NATIONAL PARKS & *Conservation Magazine*

The Environmental Journal

March 1971

Alaskan Oil

The Impact Report produced by the Department of the Interior on the proposed Trans-Alaska Pipeline makes it clear that the pipeline should not be built at this time, nor until adequate public hearings have demonstrated its safety.

The report was released in limited quantities late in January, with Departmental hearings scheduled for mid-February, the notice being far too short. By the time this page appears in print, the hearings will have been completed, and a decision can be expected before the Spring weather makes it possible for the promoters to move. Nonetheless, we have a few comments to make on both substance and procedure.

The hearings should have been scheduled on ample notice before the Council on Environmental Quality; they should now be followed by review proceedings before the CEQ. Interdepartmental matters are involved which can be settled properly only at the Presidential level. The CEQ has authority to hold such hearings and a stated policy to do so in important cases; the pipeline case is overwhelmingly important.

The licensing authority, or so-called impact agency, in this instance, is the Department. The Department will be sitting as judge and jury in its own case. Comment by other departments will be on marginal matters. Even the Environmental Protection Agency has limited commenting jurisdiction. Interior has no competence in security matters, although the report undertakes to enter this area. These are properly Presidential concerns.

The hearings should provide opportunity for the cross-examination of witnesses. The authors of the report should be produced by the Department for that purpose. This is an anonymous report which undertakes to pass judgment on matters of great scientific and technological complexity. It is highly evasive on many vital issues. It is confused, verbose, and self-contradictory. If scientists were party to its production, they should be made to lay their professional reputations on the line.

The report concludes that there is a *probability* that oil spills will occur. It recognizes that "thaw bulbs" will develop, diameters 20–30 feet at first, constantly growing, along many sections of pipe. It recognizes the probability of severe earthquakes. The environmental and technical stipulations set up monitoring equipment, which the report suggests may not work well in ice-fog conditions, which will be common.

A contingency plan is called for to take care of such situations, but need not be ready until just before construction; the plan has not been made public for the current hearings. We fail to see how any contingency plan can protect the public interest adequately in case of a major break in the line caused by settling into a thaw bulb, still less by earthquake; if so, the plans should be produced. The ecological imperative commands that promotion yield henceforth to environmental protection; the burden of proof in respect to safety rests with the promoters.*

Transportation from the southern terminus at Valdez to the lower states will be by tankers of unprecedented capacity; one collision (and collisions or the equivalent are now becoming monotonously frequent) could ruin vast shorelines, enormous biological resources. At the very least these ships should be cut down heavily in capacity; they should have double hulls; transportation costs would rise, environmental risks would decline a little; this is the way to internalize the environmental costs of projects like this. After cost-internalization it will be easier to judge whether the project is worth the economic candle.

Safety gates are to be installed on the line at pumping stations, which will average about 65 miles apart. A massive break in the line (sabotage, military, earthquake, settling) might release oil in quantities many times those of the Santa Barbara and Golden Gate spills. Other safety gates may be installed at places; we suggest that they be installed at least one to a mile. This will increase costs; it will internalize the costs of environmental safety; when this has been done, we shall all know whether the project is socially economic.

The national security assumptions of the report are ludicrous. The pipeline must be built because our supplies from the Near East could be cut off in an emergency; but one conventional bomb on the pipeline could sever a major military supply. If this is the thinking of our military men (as contrasted with the notions of the companies and the non-military agencies), we shall be surprised and alarmed. Before the oil strike three years ago, no one heard anything about this new national emergency; since then much money has been invested in pipe, machinery, and leases; national security, so we are told, makes it necessary to get going fast.

It seems that we must substitute Alaskan oil for Eastern Hemisphere oil. At present we draw about one-seventh of our supplemental supplies from the East; by 1975 it may be one-fifth; North Slope oil might cut that quantity in half by that time, but never replace it. The report recommends in effect that we pull out of the Eastern Hemisphere as much as we can; this will save exchange, so we are told; in our view, it will also turn over the Eastern fields to the Russians; even economic aid in the amount of the exchange which we are invited to save will not redeem the loyalty of the Eastern producers under such circumstances.

Restrictions of space and time prevent us from further elaboration. By the time this page appears, we shall have submitted a more detailed statement at the current hearings and shall have accepted the proffered ten minutes for oral testimony. We trust that other conservationists and many experts in the physical and social sciences will have done likewise.

Continued on page 34

SAVE ALASKA!

Here is a critical issue. Concerned citizens have a chance to let their voices be heard. The Trans-Alaska Pipeline promoters are using national magazines and newspapers to sell their point of view. No such platform is available to those who believe the environment comes first. But you can go on record if you will act immediately. Time is short. Although the pipeline hearings, called on very brief notice, are to be held February 16-17 in Washington and February 24-25 in Anchorage, the hearing officer will hold the record open until March 7 to receive written statements. Write out your statement *today*. Mail it airmail to the Director, Bureau of Land Management (Attention 320), Department of the Interior, Washington, D.C. 20241, and send NPCA a copy. Much is at stake.

*A few readers questioned our statement last November about sea levels rising if oil spills were to melt the ice cap. There would be only a slight rise if the Arctic Ocean Ice melted; Greenland Ice Cap, 21 feet (Fristrup); Antarctic, possible 180 feet (Flint, Bauer); total 201 feet. The Secretary of Transportation had announced tests (DOT release 6-22-70) "to determine the effect of oil spills in the Arctic on the earth's environment." He was concerned with the environment "of the entire earth." The tests were to see whether the dark color of the spills would "create a heat blanket which causes the ice to melt." They would be 50 miles north of Barrow on the sea ice. Clearly, it was not a question of a little hole in the ice. Whether the above sequence would occur, we do not know; we would not quarrel with *could* instead of *would*. Some scientists consider the ice caps unstable, and that a few degrees rise in earth temperatures could melt them. Others think more snow would result, bringing a new ice age. Oceanic spills, as contrasted with possible spills from the shore, would imply tanker transport; but tankers may follow development pioneered by pipeline. The promoters are trifling with perils. The burden of proving safety is on the promoters.

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OCEAN OF GRASS

paul m. tilden

SINCE THE EARLY DAYS of America's westward expansion the spacious prairielands that stretch from the Mississippi to the Rockies have enriched our heritage with a treasury of fact and fiction. To the slow wagons of a nation moving and exploring, the prairie of the Great Plains must have seemed endless indeed. John Lambert, of the national railroad survey of 1853 and 1854, sent his superiors in Washington a pleasantly unbureaucratic summary of his feelings about the American prairielands that his party had passed through. "Let it be remembered," he wrote, "that even travelling over and observing them with the patient labor of months, leaves but a *feeling* of their vastness, which baffles the effort to express it."

Aside from that inexpressible notion of vastness that so impressed Lambert of the railroad party, and still may be experienced today, the life and character of the prairie are to be found in its seemingly unending, undulating array of grasses and in the fascinating communities of life that make these grasses their homes.

Ecologists classify the American grasslands of the midcontinent into several categories that merge, insensibly, one into another, the type of grassland depending for the most part on the amount of moisture available to roots. The region of relatively high rainfall immediately west and north of the Mississippi is the tallgrass prairie empire, with towering and solid stands of tall bluestem, Indian grass, and switch grass. Farther west, as annual rainfall becomes less, grasses are perhaps only half as high as in the tallgrass stands to the east, and they tend to form clumps and bunches. This is the midgrass prairie, characterized by little bluestem, needlegrass, Western wheatgrass, Junegrass, and other drought-resistant species. Still farther west, in the arid country that slopes up to meet the foothills of the Rocky Mountains, a third category of grassland—the shortgrass plains—is the home of buffalo grass, prairie dropseed, muhly grass, and blue grama. (Preoccupied as he was with the duties of the railroad survey, Lambert noticed and reported on this subtle transition from one type of prairie cover to the next, as the party pushed on. "The verdure of these regions," he wrote, "although growing thinner as we go westward, never entirely disappears anywhere.")

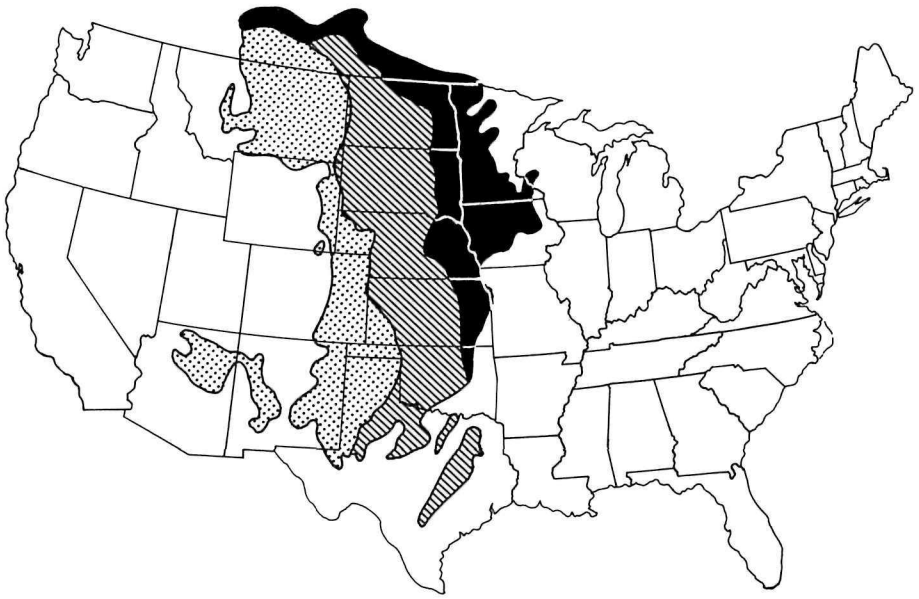
The animal life of the Great Plains must have been, in former days, awe inspiring in both numbers and variety. Today, some species of this teeming multitude of original prairie inhabitants are gone forever; others have been rescued by conservationists and sympathetic government agencies after close encounters with disaster; others still live a semi-unnatural way of life that is impressed on them more and more by the needs and wants of an ever-increasing human population. "Scientists," remarks Dr. Durward Allen, one of America's best-known present-day ecologists, "would give much to see that region of far horizons as it was in the early days of exploration. Nothing on earth was quite like this tawny-carpeted wilderness with its millions of bison and antelope, its patrolling wolves, its burrowing hordes, its spectacular waves of feathered migrants, its air vibrant with the cry of curlews and the trumpeting of cranes."

It is, actually, remarkable that the immense grasslands of the nation's interior, with their wealth of human and natural history, should not have been represented long ago by one or more major units in our great national park and nature monument system. Several park system units scattered through the prairie country, mostly of historical or geological antecedents, include relatively small portions of grasslands, some of them very fine; but the story of grasslands ecology, interwoven as it has been with human history, was not the primary reason for their existence.

The reason for this seeming disinterest in grasslands for their own sake probably lies at least partly in the nature of humans themselves. We are all guilty, to some extent, of a tendency to admire the biggest pumpkin at the country fair, so to speak, forgetting that some of the less spectacular may possess qualities as high or higher. Thus, protection has been accorded some of the more spectacular examples of major American biotic regions—the deciduous hardwoods of the eastern mountains, the tropical flora of the South, the redwoods of the California coast and mountains, the desert communities of the Southwest, the giant forests of the Pacific Northwest. In a sense, at least, the endless miles of rippling prairie grasses that feed and shelter a great community of living things are equally spectacular.

But because the American prairie never has been considered spectacular, in the commonly used sense of the word, most of the interest in national protection for representative portions of grasslands has come mainly from the scientific community and secondarily from the rest of the conservation world. Nearly 40 years ago the ecologist Victor Shelford was asking for preservation of an "adequate sample" of prairieland. Twenty-five years ago Victor H. Cahalane, formerly of the New York State Museum and now president of Defenders of Wildlife, was assessing the preservation possibilities of various types of prairieland. Nearly 15 years ago Dr. E. Raymond Hall, of the University of Kansas Museum of Natural History, was recommending establishment of national preserves on both tallgrass and shortgrass prairie. The National Park Service itself has, over the years, commissioned a number of studies

DISTRIBUTION OF MAJOR GRASSLANDS TYPES



Tallgrasses: To 8 feet tall; dense, deeply rooted sod; flourished on eastern prairies of relatively heavy rainfall and in more westerly moist lowlands and ravines

Midgrasses: 2 to 4 feet tall; forms clumps; adapted to less abundant rainfall

Shortgrasses: To 16 inches tall; forms dense but mainly shallow sod; adapted to semiarid western high plains and driest areas of eastern prairies

MAP BY FEDERAL GRAPHICS

of remaining areas of prairie grasslands of sufficient size—not easily located today—for a possible national grassland preserve.

All forms of prairie life could not be preserved in one park. Prairie park advocates are working for the establishment of two major grasslands national parks, one on tallgrass prairie and another representative of shortgrass and midgrass prairie.

Eastern Kansas is a leading contender for a tallgrass park. However, agreement on the site for a shortgrass and midgrass park—a Great Plains national park—poses a few more problems, although there is fair agreement on the criteria for such a preserve. Biologists outline the needs of the park as follows: It should be large, perhaps 1 million acres, and therefore located at least partially on public land to lower the cost of acquisition. The size is needed to make the park an ecological unit. Nobody is certain how great an expanse is needed for unity, but 1 million acres is thought to be sufficient. Where grazing or other disturbance of the vegetation has occurred, the natural plant cover would have to be restored, but restoration of some of the less damaged areas is not expected to take more than 5 years. The park should be situated so that it could protect some of the few remaining prairie dog towns that still harbor black-footed ferrets. The ferrets are North America's most gravely threatened mammal. The prairie dogs themselves, once so incredibly numerous, now also need protection from harassment. Bison and the wolves to prey on them should be able to move in fairly natural patterns in the park. (The park would have to be fenced to prevent wolves and bison from straying onto cattle-grazing land, which would upset natural movements to some extent.) Dr. Allen points out that wolves and bison evolved together on the plains and that today's bison may be decaying behaviorally and genetically without wolves to harry them. Wolves to control the park's bison are essential, he says, both for the wolves themselves and to prevent the bison from changing genetically and becoming simply domestic cattle.

The interest, study, and scientific enthusiasm for prairie parks so far has come to naught; the question of prairieland reservations of sufficient size to do the necessary job remains on dead center. There is, as yet, no park or monument whose mission is to protect and interpret this part of the American story—the story of "the long grass, bending gracefully to the passing breeze as it sweeps along the plain, giving the idea of waves; and the solitary horseman on the horizon. . . ." ■

Paul M. Tilden, Consulting Editor of *National Parks and Conservation Magazine*, has been involved for many years in the conservation movement. He was formerly Editor of *National Parks Magazine* and before that Associate Editor of *Natural History Magazine*.

TALLGRASS PRAIRIE PARK

al bohling

photos by roy inman

A HALF-DOZEN YEARS AGO I drove down the Kansas turnpike with a Japanese journalist from the Tokyo bureau of *Time* magazine. He had never visited the Middle West and seemed to be enjoying the experience.

South of Emporia we entered the heart of the Flint Hills, where man has treated the land more gently than in many other parts of America. As we crested a hill and started down the far side, he pointed out the window and in a disbelieving voice said:

"Look. Look. There is nothing. No people. No trees. Nothing but empty land as far as you can see."

His Nikon began to click and click and click. Before he had finished, the visitor was literally bouncing in the seat to get different angles for his pictures. Probably they all looked about the same. It is extremely difficult to photograph the prairie. To the eye, there is variety and dimension. On film, the land is but a line beneath the sky.

I could not help but wonder what his reaction would have been if a herd of buffalo had thundered over the horizon. Or if a band of elk had suddenly come into view. A century ago these were common occurrences. They could be again if the half-century dream of a tallgrass prairie national park ever comes true in the Flint Hills of Kansas.

Some visitors have a different first-time reaction. They find no romance in the sweeping hillsides or in the emptiness between the grass and the sky. "Why would this make a park?" I have been asked. "Where are the mountains, the waterfalls, or the canyons?"

Of course, there are none. The Flint Hills have a quieter, a more subtle grandeur. Men who love the land where the tallgrass flourished find rare beauty in the undulating hills, the wildflowers, the birds, and the abundance of silence there. But natural beauty and wildlife are not the only values that need preserving.

The prairie played a major role in the formation of the American character. The overland trails crossed those hills on the way to Oregon, Santa Fe, and California. Hunters rode through those valleys in search of fresh meat to stock the wagon trains. The sod houses and hand-dug wells followed, as the pioneers settled the land and began to till the fantastically fertile soil.

The crossing of the prairie and its settlement formed one of the great sagas of our national history. Unless a small segment of the dwindling natural prairie is set aside, future Americans will have no way of knowing what the land was really like.

The Flint Hills of Kansas

THE THREE TYPES of prairie grassland occurring in North America—shortgrass, midgrass, and tallgrass—once spread over about a third of what was to become the United States. The tallgrass prairie alone covered more than 400,000 square miles. More than 25 million people now live in this zone. Kansas once had all three sorts of prairie within its borders, but it is on the tallgrass that park advocates in the state are concentrating and have been concentrating since the early 1920s. No representative sample of the tallgrass prairie ever has been included in the national park system.

Although much tallgrass prairie has been turned to agricultural use, a few fine examples still remain. The best are found in Kansas on the eastern slope of the Flint Hills and in the outwash beyond. Nature, more than man, is responsible for the preservation of these remnants so far. The hill soil is thin. In many places flinty limestone comes within a foot or less of the surface. Where the limestone has disintegrated into soil, the flint remains, hard and unyielding. The land is immune to the plow.

Elsewhere on the prairie, the sod was turned many decades ago to provide the wheat and the corn to feed a nation. The Flint Hills proved ideal for fattening cattle, however. Grazing, not farming, has been the main threat.

Probably the finest remaining example of tallgrass prairie is found in an undeveloped pocket including parts of Chase, Lyon, Butler, and Greenwood counties. Until the mid-1950s, that area was almost completely free of roads and other man-made intrusions. Then came the Kansas turnpike, stretching in an arc from Kansas City southwest to Wichita and the Oklahoma border. It sliced through the center of that once-undisturbed area.

Intrusions have followed one after another. Every year brings fresh scars in the earth and new "improvements" to mar the view. A bulldozer cuts into a hillside for a road. A water retention dam goes in on the Verdigris River. Or maybe it's a new electric power line, or a microwave tower soaring into the sky like a technological totem pole. Conservationists agree that if such intrusions continue, in another few years the park potential will be destroyed.

But all has not been lost—yet. Tallgrass, a broad, generic term covering a variety of species, is characterized by tall bluestem, switch grass, and Indian grass. These grasses and other native plants are still there. Even though grazing has kept the height down to 1 or 2 inches year after year, the long, tough roots are still healthy, penetrating deep into the earth in search of moisture.

Here and there soil erosion has left a few scars. But prairie experts say that if the cattle were excluded, the bluestem would grow shoulder-high again within one normal growing season. The worst scars from erosion should heal in a decade or two, and the prairie would restore itself to near-perfect condition.

Many birds are still there. The alert eye can spot a blue heron on the limb of a sycamore tree. The whistling cry of the killdeer shatters the silence that engulfs visitors. The upland plover, taking off like a miniature helicopter, is a startling sight for city eyes. Quail, horned larks, and night hawks are found in profusion. It is now a rare sight to find a mother prairie chicken leading her brood through the grass. But the prairie chicken could register a comeback if cows did not crop away the cover of grass needed at nesting time.

The wildflowers bloom in profusion. Downy prairie phlox, bird's-foot violets, and larkspur signal the return of spring. They give way to verbenas, wild indigo, and black-eyed susans. The color parade passes into autumn with coneflowers, tall gayfeather, chest-high compass plants, and the sunflowers that gave Kansas its nickname. In all, more than 250 varieties of flowering plants have been identified on the tallgrass prairie.

Nine years ago Dr. E. Raymond Hall of the University of Kansas wrote of the nostalgia of the prairie. "Every child reared on the prairie," he said, "knows that exuded sap in waxy droplets on stems of the compass plant makes good chewing gum and that its leaves have their edges north and south and their flat sides east and west."

Periodically, I have joined a small group of men who visit the Flint Hills to inspect possible park sites and to catalog the continuing inroads of man. Included in the

A tree alone amid the measureless grass, just "a giant weed" (opposite page). Above left, a killdeer anxiously circles the photographer as he nears her camouflaged nest and young, above. The stick insect below shows a remarkable adaptation to life among the grasses. A tortoise, below left, rests on a bare patch of the unyielding flint that has been the savior of this small fragment of prairie. Left, grasses are not the only prairie plants. Wildflowers are found in abundance.

group are such conservationists as Dr. Hall, Charles Stough, a Lawrence lawyer, and Ray Wagner and his son Lawrence of Overland Park, a Kansas City suburb.

Over a picnic lunch under an ancient oak tree on the banks of the Verdigris, we have discussed the potential of a prairie national park. Many questions arise about the nature of the park. Should the land be burned over every 4 or 5 years to restore the balance of nature? Ray Wagner believes that it probably should. Perhaps a fourth of the park one year, a fourth the next, and so on. Fire was an important part of the natural prairie, serving among other things to keep out the woody vegetation. As one man put it recently, when a tree takes over grassland, it becomes just "a giant weed." Everyone agrees that there are far more trees in the area today than there were a century ago.

Most of the large native mammals are gone. Dr. Hall believes that the park should start out with modest-sized herds that could be brought in from other parts of the country. Perhaps 100 buffalo would do. Maybe 30 or 40 antelope. A hundred white-tailed deer should be sufficient, along with 30 or 35 elk. In time, the herds would increase themselves to manageable proportions.

Pancakeflat badgers, gray foxes, striped and spotted skunks, beavers, weasels, and the many other smaller animals are already there. Wolves would be desirable, but the men fail to agree on their practicality, at least until a permanent wolf-proof fence can be devised to seal the water gaps. Elsewhere, an 8-foot park fence with an underground inlay should keep them in.

Sooner or later every discussion gets around to the primary question: What fragment of the prairie should be saved for the future? It is an old and enduring question in Kansas. When the first preliminary studies of a prairie park were published in 1925, many desirable sites were still available. Nothing happened. During the next 30 years. the plan surfaced a few times, but it never gained momentum.

In 1959, a 34,000-acre site in Pottawatomie County was proposed. The location was along the eastern shore of the Tuttle Creek reservoir, an Army Corps of Engineers project northeast of Manhattan, Kansas. The National Park Service endorsed the proposal and enlarged it to 57,000 acres. The following year two bills were introduced in Congress to carry out the plan.

At the time Fred A. Seaton was serving as Secretary of the Interior in the Eisenhower administration. Mr. Seaton, whose family owns a newspaper empire, began his journalistic career on the Seaton paper in Manhattan. The plan was pushed vigorously, and for a time it seemed that success was finally near.

On December 4, 1961, Stewart L. Udall, who had succeeded Mr. Seaton as Secretary of the Interior, and Conrad L. Wirth, director of the National Park Service, visited the site by helicopter. A few moments after their craft touched down, the men were ordered off the property by an irate cattleman, who had leased the land. They bowed to the inevitable, got on the helicopter and departed. Afterward, Mr. Udall said: "This is one of the finest tracts left in the country. I am going to give it the best push I can."

Nothing more has been heard of the Pottawatomie County location in Washington—or in Kansas. Conservationists now believe that a site farther south would be superior.

The next big boost came from Walter J. Hickel, a native of Kansas who succeeded Udall as Interior Secretary. As a child. Mr. Hickel had driven through the Flint Hills on many occasions. He appreciated the beauty of the tallgrass prairie and felt that a part of it should be saved. On three occasions while he was Secretary, he urged Kansans to get organized as quickly as possible. The Interior Department, he said, would not force a national park on the Sunflower State if Kansans did not want it. He advised Kansans to show enthusiasm in Washington for the project.

Governor Robert Docking, a Democrat, picked up the cue. In April 1970 he named a strong bipartisan commission to advise him on a prairie preserve. Despite Mr. Hickel's departure from Washington, the group is now attempting to mobilize support in Kansas and Congress.

The principal opposition to the park has come from a number of cattlemen who have fought all park plans every step of the way. Of the 52½ million acres of land in Kansas, approximately 20 million acres are used for grazing. Although no park plan has ever exceeded the 57,000 recommended in Pottawatomie County (less than one-third of 1 percent of all Kansas grazing land) the dissident ranchers have adopted the attitude that even one acre set aside for park purposes would constitute a severe threat to the entire industry.

Their views are significant because of their allies in the Kansas Legislature who either feel the same way or are afraid to buck the political pressure. Governor John Anderson, a Republican, held a contrary view in the early 1960s when the Pottawatomie site was still in the picture. So does Governor Docking today. He has stated that a vast majority of Kansans favor a park, and he is prepared to press ahead despite the highly vocal opposition of a relatively few cattlemen.

During my tour with the visitor from Tokyo, we pulled off the turnpike at the highest elevation in the Flint Hills. Below and beyond, the rolling hills stretched to a distant horizon.

"In my country," he said, "more than a million people would live in an area smaller than we can see now."

Although no one contemplates that a million people will ever live in all of the Flint Hills, the last remnants of the once-vast tallgrass prairie are in jeopardy nevertheless. A road here, a dam there, a power line somewhere else—they are all taking the final toll.

"If we don't save a little of it soon," Dr. Hall said recently, "there won't be anything left worth preserving." ■

Al Bohling is urban affairs editor of the *Kansas City Star*. Together with Dr. E. Raymond Hall of the University of Kansas and other Kansas conservationists, he has been involved in efforts to have part of the Flint Hills protected in a national park. Roy Inman is a staff photographer for the *Star*. The pictures accompanying this article first appeared in *Star Magazine* and are used with permission.

WAR ON WILDLIFE

article by **faith mcnulty** photographs by **hal perry**

IMAGINE YOU ARE STANDING and looking over the rolling grassland somewhere out West. The hill on which you stand is dotted with the small, earthen mounds of burrowing rodents called prairie dogs. Nearby is a little stream, its banks green with tall grass and brush. It is ideal wildlife habitat. The country is home to coyotes, badgers, foxes, raccoons, skunks, various rodents, and many birds. We will say that this is public land. (A third of the continent is still in the public domain.) Theoretically you, a citizen, own an interest in it no matter where you live.

A pick-up truck drives over the hill and stops. A man gets out carrying a shovel and walks toward the stream. You decide to accompany him. He pokes around in the shrubbery until he uncovers a trap. A badger, caught by the leg, snarls and cowers. The man hits the badger on the head with the shovel. Momentarily stunned, it lies still and he releases it. He resets the trap. The injured badger crawls away. Moving a little farther downstream, the man comes across the corpse of a coyote but continues until he finds an unusual object sticking up out of the ground. It looks like a piece of pipe some 6 inches tall. The man examines it briefly and turns away. He then goes to the pickup truck where he takes out a sack and slings it over his shoulder. He starts walking from one prairie dog hole to another, and at each he drops a tiny gift—a few grains of oats.

Imagine further that you question the man about what he is doing. You learn that he set the trap for bobcats, but caught the badger accidentally. The pipe device is called a coyote getter. It fires a dose of cyanide into the mouth of any animal that tugs at its scented wick. The oats dropped at the doorsteps of the prairie dogs are also lethal—they will kill 90 per cent of the dog town's population. Survivors will later be "cleaned-up" with cyanide cartridges thrown down the holes. (This will also "clean up" any other denizens of the holes—burrowing owls, snakes, toads, rodents, and so on.) If it is winter, the man is likely to have set up a bait station somewhere in the vicinity. A bait station is a hunk of poisoned horsemeat—50 or 100 pounds—staked to the ground. It is designed to kill coyotes, but it is also capable of killing various other animals and birds. At some other location the man may have broadcast hundreds of small baits of poisoned tallow or distributed dozens of poisoned eggs.

Thus you have been introduced to the main weapons in a continuing war on wildlife carried on throughout the West under various names such as "husbandry," "conservation," and "multiple use."

Above, a 1080 bait station in southern Arizona. In Arizona 1080 baits consist of 40 to 100 pounds of horsemeat wired to a tree. Wildlife Services reports show that 1.4 ounces will kill a coyote or dog. In the early spring 1080 stations are designed to kill two generations of the coyote. When parent coyotes are poisoned, the pups are doomed to slow starvation—as are the pups of the dead nursing female below.

Imagine that you continue your conversation with the man while he is poisoning the prairie dogs:

Q. "Why are you killing all these animals?"

A. "We don't call it killing. We call it 'animal damage control.' "

Q. "How do you control animal damage?"

A. "By killing the animal."

Q. "What damage do animals do?"

A. "Coyotes eat sheep. Prairie dogs eat grass. Bobcats kill game birds. The ranchers want to get rid of them. Then there are the 'nuisance' animals—skunks, badgers, 'coons. We kill them, too. And foxes."

Q. "But this is public land, isn't it? Doesn't the wildlife belong to the public?"

A. "We don't call predators and rodents 'wildlife.' The rancher who leases this land has the right to make the most possible profit out of it, and that means getting rid of the vermin."

Q. "How many animals do you kill?"

A. "Nobody really knows. We can't go around and count every dead body. We think we kill a couple of hundred thousand coyotes a year. We poison maybe a million acres for rodents. The small animals and the animals that are killed accidentally we can only guess at."

Q. "What does all this poison do to the ecosystem?"

A. "Nobody knows. Every location is different. But it isn't economically important so it hasn't been studied very much."

Q. "Doesn't anybody object to your poisoning wildlife?"

A. "It sure drives the Protectionists up the wall!"

Q. "What's a Protectionist?"

A. "Protectionists are people who think wild animals are more important than a man's right to make a profit. Out here we think they ought to mind their own damn business. They don't live here."

Q. "Who is *we?* Who is doing all this killing?"

A. "*Please* don't call it 'killing'! That gets the public upset. Call it 'control' or 'management.' That's the scientific term."

Q. "Who is doing all this 'managing'?"

A. "The United States government. The Bureau of Sport Fisheries and Wildlife has overall responsibility for wild animals. The division that I work for that controls animals is called Wildlife Services. We think it sounds like something everybody can be in favor of."

The scene described may be imaginary, but the situation is real. It is one of the incongruities of our policy toward wildlife that the public agency charged with conserving it for all the people is also responsible for decimating large segments of it. It comes as a further shock to those of us who think of America as a nation of animal lovers to find that we do not in reality grant to wildlife the right to exist unless it pays its way. Game animals and birds are worth money—hunting is a billion-dollar business—so these species are fostered and fattened for the harvest. But species that have no dollar value—and this is a large group—have few rights and little protection. On the contrary, if they get in someone's way or conflict with maximum profit from the land, they are destroyed.

The federal government's official policy was expressed in a statement issued in 1967. Though it recognized the

right of the public to enjoy wildlife, it also defined "animal damage control" as "the management of damaging bird and mammal populations at levels consistent with the needs and activities of man." Obviously, with ever-expanding human activity, this level can sink to zero.

Unwanted animals are killed by landowners, by farm and livestock associations, and by state agencies, but far and away the most lavish destroyer is the Bureau of Sport Fisheries and Wildlife, which is authorized by Congress to kill virtually any animal that can be accused of any damage. Funded by both state and federal money, the Bureau's "control" division spends over $7 million a year and employs nearly a thousand men. The necessity for this killing, its justification in economic or any other terms, its benefits to individuals versus the detriment to the public, and its ecological results have been challenged and debated for 40 years. And while the debate continues, so does the killing.

Coyote and raven found at a Wildlife Services strychnine drop bait site near Phoenix, Arizona.

THE FEDERAL GOVERNMENT got into the animal killing business by accident. In the early days the only federal agency that dealt with wildlife was the Biological Survey. Its main functions were to carry out research and to advise farmers and ranchers on problems of husbandry, problems that included damage by predators and rodents. During World War I efforts were made to increase beef production. Congress appropriated $125,000 to kill the wolves that still sometimes harassed western herds. The money was given to the Biological Survey, which hired hunters and trappers.

Soon sheepmen wanted the same service to protect their flocks from coyotes. It was not long before western congressmen recognized the killing as a valuable subsidy for their constituents. The trappers and hunters were given more duties, and more and more money was appropriated for the Survey's animal-killing division, known then as Predator and Rodent Control (PARC). Bureaucratic prosperity set in. Supervisors in Washington mapped the west into districts, and a small army of field men was hired to shoot, trap, and poison everything from the lordly mountain lion to the lowly gopher. ("Gopher-choker" was the field man's unaffectionate nickname.)

Naturally, men hired to do a job want to make sure there is a continued demand for their services. PARC agents became propagandists against predators and rodents, searching out instances of alleged animal damage and working to convince landowners that "control" increased profits. They built an ever-widening constituency that brought pressure on Congress for more funds for PARC. More funds hired more field men, who in turn worked to increase demand, so that a circular system was established. PARC came to dominate the Survey's more benign and less profit-oriented activities. By 1930 PARC had a million-dollar budget.

The widespread killing so dismayed conservationists and scientists that the American Society of Mammalogists urged Congress to abolish PARC. Congress very nearly did so. But officials of the Biological Survey promised reform—less killing, less propagandizing and soliciting, more research. Their promises were accepted, and PARC made a new start. In 1940 the Biological Survey was transferred to the Department of the Interior and renamed the Fish and Wildlife Service. PARC became part of the Service's Bureau of Sport Fisheries and Wildlife.

After Word War II the sheep industry encountered financial troubles and labor shortages. Owners began to employ fewer herdsmen and to run larger flocks. They demanded more federal control of coyotes. Once again PARC's appropriations, congressional support, labor force, and scope of killing began to increase. Its deadly work again dismayed conservationists, particularly when it killed wildlife on public land.

In the western states much of the sheep grazing and cattle raising, and consequently much of the poisoning, is carried out on public land. The Bureau of Land Management and the Forest Service control nearly 700 million acres—a vast domain, three times the area of Texas. Congress has declared a policy of leasing the land under the concept of "multiple use"—including sheep, cattle, mining, logging, and so forth. When wildlife conflicts with these commercial interests, lessees demand that it be eliminated. The Bureau of Land Management and the Forest Service employ the Bureau of Sport Fisheries and Wildlife to do the job.

Conservationists object. They declare that wildlife is public property of value to the nation as a whole and is a worthy use of the land. In the name of multiple use, they ask that holders of grazing leases co-exist with wildlife even if this requires the sacrifice of a portion of their profit. Why, they ask, should the public sacrifice its irreplaceable heritage of wildlife in order to further subsidize leaseholders who in many cases are paying as little as a quarter of the open market value of the grazing they receive from the federal government?

The indignation of conservationists is further increased by PARC's use of a hideously lethal poison, sodium fluoroacetate, known as 1080, which was introduced in the mid-forties. From the point of view of those engaged in killing

animals it is a great advance over earlier poisons. It is odorless and tasteless so animals cannot detect it, soluble in water, slow to deteriorate, and extremely cheap. A few cents worth of 1080 injected into meat or absorbed by grain can make enough bait to kill thousands of animals. Bait can be broadcast from airplanes to "treat" hundreds of thousands of square miles. Thanks to 1080 it is now possible to wipe out animal life on an enormous scale.

Another disastrous property of 1080 is its stability. It does not break down in the body of its victim. Any animal or bird that feeds on the carcass of a 1080 victim may be poisoned. Its body in turn may become another lethal bait. Dying animals may travel some distance, vomiting deadly doses of undigested meat, attractive to many animals and birds, along their trail. The possibilities of a chain reaction are great. A Bureau of Sport Fisheries and Wildlife biologist described 1080 as having "the potential of a biological high explosive."

In the fifties conservation organizations criticized PARC with increasing bitterness. In 1963 Secretary of the Interior Stewart Udall responded by appointing a board to evaluate PARC's work. Its chairman was Dr. A. Starker Leopold of the University of California, and the other members were well known in wildlife circles: Dr. Ira N. Gabrielson, an NPCA trustee and president of the Wildlife Management Institute; Dr. Clarence Cottam, NPCA board chairman and a former assistant director of the Fish and Wildlife Service; Thomas L. Kimball, now executive director of the National Wildlife Federation; and Dr. Stanley A. Cain of the University of Michigan. These men were by no means "hysterical protectionists," as PARC customarily termed its critics.

The Leopold board proceeded from the premise that "local population control" is essential where a species of animal causes "significant" damage to property. But it coupled this with the relatively new concept that *all* native animals are resources of value to the people of the United States. This resource, it found, was being needlessly wasted by Bureau control. Its investigation of PARC revealed a situation every bit as ghastly as the conservationists had said it was. The board found that PARC men still pressed their services as though they were peddling vacuum cleaners. Killing was their business, dead animals their product. Field men competed to see who could kill the most animals. Killing, the board said, had become an end in itself.

The board found a number of factors accounting for this grisly situation. One is the psychological fact that hired killers can be expected to think of maximum killing as doing the "best" job. Another factor in overcontrol is the peculiar way the Bureau finances its killing. It gets money not only from Congress but also from those "benefiting" from the work. These may be other federal agencies (principally the Bureau of Land Management, the Forest Service, and the Bureau of Indian Affairs), state and county agencies, livestock associations, commercial firms, or private ranchers. To keep money flowing, the Bureau must satisfy its customers. Thus those who want control have a strong voice in determining how much killing is "necessary." On the other hand, conservationists are unrepresented in the Bureau's councils. In fact, the board found, their complaints about too much killing were customarily stifled and evaded by Bureau officials. Thus the system puts the fate of wildlife in the hands of its enemies and excludes its friends.

Wildlife Services reports show that the average coyote travels about 21 miles after ingesting 1080-treated bait. Reduced dosage is used so the public will not see dead wildlife near bait stations. In 1080-treated areas, occasionally a coyote can be seen staggering about, suffering untold agony.

The Leopold board also found that the Bureau justified needless killing with unwarranted biological assumptions. It is, for instance, unproven that coyotes do significant damage to cattle, but the Bureau kills coyotes for the supposed benefit of cattlemen as well as for sheepmen. Bobcats are on the Bureau's death list although the board found their depredations "insignificant." The board declared that killing predators to protect game animals is biologically unsound. In most cases predators keep prey populations balanced and healthy. The board also found that the Bureau leans heavily on the fact that rabies flares up in wild animals from time to time and is very frightening to the public (even though few human cases occur). In truth no one knows how best to suppress rabies in the wild, short of total extermination of furbearers, but the Bureau responds to rabies outbreaks among animals with carloads of poisoned eggs and often cites rabies "suppression" to justify its claim that it "promotes human health and safety."

In going about their animal killing, Bureau field men theoretically were bound by rules designed to minimize damage to nontarget wildlife. Poisoned horsemeat, for instance, was supposed to be used only in winter when many small furbearers are inactive, and the baits were supposed to be spaced a certain distance apart. The board found that such safety rules often were violated and that these violations greatly increased the death toll.

In appraising 1080 the board gave a split verdict. It declared that 1080 is probably the best available poison

for coyotes in that it is highly effective and, if the safety rules are followed, no more damaging to other wildlife than such substitutes as arsenic, strychnine, or thallium. On the other hand, it attacked the Bureau's heavy use of 1080 for rodents, which results in the death of countless innocent coyotes, badgers, bears, foxes, raccoons, skunks, opossums, eagles, hawks, and owls. The board recommended that legal means be found to control the use of 1080 to prevent ecological abuse.

Although the board conceded that some animals damage some property, it found that the Bureau worked more from assumption of damage than from knowledge. No reliable figures have been collected to show the extent of loss of crops or livestock to predators and rodents, nor is there any evaluation of property protected. This failure, the board found, made it impossible to reach an objective determination of the need for control.

In short, the board thoroughly damned the way the Bureau operated. "The program," it said, "has become an end in itself. . . . Far more animals are being killed than would be required to protect livestock. . . , crops, wildland resources, and human health." It found "scant relationship to real need and even less to scientific management."

The Leopold board recommended a thorough overhauling of the system to end overcontrol. It conceded that in far western areas where large bands of sheep are the principal use of land, federally operated control may be the best system. But it found the federal program in the Midwest unnecessary. It recommended abolishing federal animal killing east of the 98th parallel (a line running through the eastern Dakotas and eastern Texas) and replacing it with the extension system that conservationists had long recommended.

This system is used in Missouri and Kansas, which never have subscribed to federal control. Instead, the state department of agriculture employs one or two specialists who are available to advise farmers or ranchers on how to protect their crops and livestock from animal damage or

Frozen grimaces attest to death agonies.

The two black objects at lower right in the picture at left are coyote getters. The stake at left of the cactus carries a red arrow (out of view in this picture) pointing to the location of these cyanide guns, but it is useless as a warning to a small child or a dog. For example, in March 1969 a pet Airedale took the bait on the left near Wikieup, Arizona. Hal Perry was nearby and heard the shot. Knowing he could do nothing to save the dog, he photographed her death throes. Obviously, these getters were just a few steps from the road, although the Wildlife Services field manual states that getters should not be placed less than half a mile from any paved, graded, or regularly maintained road or highway nor less than 20 yards from any nonmaintained farm or ranch road. The dog's owner sued the government for damages and won.

Below, about 15 minutes after taking the bait, the Airedale lies in convulsions, foaming at the mouth and gasping for breath. Paw marks on the ground indicate the violence of her agony.

At bottom, an hour after being shot, Blue Mountain Queenie lies peacefully at last—with no sign of life.

how to kill the offending animal without harming others. Experience in these states has shown that the system places animal control on a much more selective basis. Landowners who might casually subscribe to a federal program of wholesale killing are far less eager to do the work themselves unless the need is truly urgent. The net result is that fewer animals are killed.

In other recommendations, the board urged the creation of an advisory board to represent conservationists as well as economic interests; expanded research to find ways other than killing to prevent damage by animals; and a greater effort to determine the real economic need to kill animals, so that needless killing can be eliminated.

Secretary Udall accepted the Leopold Report in 1965, and conservationists waited hopefully for it to be implemented. PARC was rechristened with the soothing title Wildlife Services and put in the hands of a new director, Jack H. Berryman. He and the new Bureau director, John Gottschalk, promised vigorous reform. But soon it was clear that they planned to accomplish it not by any radical change in the system, as the Leopold Report had urged, but merely by trying to reeducate Bureau employees to the concept that wildlife has intrinsic value and only necessary control should be undertaken.

Berryman set to work to end such abuses as soliciting business, flouting rules, and killing without any economic need; but the system that had fostered these abuses went essentially unchanged. There is still no advisory board, no mechanism by which conservationists have equal representation with livestock men, no objective way to evaluate the need for control, no friend of wildlife present when a decision to kill is made. Killing remains the usual method for preventing damage by animals.

Although conservationists are bitter that the Leopold Report has been ignored, Bureau officials are equally angry that their reform efforts have not been appreciated. They claim that conservationists misrepresent them in order to appeal to the lunatic fringe of overwrought protectionists. In an effort to make their work more palatable, they attempt to "educate" the public with almost Orwellian language. Killing animals is often referred to as a "management plan." A recent poster shows a Bureau employee against a background of birds and animals caught in the act of destroying property or endangering humans. Its message reads: "Wildlife resources are of interest and value to all people of the United States. Basic policy is one of husbandry. Local population control is an essential part of management where a species is causing significant damage to resources and crops, or where human health and safety is endangered. Good conservation today—more sport tomorrow." Surely these sentiments are all faultless, but strangely they seem intended to add up to the conclusion that killing animals is "good conservation" of animals, when in fact its aim is conservation of property. The casual reader could easily conclude that the Bureau is helping wildlife by killing it, and that the only value wildlife has is "sport."

Equally odd is the opening of a description of Wildlife Services work prepared for the Bureau of the Budget: "The objective of the Wildlife Services program is to cooperate with federal, state, and local agencies in the conservation and management of the nation's wildlife resources for the use and enjoyment of the entire citizenry." Who would ever guess that this means the destruction of countless thousands of animals for the benefit of ranchers and farmers?

Conservationists have continued to press for replacement of federal control with the extension system. Livestock interests, however, have mounted a powerful defense of their subsidy. At the moment it is considered unlikely that the Leopold Report will be implemented further. However, conservationists are considering a new approach. Both Defenders of Wildlife and the Environmental Defense Fund are preparing lawsuits to assert the right of the public to preserve and enjoy wildlife.

Such lawsuits pose a question more fundamental than whether the Bureau of Sport Fisheries and Wildlife functions properly in killing unwanted wildlife, or whether the responsibility should lie elsewhere. The deeper question is of competition between man and animal for use of the land. To whom does wildlife belong? Who will share in the cost of supporting it? Can the landowner be forced to accept less than maximum profit in order to allow wildlife to coexist? Or should the public reimburse him? Will ecological research show that such "pests" as coyotes and prairie dogs contribute more to our total well-being than would the lambs and the grass that these wild animals consume? Can our economic system respond to intangible values so that an animal that cannot be directly used can compete with marketable goods? The way these questions are answered will determine what level of wildlife, if any, will still exist a few years hence.

We are just now in the midst of redefining a number of our values, attempting belatedly to paste price tags on such "free" commodities as sunshine, air, and water. Wildlife is in the same category. Unless value is assigned to all wildlife—even to the most "useless" species—it will be no match for its prime competitor, the dollar.

In the long war on wildlife, man has steadily advanced and wildlife retreated. We are now in danger of achieving total victory. We have the capability to wipe out competing life on a tremendous scale. In such a victory we would surely find catastrophic defeat. ■

Faith McNulty was reared in the country and always has been interested in animals. For 20 years she lived in New York City, where she worked as an editor on *Life*, *Colliers*, and *Cosmopolitan* and finally joined the staff of *The New Yorker*. She has written on a variety of subjects, but several years ago she decided to concentrate on what interests her most—animals, particularly the struggle of many species to survive in the modern world. In 1966 she published a book, *The Whooping Crane*. She spent 2 years researching and writing her forthcoming book, *Must They Die? The Strange Case of the Prairie Dog and the Black-footed Ferret*, during which time she visited black-footed ferrets and Washington bureaucrats, their critics and their partisans. This article is based on the results of that investigation.

Hal Perry, member of the Arizona Varmint Callers Association, took these photographs while he was on the staff of Defenders of Wildlife.

THE LASATER RANCH: APPLIED RANGE ECOLOGY

Keep in mind that the ranchers who use rangelands are the people who must ultimately apply ecological knowledge. Ecologists seldom operate ranches themselves.—E. J. Dyksterhuis.

TOM LASATER of Matheson, Colorado, is a case in point. He would probably be the first to deny possessing a great fund of specific ecological knowledge, but he readily admits that he "works with nature." In fact, Lasater, speaking in what someone paradoxically described as a rapid Texas drawl, says, "I think nature is smart as hell. I help as much as I can, but I try to let her do most of the work."

Lasater, 59, is a unique person, or, to use the vernacular of the day, he marches to the beat of a different drum. Another has said he has the reputation of being a pleasant nut. Be that as it may, he has gained a certain recognition for his theory and practice of cattle breeding, which led to the development of the Beefmaster—recognized as a separate beef breed by the U.S. Department of Agriculture in 1954. Much has been written about the Beefmaster and about Lasater's method of raising and selling cattle. Less well known is his approach to managing rangeland. He calls it a "nature program," but regardless of the title the basic objective (the same objective he maintains in his cattle program) is to develop the most efficient and economical production per unit of labor and other inputs.

It was back in 1931 that Lasater got his start as both rangeman and cattleman. Following his father's death, Tom resigned from Princeton University to help manage the family operations near Falfurrias, Texas. When land values started their rapid upswing in the immediate post-World War II boom, Lasater decided to move from south Texas, and on a two-day trip to Colorado he located and purchased his present operation in Elbert County, 65 airline miles southeast of Denver. The deteriorated, dry, windy high plains country apparently offered just what he was looking for: a challenge to both man and beast. It was something to build on!

Lasater's approach to managing his rangeland, at once both philosophical and pragmatic, follows closely the observation made by James K. Lewis ("Range Management Viewed in the Ecosystem Framework," in *The Ecosystem Concept in Natural Resource Management*, Academic Press, 1969): "A high degree of human control over range ecosystems is usually either not possible or not economical. If a high degree of human control is economical, the land is usually cultivated and ceases to be range. Consequently, range must be manipulated by extensive methods which are ecological in nature rather than by intensive methods that are agronomic in nature."

The approximately 25,000 acres that comprise the Lasater Ranch consist of sandy bottom, sandy plains upland, and clay upland range sites. Some of it had been cultivated in former years but hard experience eventually showed that such human control was sometimes not physically feasible. But Lasater's self-styled "nature program"—a common-sense application of ecological principles—has proved most feasible in all respects and has carried him a long way toward his goal of economical production per unit of input.

Too much emphasis has been placed on gain per acre rather than net income per acre and the change in value of the range resources.—James K. Lewis.

As long ago as 1920, the pioneer plant ecologist F. E. Clements published what he considered the essential factors of any range improvement program. From time to time other workers have reviewed and commented on Clements' seven basic practices, generally with the conclusion that they seem equally appropriate today. Let us see how Tom

DRAWING BY TOM DEVLIN

francis t. colbert

Lasater's 1970 range management compares with those tenets proposed 50 years earlier:

1. Proper stocking—*determined by actual trial accompanied by measurement of the result.* This has undoubtedly contributed most to the success of the Lasater operation. An initial determination of stocking rate in a new country is always something of a guess; but Tom knew what a cow required, he looked at the range, and he started with a rate he felt certain would give natural succession a good chance.

After 22 years' experience, Lasater's stocking rate is still what many people would consider light: an average of 45 acres per animal unit. And when Tom speaks of an animal unit he means exactly that; he is not referring loosely to an "ol' mother cow out in the pasture." Lasater maintains a very accurate inventory by both number of head (by age and sex) and animal units, with values for the latter ranging from 0.50 for yearling heifers to 1.25 for mature bulls. The monthly inventory sheet then indicates animal units for each pasture to two decimal places.

And what of the results? Don E. Smith, Soil Conservation Service district conservationist, points to an area where in 1952 he had difficulty clipping the equivalent of 200 pounds of forage per acre. Today the blue grama alone will yield 400 to 500 pounds, to say nothing of the heavy and vigorous population of western wheatgrass (which was totally absent in 1952), sideoats grama, plains muhly, switchgrass, little bluestem, and a wide variety of perennial forbs.

2. Rotation or deferred grazing—*including all methods of alternate grazing and rest, whether both occurred in one year or more.* On this point Lasater does not follow what some would consider an adequate plan. He gives as a reason his inherent suspicion of systems he feels may impose an arbitrary rigidity on his operation. But, by the same token, he does not arbitrarily stock every pasture with one animal unit on every 45 acres; rather range utilization is closely watched and, if one area appears to fall behind in maintaining a vigorous plant cover complex, the grazing load is lightened. Insofar as is possible, utilization is kept fairly even, with the real progress being judged by what is on the ground.

3. Control of rodents, poisonous plants, weeds, etc.—*here the importance of natural succession is stressed, along with direct measures by man.* And here is an area where Lasater's "working with nature" has paid dividends.

With one early exception he has maintained a no-shooting, no-poisoning, no-trapping policy regarding all wildlife species, which has resulted in seemingly balanced populations that present no problems to maintenance of the range. Initially Tom did mount a successful eradication program against a prairie dog town, but he wishes now he had not, because he wants to know what would have happened.

As a consequence of his no-shooting program, there followed a fairly rapid build-up of coyotes and other predators and a corollary decline in an initial overabundance of jackrabbits and cottontails. It was an effective and economical means of control.

Poisonous plants and weeds are controlled entirely by the succession process. This does not mean that all such plants have been entirely eradicated. Locoweed and Lambert's crazyweed are in evidence, but with the excellent "cafeteria" of forage plants available there is no indication that these species are grazed at all. Lasater reports that he has lost only one heifer to locoweed poisoning—back in 1949.

4. Manipulation of the range—*including use of fire, irrigation, fertilization, cultivation, cutting, sowing, and planting.* Some parts of the Lasater Ranch that had been cultivated or allowed to deteriorate badly under previous owners have been seeded. An adjoining abandoned farm Lasater recently acquired was planted last year to blue grama, intermediate and crested wheatgrass, and alfalfa. But no effort is made to maintain such introduced species; rather, the primary purpose is to establish ground cover, after which natural succession is allowed to run its course.

He has also built flood control levees and water spreaders, but after this initial practice he lets nature finish the job of filling in the potholes and healing the head cuts. No doubt with some justification, Lasater believes that many range manipulation practices are often used as a substitute cure for overstocking.

5. Development of feed and forage for droughts and winter—*to permit better utilization of the range and against the chance that weather may be abnormal.* Tom Lasater does not think he is in the best farming country in the world, so he has not put time or money into developing supplemental feed supplies. He is aware that abnormal conditions may necessitate feeding hay, but so far he has not had to. Hence, he reasons, he really cannot afford to put up hay every year, but probably could afford to buy hay in an emergency.

Tom does supplement all his cattle from November through March, using a range cube formulated to his own specifications. ("I always use several grains from different areas," Lasater says. "By doing this I minimize the risk of getting a poor grain from poor soil in a poor year, which would result in a pretty low-value supplement.")

During the 5-month feeding period the cattle receive an average of 2 pounds of cubes per head per day, regardless of age or sex. But Lasater emphasizes that this is an average, and notes that the amount is varied from pasture to pasture depending on the condition of the cattle and the range. The supplement is fed on the ground every third day, minimizing labor and trucking expense.

6. Development of water—*to permit more even utilization of the range.* This is a principle that Lasater has practiced with a passion. Previously, the only permanent source of water was Big Sandy Creek, which flows through the ranch for 9 miles. But during the past 22 years 37 permanent waters—windmill wells and springs—have been developed, plus quite a few ponds that provide additional stock water seasonally. "In no instance," Tom states, "does an animal have to go more than a half mile to water, and usually no more than a third of a mile."

7. Herd management—*including all features which relate to the handling of livestock such as fencing . . . that can contribute to the improvement or prevent deterioration of the range.* There are approximately 100 miles of fence on the Lasater Ranch, enclosing 22 pastures and traps ranging in size from 30 acres to 5,860 acres.

Surprisingly, perhaps, this is less fencing and fewer pastures than when Tom took over the property. He explains it this way: "I've put my conservation money in light stocking, water development, and larger pastures. Again, I'm working with nature by letting the cattle pick and choose where they want to go and what they want to eat. In this way the livestock becomes an integral part of the ecosystem, replacing, at least to some extent, the original buffalo."

As pointed out previously, Lasater's approach to herd management (and grazing systems as well) is not what might be advocated by some knowledgeable people. On the other hand, neither is it an operation by default; he is following a definite plan, which is to restore as nearly as possible a natural complex that is beneficial to both the land and the man who derives his living from it—a management equilibrium.

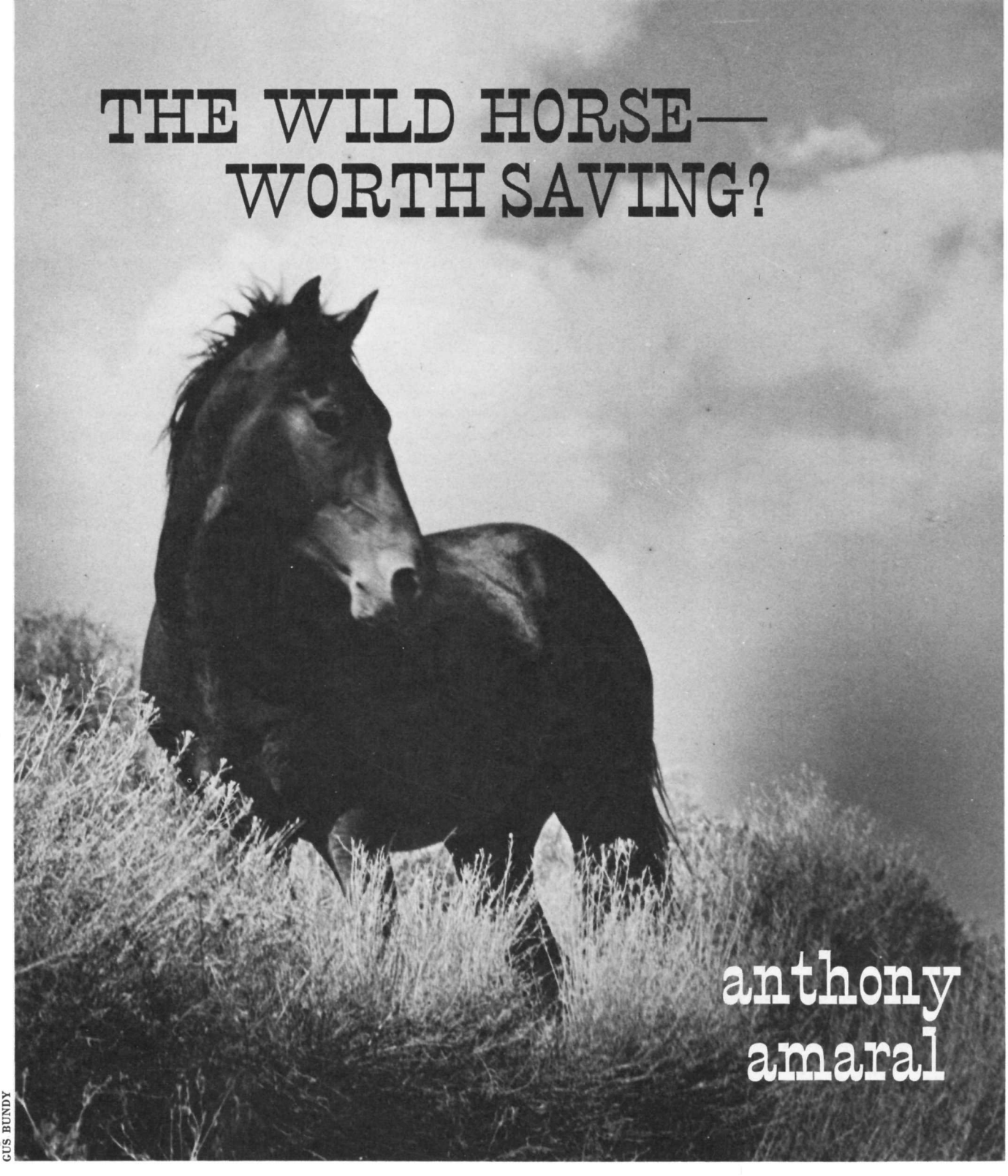
Range research has not been able to adequately study range ecosystems because of their complexity. The range has been approached from the standpoint of vegetation, or livestock, or soil, and almost never from the standpoint of the entire ecosystem.—James K. Lewis.

Tom Lasater is always looking for more information, and he actively solicits opinions from others regarding what he has done and the way he has done it. He is acutely aware of the lack of complete knowledge regarding rangeland and the possible consequences of management programs. Since before leaving Texas he has worked with the Soil Conservation Service, and he has been a continuous active cooperator of the Big Sandy Soil Conservation District since he moved to Colorado. Tom is also a member of the American Society of Range Management and in June 1968 hosted the Colorado Section field tour.

A popular magazine feature writer, attempting to convey the essence of the Lasaster cattle breeding and selection program, once said, "Lasater requires them [the Beefmasters] to survive incredible range conditions." What Tom really requires is that his cattle live and do well in a natural environment—along with deer, antelope, rabbits, coyotes, mice, gophers, hawks, porcupines, and other fauna all supported by a complex vegetative cover on a stable soil. In its own way it *is* somewhat incredible. ■

Francis T. Colbert is executive secretary of the American Society of Range Management and editor of its bimonthly publication, *Rangeman's News*, in which this article originally appeared.

THE WILD HORSE— WORTH SAVING?



GUS BUNDY

anthony amaral

IN THE EARLY 1950s about 70,000 Nevada wild horses were swept from the public range. It was the last massive roundup of feral horses in the United States.

Ranchers, if not ecstatic, were at least relieved from the threat of a locust-like plague of wild horses on the grass. For years the range had ceased being Edenic for both livestock and wild horses.

Presumably the local branch of the Bureau of Land Management (BLM) also sighed with relief, easing a worried concern for the deteriorating public domain.

If lack of public outcry over the fate of the horses was conspicuous, that was because no publicity was issued about the pending roundup. The reason was simple enough. A prior announcement would have caused the public to stampede state and federal agencies with chastising letters, telegrams, and telephone calls. And because the number of roaming horses had reached staggering figures—even more than estimated—they just had to go. If the government did not manage the removal, then ranchers' rifles, and other methods, would have played havoc with the herds.

Hank Greenslet, now retired from the BLM, supervised that last Nevada roundup: "We herded the horses humanely

Federal law now forbids the use of mechanized vehicles to run down and capture wild horses.

PHOTOGRAPHS BY GUS BUNDY

with a plane. It can be done, expediently, and far easier on the horses than attempting to herd them by men on horseback. After we thinned the herds—and we did leave seed stock wherever we saw a herd led by a decent-looking stallion—private interests took over. They used planes and flat-bed trucks to rope the horses. Some of these operators allowed that technique to become callous and brutal, and a lot of horses suffered miserably. That was when public ire was aroused, through Velma Johnson (Wild Horse Annie, of Reno), resulting in a federal law outlawing mechanical means to capture wild horses. Now, when the BLM tries to help out the range by thinning the herds, and allowing ranchers and sheepmen to get their full measure of range privileges, which they pay for, the public steps down on us."

Public protests grew so adamant over any threat to wild horses that the BLM became guardians, albeit reluctantly, of the remaining wild horses in the United States. Maybe 20,000 head now roam the West. Seemingly, more than half this number reside in Nevada. Thus, Nevada is in sharpest focus for efforts to preserve the wild horse or bring about its destruction.

At the moment it is difficult to assess who is winning. The law favors the preservation movement, but the law is also being broken or bent by ranchers who have grown disgusted with the one-sided sentiment. It overlooks, ranchers protest, cattle and sheep having to compete for grass with useless wild horses roaming about as a public symbol of the old West.

Other individuals, some working in conjunction with ranchers, or clandestinely, round up wild horses and ship them to rendering plants in California. Charges have been lodged against some individuals caught chasing horses by plane. They got off, and the law has now about as much teeth as a twenty-year-old cow.

California recently passed legislation prohibiting commercial use of Nevada wild horses. But like the federal law, the California law does not specify which department is to enforce the regulation and press charges. Besides, there are many routes into California where there are no inspection stations.

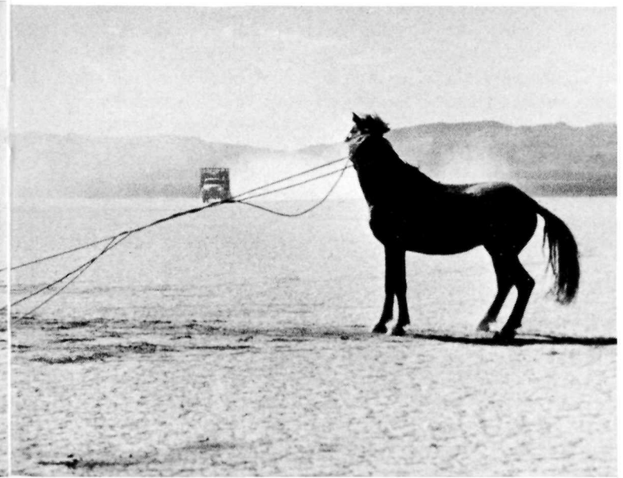
In Nevada there remains the indefinite status as to whom the horses belong. The state claims ownership, yet they run on federal lands. But local county commissioners have final authority over to whom they will issue permits to capture wild horses, supposedly by horseback means. It has been alleged that some county commissioners have turned down bona fide requests in favor of local ranchers who have other uses for the horses. These ranchers feel that the horses run on the land they lease, that they are paying for the grass eaten by the horses, and that horses drink from water holes or wells maintained by ranchers. Therefore, they claim the horses and dispose of them as they wish. Usually this is by sale to buyers who truck them to rendering plants in California. One rancher, for example, rounded up about three hundred head on his ranch and sold them in California.

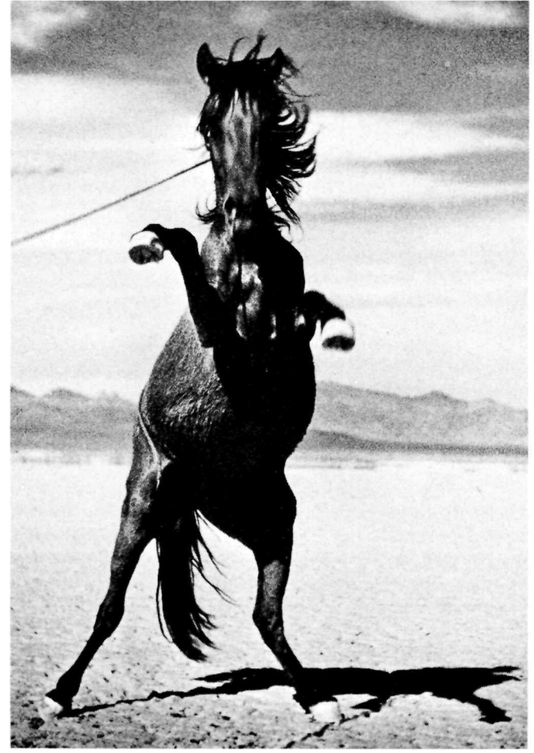
There is little sense to label the ranchers greedy, grasping opportunists. Although the label fits some ranchers, others enjoy some wild horses on their range, providing an esthetic satisfaction. But this enjoyment dies quickly once survival of the ranchers' livestock comes into question, and they will not tolerate large herds of horses becoming competitors for the grass.

The federal government has set aside a few wild horse preserves to placate public concern and pressure. Still, the preserves protect only a few hundred horses while other horses on the open range remain harassed, chased, and shot.

Thus, the wild horse is in a political limbo. What is more, this same vague legislation, special interest politics—whether for ranchers, horse lovers, or a concerned public—has not totally satisfied any one segment.

New legislation is being proposed in the current Nevada legislature while one or two federal bills are also under discussion. The question that has to be answered: Is the wild horse worth saving? And why? Needless to emphasize, there are those who do not consider the wild horse a valued asset. They dispute the claim of the horse protectors that the wild horse is a direct descendant of the mustang introduced into the hemisphere by the Spanish, and consequently, a national heritage.





I agree. Nevada's wild horses—any wild horse in America today—is no more related to the Spanish horses than today's cowboys are descendants of the old-time Texas drovers. The old-time riders, like the old-time mustang, disappeared when the conditions for their fostering disappeared. In the case of present cowboys, they are far more comfortable on tractors and pickup trucks; more handy with squeeze chutes, intensified ranching practices, tame cows, all of which are not even an echo of the men who lived and worked from horseback.

And the mustang—that tough, hot-blooded descendant of the Spanish horse and North African ancestors—disappeared en masse before the turn of the century. By 1930 the true mustang was in the memorial league of the passenger pigeon.

Today, one still hears the wild horse referred to as a mustang. Usage, however, does not always follow definition. But in the days when men were more knowing about horses, mustang meant Spanish horses gone wild. Just as important, mustang referred to that distinct sort of horse.

Texas then was the epitome of all that made for wild horse knowledge and lore. It was also the greatest of the wild horse ranges in the West, although the Great Plains, California, and the Northwest had considerable numbers of wild horses. Their origins were common: Spanish horses, escaping or stolen or traded for from Spanish settlements on the Southwest frontier.

By the time American settlers arrived in these areas bringing with them horses called American—a conglomeration of eastern breeds from Europe blended to produce greater size—the decline of the Spanish horse, wild or tame, had begun.

A mustanger named Bob Lemmons, from the Texas brush country where he chased wild horses during the last quarter of the nineteenth century, wrote: "A lot of times when you'd spot a bunch of horses, you'd think they were mustangs, but you'd find out you had horses that had just gone wild."

Along with other horsemen of the time, Lemmons distinguished between Spanish types and others called American. James Cook, who lived and witnessed varied experiences for fifty years on the frontier, said that by 1880 almost all Spanish mustangs had disappeared from the plains, and just a few were to be found among some of the Indian herds. But even by 1885, Captain W. P. Clark, a frontier cavalry officer at various posts, was of the opinion that the Indian pony had undergone change from its Barb ancestry in North Africa.

The settlers' tide westward was the first major dilution of the mustang horses as hundreds of settlers' horses became lost or stranded, or merely turned loose to range. Many joined with the mustang bands, promoting a characteristic change in the herds.

Frank Collins noted in 1870 that horses on the Texas panhandle grew larger than mustangs in southern Texas. He wrote that some of the stallions on the former range weighed 1,000 to 1,100 pounds, a good 400 pounds more than the mustang usually weighed. These heavier horses Collins attributed to the "American horses lost or stolen by Indians from emigrant trains going to California."

Collins is backed by Thomas Dwyer, writing in 1872, that some of the wild horses in Texas displayed not only fair size, but weight, power, and symmetry that he credited to "American stallions and mares which, from time to time, escape their owners and join the mustangs."

And in the Far West, California, Titus Fey Cronise, while studying the natural wealth of California in the middle 1860s, said that the native Mexican horse—Spanish horse—"while of great endurance, lightweight, and excels in steady liveliness, was not suited to the demands of American settlers, American and half breeds [American horses crossed with Spanish horses] are fast supplanting the native stock."

Here was destruction of the mustang by alien blood. And while this was occurring, men in other areas had shot the mustang out of existence. Consider California, since what happened there with the onrush of American settlers, was to be repeated a few decades later on the Great Plains.

About 20,000 wild Spanish horses roamed "hither and yon in squadrons" in the San Joaquin Valley. Americans slaughtered these horses, to take the land for town sites, ranches, and farms, with the same vehemence they slaughtered the grizzly and shot out the elk and destroyed the pastoral life of the native sons. What horses the Yankees missed, the droughts of '64 and '72 staggered into inconsequential numbers.

The event was repeated wherever horses occupied lands and interfered with the manifest destiny of the Americans. When five million buffalo could be exterminated, a million horses considered vermin were little challenge at best. Texas, which may have had a million mustangs within its own borders, has been without a wild horse for years.

By the time Nevada was beginning to make her history, that of the mustang, the Spanish horse, was nearly finished. Wild horses that became part of Nevada—and one has to read hundreds of old Nevada newspapers to learn the following—were horses from the East. American horses. They carried the blood of Percherons, Belgiums, Clydesdales, Suffolks—all draft breeds of Europe—and were crossed to lighter breeds as the Thoroughbred, Hackney, German and French Coach, and the Morgan.

Countless other news items tell of ranchers bringing these breeds into the state and turning them loose on the range. Equally countless items tell of depressed times and ranchers, rather than feeding their horses, turning thousands loose to fend for themselves.

Nothing more created the wild horses that roamed through Nevada; no mustang herds to lend Spanish blood, since before settlement wild horses were unknown.

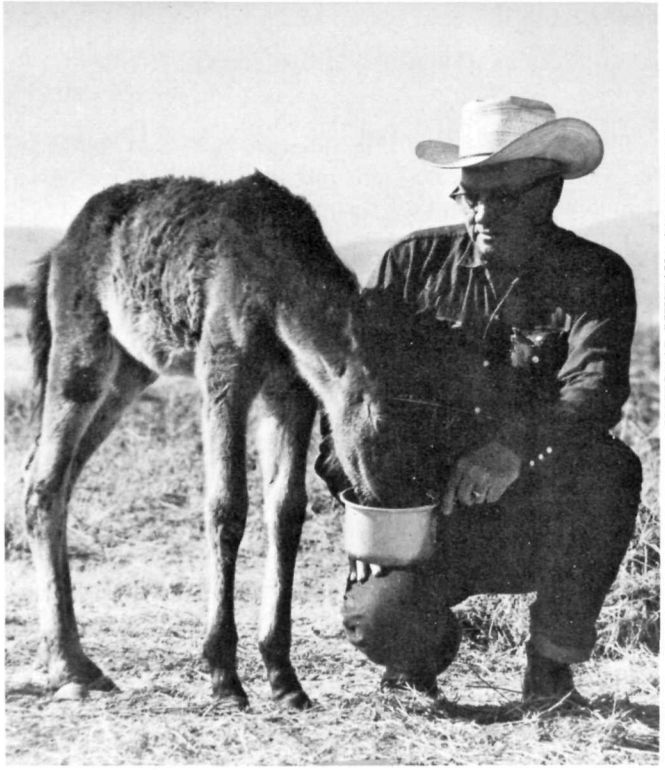
Early-day Nevada horsemen, like their Texas counterparts, knew their horses thoroughly. Jack Grover, writing in 1948 of his experience chasing Nevada horses years previously, discerningly noted: "Running mustangs is what we used to call it over in Nevada. Sure we knew those horses weren't 'mustangs,' but what of it?"

So Nevada's wild horses, rather than descendants of the Spanish mustang, are as much a melting pot of horses as its citizens are in nationalities. (And the other claim that today's wild horses prove their Spanish ancestry by virtue of one less lumbar vertebra [a pet theory, by the way] has been disputed by Dr. Robert M. Stretcher. In the *Journal of Mammalogy*, Dr. Stretcher proves that the Arab horse, the grand ancestor of the Spanish horse, instead of having a distinctive five lumbar vertebrae, more often had the conventional six.)

Is the wild horse, therefore, worth saving?

Yes, even with the dismissal of Spanish heritage and vertebrae malarkey. And for the same reasons that cause most Americans to be aroused to protect other animals in danger of being brutalized and commercialized. Call the motivation sentimental if you wish, even irrational, but it does not dismiss the reality of the concern. This attitude has saved numerous animals in the past and is working now for seals, whales, the pupfish, and others.

The wild horse, moreover, is one of the few animals that has aroused widespread concern. Ironically, that same sympathy might be detrimental to the welfare of the horses, because what is often overlooked is that the horse is essentially a free-roaming plains denizen. Although his tenacity has adapted him to inhabit some of the worst country, the horse no longer has the freedom to mingle with other herds. Fencing has forced herds to isolate, remain localized, and inbreed. Nothing is more detrimental, and some wild horses are displaying ugliness and disintegration of conformation.



NATIONAL MUSTANG ASSOCIATION

Tom Holland of Utah, president of the National Mustang Association, is active in movements to preserve wild horses, on the order of proposals mentioned in this article. He reports numerous shootings of horses on the range, and he often rescues colts when their dams have been shot. This photo was taken in southern Nevada.

Also, it would be presumptuous to assume that ranchers ever would allow the herds to increase beyond certain limits without taking action. Nature herself prescribes dispassionate solutions when animals overextend the ability of their environment to support them.

Of course, hunting or shooting is not being recommended. But the government should be allowed to periodically round up excess horses. Not unlikely, the better horses would find local buyers. They can be trained into satisfying pleasures horses. Old, crippled, and inbred horses should be disposed of.

Some of the organizations devoted to protecting the wild horse are now discussing this approach. The conditions are reasonable enough to encourage participation by ranchers and to allow the BLM to function in its responsibilities.

It could mean better wild horses on the range, living, finally, unmolested. ■

Anthony Amaral, a free-lance writer on western Americana and natural history, has three books to his credit. Currently he has just finished a book about Nevada's wild horses.

PRAIRIE POTHOLES

keith w. harmon

BUREAU OF SPORT FISHERIES & WILDLIFE

Typical small pothole, Otter Tail County, Minnesota.

NEW ENGLAND HAS ITS SEASHORE, the West its spectacular Rockies, and the Southwest its colorful deserts. The northern prairies, however, seldom leave the modern tourist awestricken. Highway surveys show that most travelers passing through the Dakotas are doing just that—passing through, and quickly.

Few of the speeding tourists realize they are passing through a valuable and interesting biological phenomenon, a galaxy of marshes, ponds, and small lakes known as prairie potholes. Little understood, less appreciated, but with their own intrinsic beauty and bursting with life, these reed-rimmed basins are as typical of the northern prairies as the mountains are of the West and the seashores are of the Northeast.

Prairie potholes are scattered over some 300,000 square miles of North America, of which about 60,000 square miles lie within the United States, mostly in the Dakotas but including a significant part of western Minnesota. In Canada, the pothole zone stretches from southwestern Manitoba through southern Saskatchewan into southern Alberta.

During the Ice Age, this land was shaped and reshaped by massive glaciers that ground large chunks of ice into the earth. When the glaciers retreated, the buried ice chunks melted, leaving behind small basins—the potholes. One hundred or more basins per square mile are common. Each pothole fills from rain or snow falling on the surrounding few acres, and empties by seepage of the water into the soil, by evaporation, and by transportation of the water through plant leaves. No streams lead into or out of the ponds, unless man intervenes with a ditch. Ideal conditions for filling potholes with water consist of fall rains frozen into the topsoil by a hard frost and followed by a heavy winter snowpack. When the snowpack melts in the spring, the meltwater cannot percolate into the frozen soil, so it runs readily into the potholes. At any time of year, heavy rains producing plentiful runoff can replenish the potholes.

Tallying pothole areas is a formidable task, but estimates made in 1968 for the Dakotas and Minnesota place the figure in excess of 3 million acres. Prairie wetlands come in all shapes, sizes, and kinds, but they are of four main types. The first type is temporary wetlands, the field puddles that hold water for a few weeks as the snows melt or after heavy rains. Dry the rest of the year, temporary wetlands usually are farmed. Then there are semi-permanent wetlands, shallow marshes that contain water in most years until July. The other two types, deep marshes and open water areas, hold water except in the driest years.

Wetlands play a vital role in the lives of nearly all forms of prairie wildlife—from bobolinks to pronghorns. However, most closely tied to wetlands are the ducks and other aquatic birds. The prairie pothole country contains only about 10 percent of the available duck nesting habitat in North America. But that 10 percent produces 50 percent of the ducks raised in North America in an average year! It is aptly called the "duck factory of North America."

Let the pothole country go down the drain, and we must settle for a duck population one-half or two-thirds smaller than what we have today.

The effect of losing the prairie potholes on North American duck populations was clearly demonstrated in the "dirty thirties." Prolonged drought plagued the prairies. Potholes dried up. Temporary wetlands went first, then the more permanent ones. Finally even deep prairie lakes were waterless. As the drought's grip tightened, duck populations skidded to an all-time low. Only the return of life-giving rains reversed the trend.

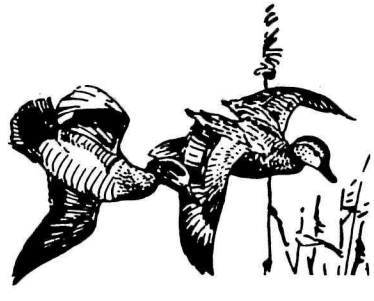
Even today potholes are periodically dry. This condition should come as no surprise. They are located in a region that historically was clothed in grasslands, and grasslands develop under semi-arid conditions. When ducks arriving on their ancestral breeding grounds find poor water conditions, they tend to move north into Canada where water levels are more stable. Unfortunately, many breeding pairs there do not get down to the business of raising ducklings as they do on their native prairies.

If drought is common on the prairies and bad for the returning ducks, why are prairie potholes so important? The answer lies in the fact that though seasonal duck populations are reduced by an occasional drought, the dry spell can be a blessing in disguise. Periodic drying and flooding of wetlands are the key to long-term duck reproductive success. Temporary wetlands go dry almost every year and shallow marshes about six years out of ten. Exposing pothole bottom muds and vegetation to the air causes nutrients to be released. When the ponds and marshes are reflooded, plant and insect life increases rapidly. An abundant supply of insects is then available for food when ducks arrive on the nesting grounds. Insects are thought to be important as a source of protein for maximum egg production.

Ducks need privacy, particularly during courtship on the prairies. Besides providing food, temporary wetlands spread breeding pairs over the landscape for maximum isolation and privacy. Thus, permanent wetlands produce more ducks if temporary wetlands are nearby.

Shallow marshes, in addition to having high insect populations, have heavy growths of emergent vegetation because of periodic drying. When they are reflooded, this vegetation offers protection for young ducks during their early lives. Each marsh is a natural duck hatchery providing abundant shelter and plenty of protein. Man, for all his knowledge, could do no better. Deep marshes and open water areas provide more permanent water where ducklings can develop to their flight stage, protected from predators, after the less permanent wetlands go dry.

As winter begins to descend on the prairies, these wetlands assume other values. They serve as resting and feeding areas for migrating ducks as they move to their southern wintering grounds. Later their weedy shorelines provide winter havens for pheasants, prairie chickens, and



DRAWINGS BY BOB HINES

other grassland wildlife. The key to wildlife abundance on the prairie is large numbers of wetlands and different kinds of wetlands, subject to the periodic drying and reflooding of the natural cycle.

Much is known about duck biology, and much remains to be learned. To our good fortune, ducks have handled their own management for thousands of years—doing a respectable job of it at that. But waterfowl have no control over the fate of the wetlands that they so desperately need.

"Progress" has reached the prairies. A duck is no match for a man equipped with modern machines and technology. Possessing these forces, man is causing permanent drought by ditching and draining the potholes. When the rains return, ditched wetlands are no wetter than the surrounding fields.

Reclaiming wetlands for growing crops is probably almost as old as farming. It is certainly as old as agriculture on the prairie. Early soil surveys in Minnesota mentioned tile drainage before the turn of the century. The acreage of prairie wetlands so far drained, at both public and private expense, is staggering. By 1950 about half the wetlands in the United States' share of the pothole country had been drained.

Under our present system of land ownership, there is little to restrict private drainage. In fact, most state laws encourage it.

Progress in reorienting outdated state laws has been slow to nonexistent, and state policies have wavered. The director of Minnesota's Division of Lands, Minerals and Waters, for instance, recently has given attention to the nonagricultural values of wetlands. But other officials seem unconcerned. Unfortunately or fortunately as the case may be, directors are subject to replacement as each new governor is elected. Specific legal guidelines are needed, as each director has a different philosophy toward potholes.

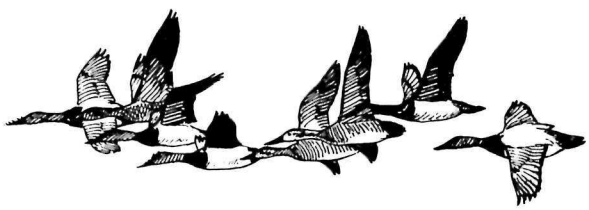
The most controversial issue involving wetlands has been U.S. Department of Agriculture (USDA) payments to landowners for drainage and the consequent destruction of public values primarily for private gain. These payments are made through the Agricultural Conservation Program. Engineering assistance is provided by the Soil Conservation Service—the technical arm of USDA.

As early as 1949, federal payments for drainage were in the limelight. An article in *Field and Stream* magazine pointed out that in Day County, South Dakota, USDA in 1948 had paid 350 farmers $17,285 for constructing 43 miles of ditches to drain 1,400 potholes. In Minnesota and

the Dakotas, 64,000 individual marshes were drained in 1949, all with federal assistance. From 1953 to 1961, subsidies were paid for drainage of an average of 9,885 acres of wetlands per year.

Because of public opposition to drainage, Congress passed PL 87-732, which required the Interior Department to investigate the requests for federal drainage payments in the Dakotas and Minnesota. If a drainage request is denied, Interior must offer to pay for an easement that restricts drainage or to buy the land. The landowner may refuse, but if so, federal assistance for drainage is denied for 5 years. The 5-year waiting period on many wetlands has already expired. As yet there is no evidence that the federal government is paying for draining these wetlands. However, there are plenty of signs to indicate that as the 5-year restriction runs out, cost-shared drainage will again be in fashion.

To further underscore its intent that federal money should not be spent to destroy valuable wetlands, Congress passed the Reuss Amendment in 1963. Through an annual amendment to the Agricultural Appropriation Act, this law prohibits cost-sharing drainage of shallow marshes, deep marshes, and open-water areas nationwide.



Even with these restrictions, drainage is still considered in agricultural circles as an approved land management practice. Therefore, problems and debates persist. As an example of the problems still faced, it is the wildlife agency that must inform the landowner when drainage payments are denied because of Interior Department objections. Thus, the gap between wildlife and agricultural interest widens, making wetland preservation even more difficult.

The Soil Conservation Service, through its own interpretation of the law, provides engineering assistance to the landowner if other than Agricultural Conservation Program funds are used for drainage. Engineering is expensive, and free help gives the landowner an incentive to drain wetlands even though no money changes hands. Just an engineer's comment, "You can easily drain that wetland in that direction," is enough to have the plug pulled on a valuable pothole. This brings heavy equipment into an area, which in turn provides a stimulus for additional drainage. Contractors work more cheaply if they can stay in an area and avoid moving costs.

One unfortunate aspect of the pothole controversy is that it has brought ill repute to what was originally supposed to be a conservation program. Many good conservation practices are supported by the Agricultural Conservation Program, such as tree planting, strip cropping, terracing, contour plowing, and installing livestock ponds. However, drainage is a land improvement practice having as its ultimate object not conservation but more crop production. The President's Advisory Commission on Food and Fiber has clearly stated that drainage is not a conservation practice and should be discontinued.

It is difficult to justify strictly agricultural programs based on increased crop production through drainage in the prairies when the Dakotas and Minnesota have over 10 million acres of land retired from production under the federal farm program. Rather than promote drainage, federal conservation agencies should push wetland maintenance programs.

The entire Agricultural Conservation Program was in serious trouble in 1970. President Nixon's recommended agriculture budget contained no funds for the Agricultural Conservation Program. Although he finally approved that portion of the farm program, he commented that it had become dominated by crop production practices and no longer was truly a conservation program.

In light of these developments and the legal restrictions imposed on cost-shared drainage by Congress, it is difficult to understand why drainage is still sponsored with taxpayer funds. The answer is that there is a loophole—flood control. In 1954, Congress brought a glimmer of hope for sound management of all prairie resources when it passed the Small Watershed Protection and Flood Prevention Act. During House debate, the statement was made: "Simply stated, the purpose of such legislation is to stop water where it falls, to store surplus water, and to release it slowly."

In 1956, the bubble burst. (It had previously had a few slow leaks anyway.) During Senate debate on a proposed amendment, a statement was made that "flood control" should be construed to mean not only land treatment and small detention reservoirs, but also drainage channels to remove excess rainwater or overflows from flat lands. This one statement has been seized upon as a mandate to include drainage channels in all small watershed projects.

It has been argued that a natural stream that has been straightened, widened, and deepened to handle flood waters does not *directly* contribute to drainage of potholes. However, there are no legal restrictions to prohibit landowners from draining their wetlands into the taxpayer-financed channels. If by digging a ditch for "flood control," the federal government has reduced considerably the distance a landowner has to dig his pothole drainage ditch, the landowner might as well have received a direct drainage subsidy. Drainage, be it "direct" or "indirect," removes important wetlands from the landscape.

Private drainage surveys made in the Dakotas and Minnesota by the Bureau of Sport Fisheries and Wildlife show that approximately 125,000 acres of shallow marshes, deep marshes, and open-water areas were drained from 1965 to 1968. Channels constructed in small watershed projects and

flood control projects of the Army Corps of Engineers, local highway ditches, and other ditching systems were used as outlets for draining these wetlands.

New highway construction in the prairies threatens vast numbers of wetlands. Less obvious a threat than ditches dug solely for drainage, these projects can place drainage outlets within easy reach of most landowners. Federal funds go to both county and state highway departments to help expand the road system. Along with the money come certain engineering specifications conducive to increased drainage.

As part of these construction projects, roadside ditches are reshaped so runoff reaching the ditches will move to the nearest creek or river. A recent 6-mile road construction project in the Dakotas illustrates the point. The roadside ditch provides the outlet for rapidly removing water to a nearby river. Since it was completed in the fall of 1970, landowners have already ditched many permanent wetlands into the highway outlet.

Aerial photographs of the project show that within one-half mile of each side of the road and one-half mile past each end (7 square miles) there are (or were) 416 individual wetland areas. The wetlands totaled *1,018 acres*. The opportunities for wetland drainage provided by this one small project are unbelievable. Recent studies of duck production in this general area show that approximately two ducks per acre are raised on such wetlands. This means that a single road construction project, 6 miles in length, is now in the process of eliminating waterfowl habitat that produced more than 2,000 ducks per year. And the taxpayer footed the bill!

Once the public helps pay for establishing drainage, by whatever route the payment is made, the paying does not end. A landowner can deduct the costs of drainage from his income tax if the cost does not exceed 25 percent of his gross income. Amounts exceeding 25 percent can be carried over and deducted the next year. The cost of maintenance is likewise deductible, except there is no 25 percent limitation.

Prairie wetlands, then, are faced with a combine of cost-shared drainage, free engineering services in small watersheds, "flood control" drainage ditches, road construction projects, private drainages, and tax writeoffs. Existing official attitudes and programs, both federal and state, must be reoriented to maintain these important wetlands. They must be based on ecological soundness, not environmental degradation and destruction.

Programs that leave the landowner with unrestricted choice between conservation practices and agricultural production practices are no longer in the public interest. Furthermore, there is little rationale in spending tax dollars for production when true agricultural conservation programs are wanting. North Dakota, for example, ranks either first or second each year in the number of acres damaged by wind erosion.

It is likewise questionable for federal money to be spent on road construction that stimulates drainage. It is even more questionable when the construction is being carried out in states that are steadily losing population.

Some gains have been made in preservation of wetlands. In a publication entitled *Land Use and Wildlife Resources*, the National Academy of Sciences listed 83,000 acres purchased in Minnesota and the Dakotas by state game agencies, another 86,000 acres purchased by the Bureau of Sport Fisheries and Wildlife, and Bureau easements restricting drainage obtained on about 500,000 acres of essential wetlands. In addition, Congress passed and the President signed the Water Bank Bill, to begin in 1971. This program would give landowners an annual payment for leaving wetlands undisturbed. It remains still to be funded.

As complex as preservation of wetlands seems, it can be accomplished—if the public wants it to be. To this point, efforts for wetland preservation have been somewhat delaying actions. A three-point approach is needed if sufficient wetlands are to be maintained in real security. First, we must decide how many wetlands are needed. According to a report on fish and wildlife resources in the Souris–Red–Rainy River Basins in the heart of the United States pothole country, "Demand in all basins for hunting is substantially above capacity of the resources to support it at the desired quality level." In addition, half the U.S. pothole acreage already has been drained. The answer to how many wetlands must be saved is obviously *all*. Attaining this goal may not be possible, but nevertheless it is the right answer to the question.

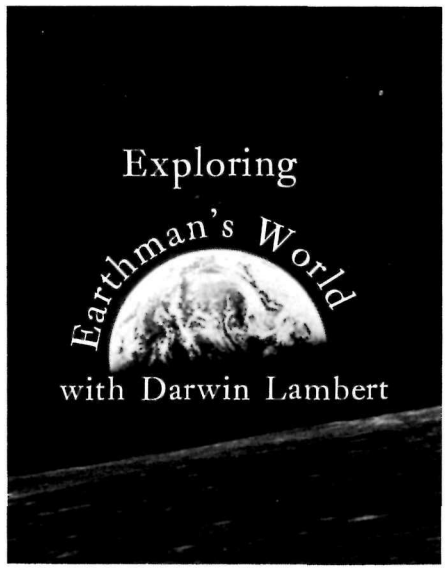
Second, once we establish and accept the goals, we have to remove stumbling blocks such as federal drainage and drainage incentives. These incentives must be eliminated from the Agricultural Conservation Program, small watershed and flood prevention projects, road construction, and income tax deductions. This part of the solution lies with the taxpayer. For one thing, the taxpayer must insist that his money not be wasted on paying landowners for doing things that return a direct profit to the landowner while destroying public values. On the other hand, maintaining productive farm land and preserving wetlands are true conservation endeavors. Meeting these objectives involves long-term investments. Landowners may encounter cash outlays to maintain public values and realize no immediate profits. In such cases the public should help assume a part of the costs.

This brings us to the third part of the solution. If people want wetlands and wildlife to remain a part of the prairie landscape, they will have to help pay for keeping those wetlands that usually provide no immediate income for the landowner. The landowner will not assume this financial burden on his own. According to the old adage, "You get what you pay for"; to date we have paid very little, and that is what we have.

Only by following such a course of action will the prairie wetlands be saved. In the final analysis, preservation of our unique wetland resource lies in the hands of the people, for wetlands are for people as well as the wildlife. ■

Dr. Keith W. Harmon is North Central Field Representative of the Wildlife Management Institute. Trained in wildlife management and conservation communication, he has worked for the North Dakota Cooperative Extension Service, the Minnesota Game and Fish Division, and the Michigan Wildlife Division. The Institute is dedicated to the restoration, improved management, and wise use of renewable natural resources.

Where Are We Going?



A series of short articles examining man's relationship to nature.

EARTHMAN'S WORLD must be the same world we all live in, or on. In what way are these small essays any different from the environmental nagging that now crowds the media?

Beginning with the environmental decade this series tentatively suggested an attitude, citizenship, and art called "earthmanship," then in subsequent months presented a diversity of views. Man's accumulating power was seen not only as a "threat of impending doom" but as an opportunity for us to become "the conscious and guiding force in evolution." Our society's fragmented, looking-down-the-nose view of nature was contrasted with nature's often-glorious wholeness. Swiss treatment of an entire nation as if it were a national park was highlighted. The typical consumer was revealed as encouraging pollution and misuse of resources instead of "assuming responsibility for his earth and living accordingly."

"The sense of wonder" was suggested as a guide for our "evolving society." The United Nations was seen realizing that "we must make peace with the natural forces on the surface of the earth if we are to make peace within our own species." Literature was revealed as influencing the man-earth course, and Hermann Hesse was highlighted as one significant contributor to "harmony between spirit and nature, individual and society, God and world." Prevailing political habits and governmental structures, nationally and internationally, were revealed as ill-adapted to cope with environmental problems, despite discovery that environmentalism is "good, realistic politics."

Creation of a "third world," by combining the world of nature with the world of brain-achievement, was advised—thus bringing closer the "responsibilities and nobility of character envisioned by those thinkers who may be acclaimed as the creators, if not of man, then of his soul." Alaska was examined as a microcosm (!) of the worldwide environmental crisis through which a most-desired-way-of-life, not maximum consumption as many have supposed, seeks a healthful balance of conservation and development. Planetwide air pollution was recognized as not only a physical threat but a "nasty insult" to dignity of man. Vast numbers of urbanites were seen as following the "Out Trail into the wilderness," partly because there, for a time, one "is at home."

Although Earthman's World is indeed everybody's world, writers in this series are looking at it afresh. While recognizing ecology as a valid guide toward environmental harmony, they perceive that the all-too-few broad-gauge ecologists need a great deal of help in setting a course through man's confusing swirl of cross-motivation. Assessing the environmental war as both complex and long-lasting, they reconnoiter anew the region of conflict, hunt the hidden forces, seek routes along which man's varied knowledge, emotion, and action can mesh with each other and with natural process both outside and inside ourselves. They seek reinforcements from more different flows of human incentive through more different disciplines.

The function of these essays is not to map Earthman's World but to spotlight important but thus-far obscure areas in such manner as to stimulate thorough exploration. Clues to misty places are numerous, and more explorers are needed.

Art, for example, is environmentally meaningful in the long view, affecting our vision of ourselves and the world, the directions and energy of our actions. Artist Robert Motherwell confirms that art is skill "in expressing human feeling" and asks, "What have we gained in conquering a virgin piece of nature if, in the process, we have destroyed the sensibility with which the human spirit perceives the world—that is, if we have destroyed our capacity to feel?" Not only the visual arts but music, fiction, and poetry—all arts, past and present—can and should be revealed as potent influences on man-earth relations.

And religion, both innate and institutional, is surely one of the most fateful of long-range environmental influences whether or not we believe Western religion has encouraged conquest while Oriental religion has encouraged cooperation with nature. The famous to-have-dominion phrase in Genesis, it seems, has long been mistranslated to bolster man's arrogant conquest of earth, whereas the original Hebrew meant not "domination" but "tender care." Theologian Joseph Sittler recently pointed out that "what man does with the world-as-nature is a result of what he *thinks* about nature . . . what evaluation he has of the world of things and plants and animals. If the world of the not-self is felt as a mere resource to be used it will surely be abused; if the world is regarded as a gift, a wonder, as a reality having an integrity of its own—it will be rightly used."

And psychiatry is recognizing that man-earth relationship may determine sanity, may create or destroy the feeling of the worthwhileness of living. Psychiatrist Edward Stainbrook said not long ago, "It is only as man can confidently, securely and exultantly repossess his own nature and the greater nature of what we know as the world that he remains resourcefully in the directing vanguard of his own destiny. We can only go with nature and with our feet pressed against the earth."

And what of the other behavioral and social sciences? Of philosophy? Of the cumulative effects of viewing our hospitable little planet from the desolation of space? Of the sometimes marvelous harmony with nature of so-called "primitive" peoples? Of the instinctual leanings and life styles of present-day youth? Of the fateful introductions to nature that parents consciously or unconsciously perform for infants? Of the undeniable ultimate influence on the environment of the forms and content of all education?

"Where Are We Going?" asks not so much about this series of small essays as about the course of man. Environmentally oriented exploration of Earthman's World has hardly begun. ■

Darwin Lambert, formerly a newspaper editor, now is a free-lance writer with several books and many magazine articles to his credit. A Trustee of National Parks & Conservation Association, Mr. Lambert co-edits this series of essays.

npca at work

DRAINAGE PETITION DISMISSED

A Florida circuit court has dismissed a petition, opposed by the Association, to establish a drainage district in a portion of the Big Cypress swamp. If such a district had been set up, it would have permitted the drainage and development of parts of a swamp widely recognized as vital to the survival of Everglades National Park. Efforts are being made to take the swamp into public ownership to protect the park.

We reported in February 1970 that NPCA and the National Audubon Society had filed briefs opposing the drainage district on the following grounds: some property owners in the proposed district objected to drainage of their land, preferring it in its natural state; drainage would disrupt water flow to the park; drainage would wreck the swamp ecosystem; and drainage would damage southwest Florida's water suply.

The court's findings of fact supported these contentions. The court said also that the drainage district would not be in the public interest due to pollution from proposed dairy farming leading to destruction of breeding grounds for fish and wildlife.

Of particular interest from the standpoint of establishing precedent, the court's findings of law hold that the drainage district "would be contrary to the Fifth and Fourteenth Amendments of the United States Constitution, which preclude any state from depriving 'any person of life, liberty, or property without due process of law.' " Environmental lawyers have been seeking for years, without notable success, to bring the Constitution's guarantee of "due process" into their legal arguments.

TELL US OF PROJECTS YOU WOULD LIKE TO HALT

The Association frequently receives letters from members and others about various destructive river basin development schemes that the writers would like to see stopped. The letters have asked for help and advice on what to do.

NPCA has a continuing strong interest in good river basin planning and welcomes information on the many examples of poor planning initiated by the Army Corps of Engineers, the Bureau of Reclamation, and other water development agencies. We would like to develop a roster of the names of people throughout the country who share our interest in river basins and who are helping to fight for sound basin planning. So please keep the letters coming. Write to Jonas V. Morris, NPCA Consultant on River Basin Planning, 2233 Wisconsin Ave. NW, Washington, D.C. 20007.

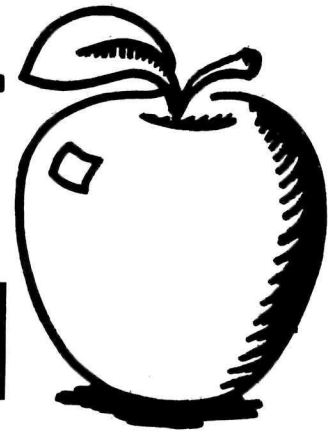
CEQ AND IMPACT STATEMENTS

One year after enactment of the National Environmental Policy Act (NEPA), the Council on Environmental Quality solicited comments concerning its role in implementing the law. In a letter to the CEQ, NPCA recommended that the CEQ change its policy on public availability of environmental information. The CEQ does not regard "draft" environmental impact statements, required under Section 102(2)(C) of NEPA, to be documents that should be available to the public. NPCA, however, documented that the CEQ's mandate to make available this information at the earliest possible stage came from NEPA as well as from Executive Order 11514, which states the need for "timely public information and understanding of Federal plans and programs with environmental impact in order to obtain the views of interested parties."

NPCA ON THE AIR

"Help-the-Environment Tips," 24 twenty-second NPCA announcements, are being heard on radio stations throughout the country. The announcements were distributed to 3,500 radio stations through the courtesy of the National Association of Broadcasters. The program is designed to inform the public about the steps an individual can take to protect the environment. It has been estimated that more than 25 million people will hear one or more of the announcements.

The DDT-less apple. Yours for 9¢.



Announcing the ECOLOGICAL FOOD SOCIETY. A rigorously independent source of organically raised foods, vitamins, cosmetics and household products. All delivered direct to your door. All certified to contain *no added pesticides, preservatives or chemical additives of any kind.* You may apply for membership by mailing the coupon below. *Membership does not obligate you to buy anything.*

Dear Fellow Human:

This is not a scare ad. If you can read—let alone smell, taste and breathe—you're probably scared enough.

Because you know that a flood of poisonous chemicals has invaded your family's diet. Robbing your food of its flavor and wholesomeness. Robbing you of your health, and perhaps years of life as well.

You know that 20 states have issued bans or warnings against their fish, poultry and game because of mercury poisoning that has caused blindness, brain-damage and death.

That doctors now suggest infants should not drink their mother's milk, because the DDT content of mother's milk in America is now *four times higher than the maximum permissible "safety" level.*

That of 20 top brands of fish sticks, 51% tested out as bacteriologically contaminated.

That the paraffin-wax coating applied (for "visual appeal") to 70% of all fruits, vegetables and produce sold in this country is a potential cancer producer, which cannot be washed off or cooked out.

That to fatten profits, 80% of the entire American beef supply is now being "primed" with a dangerous growth-hormone called *stilbestrol,* also a potential cancer producer.

That even drinking water is now so contaminated that, according to the Wall Street Journal, *bottled water is one of the fastest growing businesses in the United States!*

"Organic foods"—what are they? (And how can they help?)

"Organic" doesn't describe the food—*but how it has been grown and prepared.* Quite simply—organic food has NOT been sprayed, stimulated, bleached, colored, fortified, emulsified and processed to within an inch of its life (and yours). Some people call it "Health Food." Others say "Natural Food." We say only this: Remember how good food used to taste? And how good it was *for* you? That's what organic food, and The ECOLOGICAL FOOD SOCIETY, is all about.

Towards a "total organic environment"

More than just a supermarket by mail (or a collection of wild-eyed food "faddists.") EFS was inspired by the findings of doctors, biologists, dieticians and ecologists who were alarmed at the contamination of our food supply and the accelerating destruction of our environment.

Through the support of members like yourself, The EFS is encouraging farmers, cattlemen, and manufacturers all over the country to STOP polluting our food, our air, *our lives.* Encouraging them in the only way practical—*by making it worth their while.* A farmer won't stop spraying poisons on his crop because you hand him a copy of "Silent Spring"—*but because you promise to buy that unsprayed crop.*

Similarly, bakers will stop emasculating their bread; poultrymen will stop force-feeding their hens with arsenic to make them lay faster; food-processors will stop flooding us with phosphate-laden detergents and non-bio-degradable containers—*only when they can be sure of selling their ecologically sound products at a fair market price.*

What is a "fair market price"?

Does it mean organic foods must cost more? Of course it does! (And don't believe anyone who tells you otherwise.) But they need not cost very much more, *when you order through the nationwide resources of The EFS.*

That is because EFS prices are based on *yearly* averages. From coast to coast, our manufacturers, livestock raisers and farmers promise to abide by our strict organic principles. (And we check to make sure!) In return, EFS promises to accept and distribute their organic output—every day, every month, every season. So that the price-level of organic foods need never be more than a few pennies above that of "contaminated" products.

And even these low prices can be lowered—as, month by month, we bring more and more of the earth and its products under organic cultivation. (Our goal: the United States in seven years, most of the world in ten.)

How the Society works for you

Many members order their entire weekly or monthly food supply from the Society. Others buy just a few things, like a special honey, "natural" vitamins, chemical-free cider, etc. *But no member is ever obligated to buy anything.*

Free with your membership

You will receive the Society's COMPREHENSIVE CATALOG OF ORGANIC PRODUCTS. This is an illustrated market-place (for members only) of organically grown fruits, vegetables, meats, fowl, fish, butter, milk, eggs, cheeses, dried fruits, honey, nuts, breads, juices, cookies, cakes, candy, grains, cereals, flours, vitamins—all the foods you normally buy for yourself and your family. The Society will deliver them direct to your door. Or, as with certain perishables and non-shippables, advise you where and how to obtain them if available in your locality.

More than just foods

Your CATALOG offers virtually everything you need for a total organic environment. "Natural" cleaners—without harmful chemicals and phosphates. Bio-degradable paper-towels, containers, waxes and polishes—that perform without polluting. Beautifying cosmetics—that literally nourish your skin. Also: non-poisonous insect repellents, non-deprivational light-bulbs, home tap-water purifiers (so you won't have to buy bottled water), organic toothpaste and baby products, appliances such as blenders, juice extractors, yogurt makers, seed sprouters, and much more.

FREE if you act promptly

"BASIC-H" an organically grown cleaner for things and people too

No, you won't see it on network TV. Even though it's a marvel in the dishwasher or washing machine. And cleans hands, faces, *cars, baby things, walls, floors, fine fabrics,* pots, grease—anything at all—much better than those so-called "miracle" detergents. But it's *not* a detergent. Or even a soap. It's completely organic—made from food. So it has no harmful chemicals to hurt you. And no phosphates to pollute our lakes and streams. Why won't you see it on network TV? Maybe because it's not very expensive. Only half-a-teaspoon does a whole floor. And just one drop does a whole family's hands. Or a whole baby. Accept this sample supply as a free gift (if you promise to try it), and keep it free, even if you later decide to cancel membership.

Also free

The EFS Newsletter ($3.50 a year to the public) will keep you alert to what is happening in, and to, your environment. And what you can do about it now. Frank reports name names, tell you which companies are culprits, what commercial products are (relatively) safe, which supermarket items to buy—and beware of. You will learn to read between the lines of pending legislation—and phoney product labels. How to put the latest facts about diets, drugs, pollution and population to work in *your* neighborhood—for *your* family.

You will also benefit from the Society's continuing guide to organic living: How to choose healthful foods and a well-balanced diet (low in contaminants, high in survival). Which commercial foods are (barely) tolerable if no organic substitute is available—*with a complete listing by brand names.* What the so-called "popular" foods *really* contain (in plain, frightening English). And how to neutralize them, if possible.

Plus terse abstracts of vital government reports. Names of people and agencies to write to (or scream at) for information and action NOW. And counseling for every diet from kosher, vegetarian and macrobiotic to salt-free, weight-loss, high-protein and low-cholesterol.

Don't just hope things get better —help us make them better.

Ask yourself these disquieting questions. Who really cares (and in whose *interest* is it to care) about the quality of your environment? And the safety of your family's diet? What has the government done? What has private industry done? There is, in the last analysis, only you. And the thousands like you who are aware—and concerned—enough to get behind EFS now. *While there is still time.* Please mail the application on this page today. Putting it off for tomorrow could mean there might be no tomorrow.

The ECOLOGICAL FOOD SOCIETY
114 East 40th Street, N.Y., N.Y. 10016

Yes, please enroll me in The EFS. Membership does not obligate me to buy anything. But it does entitle me to receive (1) a free copy of THE COMPREHENSIVE CATALOG OF ORGANIC PRODUCTS, (2) a free subscription ($3.50 a year to the public) to The EFS Newsletter, (3) the Society's continuing guide to organic living, and (4) the privilege of ordering from the COMPREHENSIVE CATALOG at member prices plus postage. Naturally, anything I order through the Society must satisfy me fully, or I may return it for a prompt refund. Enclosed is my one-year membership fee of only $5 to help defray the cost of the above benefits, and support the work of EFS in restoring our environment by bringing more land and livestock under organic cultivation. I am free to cancel membership simply by returning my membership materials within 30 days and you will refund my $5 in full.

☐ Yes, also include my free supply of BASIC-H, mine to keep whether I remain a member or not.

NP-371

Name_____

Address_____

City_____ State_____ Zip_____

☐ $5 membership fee enclosed.

☐ Charge my Master Charge #_____

conservation news

COALITION COMMENDS LAND FREEZE EXTENSION

Anthony Wayne Smith, chairman of the Environmental Coalition, in a letter on January 4 commended President Nixon on the Interior Department's extension of the Alaska land freeze. Mr. Smith noted, however, that the extension of the freeze did not eliminate the need for public hearings to be conducted by the Council on Environmental Quality (CEQ) to analyze the environmental impact of the proposed trans-Alaska pipeline.

In reply to assurances by Acting Interior Secretary Fred J. Russell that Interior planned to conduct public hearings on the pipeline early in the year, Mr. Smith argued that Alaskan environmental problems are interdepartmental in nature and extend to matters beyond the jurisdiction of the Interior Department. The Coalition reiterated its position that the CEQ, as authorized by the National Environmental Policy Act (NEPA) and Executive Order 11514, is the appropriate executive body to conduct the critically important public hearings. Hearings should not be run by the Interior Department, which is the lead agency in the pipeline controversy but only one of several agencies playing a major role in the development of the pipeline.

As a result of pressure from conservation groups and the CEQ, Interior finally released its environmental impact statement on January 13, as required by Section 102 (2) (C) of NEPA. In its report Interior admitted the possibilities of oil spills and other environmental threats, but stressed the need to proceed with the pipeline, claiming that the strength and security of the nation rests on the pipeline's completion.

VIRGINIA BARRIER ISLANDS PURCHASED BY CONSERVANCY

The Nature Conservancy has purchased Hog, Smith, Ship Shoal, and Myrtle Islands off Virginia's Eastern Shore just north of Hampton Roads.

The three islands had been targeted for gross overdevelopment by commercial interests envisioning a resort and weekend cottages among the dunes. Conservationists battled for years against pressure to have the state highway department build a causeway out from the mainland; they wanted the state to acquire the islands for a park.

The islands are among the dozen barrier islands between Assateague and Hampton Roads proposed for preservation with national seashore status by the Interior Department in its recent publication *Islands of America*. Management of these barrier islands, the booklet says, should "stress protection of fine beaches and preservation of the semi-wild character of the islands' uplands." The islands and the extensive marshes on their mainland sides have high value as fish and wildlife habitat.

PORK BARREL IS LAW

The Omnibus Rivers and Harbors Act of 1970 became law despite a second appeal to the President for a veto by the Environmental Coalition. The pork barrel legislation authorized $592 million for new public works projects by the Army Corps of Engineers. In fact, the legislation committed the federal government to a great deal more—a total expenditure of $1.4 billion.

Senator John Sherman Cooper, ranking minority member of the Senate Public Works Committee, was a conferee on the bill. He refused to sign the conference report because the bill authorized "too many projects costing too much money on the basis of too little information." Senator Cooper pointed out that the House Public Works Committee, fearing a veto, arbitrarily had placed limits of $40 million on many projects whose ultimate costs will be as much as $174 million. This lower figure is misleading, according to Senator Cooper. Once the $40 million has been spent on a project, he said, "it is unrealistic to think the Congress would seriously reconsider authorization of a half-built dam or half-dredged harbor." Furthermore, Senator Cooper has documented that a third of the projects had not been cleared by the Office of Management and Budget (formerly the Bureau of the Budget) nor by the Secretary of the Army, as required by law.

In addition, no public hearings were held on those projects which had not received clearance. The Corps violated the letter and the spirit of the National Environmental Policy Act by waiting to submit environmental impact statements until after public hearings had been terminated, thus eliminating public opportunity to comment. Fortunately, two controversial dams on the Potomac—Verona and Sixes Bridge—were dropped from the legislative package. NPCA's president, Anthony Wayne Smith, had testified on invitation against these dams.

The latest Corps justification for the dams (the first in a network of 16 dams) involved water supply for metropolitan Washington, D.C. The District of Columbia supplemental appropriation for fiscal year 1971 included $1.1 million to construct an estuarial intake to accomplish the same water supply function as proposed by the Corps through building the network of dams at a total federal cost of nearly $500 million. NPCA has testified on invitation a number of times in favor of the estuarial intake.

Senator Frank Church has announced plans to introduce legislation in the 92nd Congress that would prohibit further omnibus public works legislation involving projects whose cost exceeds $10 million. Senator Church noted that once there was a time when omnibus bills expedited the speedy construction of needed public works projects. However, he added, "those days are largely past. All too often today, projects by the Corps of Engineers are much more marginal in terms of cost-to-benefit ratio, and increasingly controversial." The Church proposal would require that public works projects built by the Corps of Engineers be authorized project by project.

YOUTH CORPS FUNDED

The Youth Conservation Corps (YCC), an exciting new 3-year pilot program, has been funded at $2.5 million annually. The program, sponsored by Senator Henry M. Jackson, will provide young men and women between the ages of 15 and 18 opportunities to work during the summer months, for not more than 90 days in any single year, in the national park system, national forests, national wildlife refuges, and on other public lands.

YCC will be administered by the Job Corps Office in Interior and by the Division of Manpower and Youth Conservation Programs, U.S. Forest Service, in Agriculture. During the pilot phase the program is expected to involve 2,000–3,000 young men and women each summer with expansion later to accommodate up to 100,000 participants per year.

Participants will not be considered as federal employees but will receive nominal wages, as well as transportation and lodging expenses. All social, economic, and racial classifications are to be well represented in YCC, although selections during the pilot phase may be limited to applicants from certain school districts located near specially chosen YCC campsites.

AIRPORT SITE STUDY

The Department of Transportation recently announced the award of a $79,075 contract to CLM Systems Inc. of Cambridge, Massachusetts, to study environmental factors that should be considered in airport site selection and planning. The contract was made public by DOT Secretary John Volpe.

The contract "is a step in the right direction," according to National Parks and Conservation Association consultant Dr. Walter Boardman.

Respect

. . . respect for the kind of intelligence that enables grass seed to grow grass, the cherry stone to make cherries.

—Teo Lei, 15th century

conservation docket

The Thorne Ecological Foundation has announced the 1971 Rocky Mountain Seminar, to be held in Rocky Mountain National Park June 28 through August 14. Offered will be study in mountain geology and ecology, alpine ecology, bird ecology, animal ecology, and plant identification, and a conservation ecology workshop that will bring the seminar to a close. Information on the session may be had from Tom C. Thomas, executive secretary of the Rocky Mountain Nature Association, Estes Park, Colorado 80517. The study carries academic credit.

Public meetings on master plans for the following areas are scheduled for March; readers may write these addresses for exact dates and to express views.

Badlands National Monument
Box 72, Interior, S.D. 57750
Carlsbad Caverns National Park
Box 1598, Carlsbad, N. Mex. 88220
Glacier Bay National Monument
Box 1089, Juneau, Alaska 99801
Grand Canyon National Park
P.O. Building, Moab, Utah 84532
Guadalupe Mountains National Park, Tex. c/o Carlsbad Caverns National Park, Box 1598, Carlsbad, N. Mex. 88220
Katmai National Monument
c/o McKinley National Park,
Box 2252, Anchorage, Alaska 99501

Continued from page 2

But a full airing of all the issues is needed in a competent tribunal; namely, the CEQ. Meanwhile the only hurry is that the companies have laid a lot of money on the table; that was the risk they took. The Government should make sure that it retains control over this situation, even though the new land-freeze may expire before a decision is made (it should be renewed again), and even though a negative decision is made against a permit.

Control over the project must not be allowed to pass into the hands of the state government of Alaska by the land-selection route; no state government can stand up against the pressures of a powerful industrial combination like that which is promoting this pipeline.

It is possible that during the course of adequate public hearings it can be shown that this project is or can be made safe; the present report, in our judgment demonstrates the contrary. Until the environmental, economic, and military security of the American people, including first of all the people of Alaska, has been assured, the pipeline should not be built. —*Anthony Wayne Smith*

classified ads

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AN EAST AFRICAN WILDLIFE SAFARI WITH EMPHASIS ON ANIMAL BEHAVIOR AND ORNITHOLOGY. If you are a professional or amateur zoologist, a noted East African naturalist and a professional ornithologist will personally take you through the game parks of East Africa. THIS IS DEFINITELY NOT THE USUAL GAME VIEWING RUN. Travel in four wheel drive safari vehicles with double photo hatches. Alternate tent and lodge accommodation with excellent own camping arrangements and fine meals by European caterer. Visit the largest number of parks commensurate with the leisurely pace necessary for maximum coverage of animals and birds, and relax away from the crowds on the lakeside farm of your host. Ideal for parties of four or five couples or small professional groups. Only $1149 per person for 19 days in East Africa with a minimum of 8 participants. Write to Safari Center, 63 South Merrick Road, Massapequa, N.Y. 11758.

WANTED—Pre-1965 issues of AMERICAN HORTICULTURAL MAGAZINE. Hammond, 14 Chappell St., Brockport, New York 14420

GUIDED NATURE TOURS. Join one of our small congenial groups and explore the natural history of the Pacific Northwest, Scotland, the Canadian Rockies or Australia. We concentrate on birds and wildflowers. We also enjoy the scenery, take photographs, visit interesting geological areas and learn about seashore life. We travel by minibus, and stay at the best motels. Our program also includes a Vancouver Island camping trip. Write: John Philip, 508-990 Lagoon Drive, Vancouver 5, British Columbia, Canada.

PERSONALIZED PAINTINGS! Send us a picture or slide of your favorite view, house or nature scene. For only $45, including postage, you will receive a beautiful painting on stretched artists' canvas by a professional painter. Not a reproduction but an original painting, framed and ready for hanging. 16″ x 20″. Allow about 3 weeks for delivery. All photos returned. Portraits $30 extra. Send check or money order to: Quantra Development Corp., 15 Whitfield Terrace, New Rochelle, N.Y. 10801.

Lightweight backpack and mountaineering equipment. Imported, Domestic Canoes and Kayaks for day trips, voyageuring, or whitewater. Free catalog. MOOR & MOUNTAIN, Dept. 40, Main St., Concord, Mass. 01742.

DISCOVER what beauty lies in the mountains of South Carolina and North Carolina through 35MM color slides by Nikon F. Individualistic—not the usual scenes. Series I Summer Foothills, Series II Autumn Foothills. Packet of 6 slides per series $1.50. CAROLINA MOUNTAINS (NP) P.O. Box 501, Travelers Rest, S.C. 29690.

ALASKA WILDERNESS VACATIONS, McKINLEY NATIONAL PARK. CAMP DENALI—featuring nature lore, hiking, wildlife photography, fishing, relaxing. Sweeping mountain view. American Plan & Housekeeping. WILDERNESS WORKSHOP—ten day tundra ecology interpretive program. TUNDRA TREKS—guided hiking and backpacking trips in McKinley Park area. 20th year. For brochures: CAMP DENALI, Box D, College, Alaska 99701.

ORGANIC GARDENING AND FARMING. Experts tell how to grow better food—without poison sprays. Improve your soil; learn about disease-resistant plants; much more. 10 introductory issues: $3. ORGANIC GARDENING AND FARMING, NO, Emmaus, Pa. 18049.

Enjoy a WILDERNESS ENCOUNTER! It's An Experience . . . A Feeling . . . An Adventure. HELLS CANYON-YELLOWSTONE-TETONS-SAWTOOTHS-BIG HORN CRAGS. Enjoy the thrill of white water rafting through Hells Canyon, exploring a beautiful wilderness waterway by canoe, or of backpacking in the spectacular Sawtooths or Big Horn Crags. Ample time for ecological study, photography, rockhounding, fishing, and relaxation. Our goal throughout all of our trips is to acquaint you with wilderness living and wilderness values through personal exposure to some of the best and last-remaining wild areas. Complete Outfitters. Write Wilderness Encounters, P.O. Box 274N, Idaho Falls, Idaho 83401.

WRITERS: Need help in writing or selling? For 20 years we've helped new writers break into dozens of good markets. Write us about your work. Lambert Wilson Associates, 8 East 10th, New York, N.Y. 10003.

YOSEMITE NATURAL HISTORY ASSOCIATION. Books, Pamphlets, Maps & Slides about Yosemite National Park and Devils Postpile National Monument. Free list sent on request. BE A PART OF THE YOSEMITE IDEA. Membership in the Yosemite Natural History Association offers the opportunity for practical expression of your enthusiasm for conservation. You are invited to become one of the large group of environmentally aware members who for 50 years have supported the interpretive program in Yosemite. Write for additional information. Yosemite Natural History Association, P.O. Box 545, Yosemite National Park, CA. 95389.

STUDY ECOLOGY UNDER THE TETONS. Teton Science School offers a six week accredited high school field ecology course. Academically oriented, coeducational, June 19-July 31. A field lab. course emphasizing collecting, identification, community analysis and measurement of some environmental factors. Life zone study approach. Research project, backpacking into remote wilderness areas, canoeing. Headquarters within Teton National Park. Sponsors—Jackson School District, Teton Mountain School. Environmental Research Institute, 16 students max. Write: Director, Teton Science School, Box 1111, Jackson, Wyoming 83001.

Custom club, truck decals, patches, bumper strips. Free folder. ART CRAFT MFG., Box 1296, Webster, Mass. 01570.

Mountaineering expeditions: Teton, Gros Ventre, Wind River Ranges; Ski Touring in Grand Teton National Park; Rick Horn, WILDERNESS EXPEDITIONS, Box 471, Jackson, Wyoming 83001.

VACATION ON SAPPHIRE BEACH—ST. THOMAS, V.I. Ideal family/2 couples, week/month. Sapphire P.O. Box 84, Kensington Station, Brooklyn, N.Y. 11218. Call 212/871-8796.

EXPLORE THE SCENIC WRANGELL MOUNTAINS, ALASKA, by saddle horse pack trips. Excellent opportunity for photography, bird watching, fishing, or just enjoying a supreme wilderness experience. TANADA LAKE LODGE, Box 5-644, College, Alaska 99701.

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