration, use of facilities and the assistance of personnel were contributed

by the National Park Service, and technical aid was supplied by the game division of the Michigan Department of Conservation. Members of an advisory committee for the project were drawn from the Ontario Department of Lands and Forests, the U. S. Fish and Wildlife Service, the Minnesota Department of Conservation, the Michigan Department of Conservation, and the National Park Service.

Work started on the project in the summer of 1958 after former studies of Isle Royale were reviewed and plans laid for both summer and winter work. The project got underway with a major survey of the island's topography, geography and vegetation. Every mile of Isle Royale's trails was covered in a 38-day, 300-mile hike. Much of the island's periphery was traveled in Park Service boats, and the island was subjected to scrutiny from the air.

After this preliminary summer work, preparations were made during the fall of 1958 for the hard winter field work. Supplies of canned food were stored at the island, and arrangements were made for chartering an aircraft and storing gasoline, since after the lake freezes the island can be reached only by ski plane. During February and March of 1958, Mech spent six weeks making aerial surveys of the island.

Wolf packs were discovered by following tracks, and wolves were counted directly from the air. Habits of the wolves were charted and their encounters with moose noted, studied and tabulated.

After a month's study of the activity cycle of the wolves, a moose census was taken. With the habits and activity cycles of the wolves known, and with fairly accurate figures on wolf and moose populations of the island in hand, a start has been made toward understanding the effect of wolf predation on the moose population of Isle Royale. Among the most interesting of Mech's observations are the following:

—There seem to be 19 wolves on the island. Fifteen travel in one pack, three in another, and there is one lone wolf. Of these 19 wolves, at least three, and probably more, are females. One question suggested by the number of wolves is, why there are so few? Even if only two or three crossed over 10 years ago one would expect a number greater than 19 today. What, if any, are the natural forces limiting the number of wolves on Isle Royale?

—During the winter the group of 15 wolves kill on the average of one moose every three days. The wolves have a three-day activity cycle during the winter. They kill a moose one night and eat lightly, return to the kill the following day to feed upon the carcass, rest again, and return on the third day to spend another night chewing bones. The next night another cycle begins with another kill.

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—The wolves appear to make their kills generally either on older moose—over 10 years of age—or on calves. They seem to be frightened of strong and mature moose. Ages of killed moose are determined by study of the teeth in the jaws of the animals.

Plans for next winter include the gathering of three essential statistics about the moose herd which are necessary for determining the precise effect of wolf predation on the moose: sex ratio, productivity, and more accurate size of the herd.

In addition to discovering the wolf-moose relationship, Mech hopes to shed light on other ecological problems. Among these:

—Have wolves reached their saturation point on the island? The count as of last March was 19. If the population stays at about this level, what is the mechanism by which numbers are limited? Are sociological factors involved? They probably are, since it appeared that there probably were only three pups in last winter's population.

—Will the thinning of the moose herd result in higher breeding productivity? This is the usual trend in wild animal populations. The incidence of twin calves on Isle Royale seems high, based on preliminary figures.

—What is the probable effect of the wolves on beaver? Beavers in the past were under little or no predation on Isle Royale. Now they form one of the principal items of the wolves' summer diet. Beavers now have to travel long distances for food and are under continuous attrition by the wolves. What is the beaver's future on Isle Royale?

—There are very few snowshoe hares on Isle Royale. They probably were reduced by the overbrowsing of ground vegetation. With the moose herd reduced to about 310 animals, ground vegetation is now recovering. Will hares build up and form an important food supply for the wolf? If that happens, will the wolves increase?

—What happened to the coyote? The coyote appears to have disappeared from Isle Royale since the arrival of the wolves. Has social intolerance and competition for food between the two species decided the fight in favor of the stronger?

While these and other specific questions will undoubtedly be answered by Mech's observations of life on Isle Royale, there are more important results than this which can ultimately be expected. What Mech and Prof. Allen hope eventually to discover are some of the basic dynamics of predator-prey relationships. Hopefully, we will gain from the results of this study a greater insight into the natural adjustment of various species in the animal population to one another, and an understanding of the way nature maintains its everchanging equilibrium under natural conditions. Isle Royale, with its pure but simplified ecological situation, is ideally adapted to yield this information.

NOTICES OF BIRTH

A girl, Kim Marie, to Frank and Sharon Johnson, Grand Marais, Minnesota, on December 12, 1959.

A girl, Kathryn Marie, to Leo and Mary Stepanek (Mary Lou Anderson) on November 8, 1959.

IN MEMORIAM

Dr. Frank H. Clay, died November 9th, 1959

"We're very saddened by a letter from Mrs. John Hanner, formerly Margy Clay, saying that her father Dr. F. H. Clay had passed away. He had suffered a severe stroke a week before Christmas last year and had been very sick for the past months. He died November 9th after losing the use of his speech and the movement of his right side. His passing closes one of the earlier chapters in the story of Isle Royale.

"Dr. Clay was one of the first guests at the camp of Fred Schofield back in the early twenties and possibly before that. There are few old timers left and as far as they recall, Dr. Clay was just there and taken for granted. He had his share of emergencies over the years ranging from minor cuts and bruises to heart attacks. At one time or another everyone at Belle Isle had used his services whether it was treating a minor cut, locating a trail to a lake, or finding where the trout went when they "weren't biting".

"His summer residence was changed from Belle Isle to Rock Harbor about the time of the second World War. He was sorely missed on the north side of the island, but it was a comfort to know that he was still available when necessary and for a good afternoon's visit. His boat the Windsor was a welcome sight wherever he may have chosen to land and he planned on visiting all his friends at least once a season.

"The past seasons when health wouldn't permit the trip up from Florida he tried to remain in touch with his friends on the island and was still concerned with their welfare. Dr. Clay has passed on now, but will certainly be remembered over the years whenever the conversation gets around to Isle Royale."

.....the Emil Anderson Family

NOTICE OF DEATH

Henry L. Beard, 1865 to January, 1960

A notice has been received from Dr. William Sturges (Omaha) through Coach H. T. Orsborn that Mr. Henry L. Beard of Omaha and one of the "Founders" of Tobin Harbor, passed away on January 25, 1960. Surviving are his wife, Katherine; daughter, Mrs. J. Gerald MacVeigh, University Park, Md.; son, Robert H. Green, Omaha; five grandchildren and four great-grandchildren. His son, Mr. Green is still a regular visitor to Isle Royale and Tobin Harbor.



Isle Royale Natural History Association

The Wolf's Eye Press

Isle Royale National Park, Houghton, Michigan