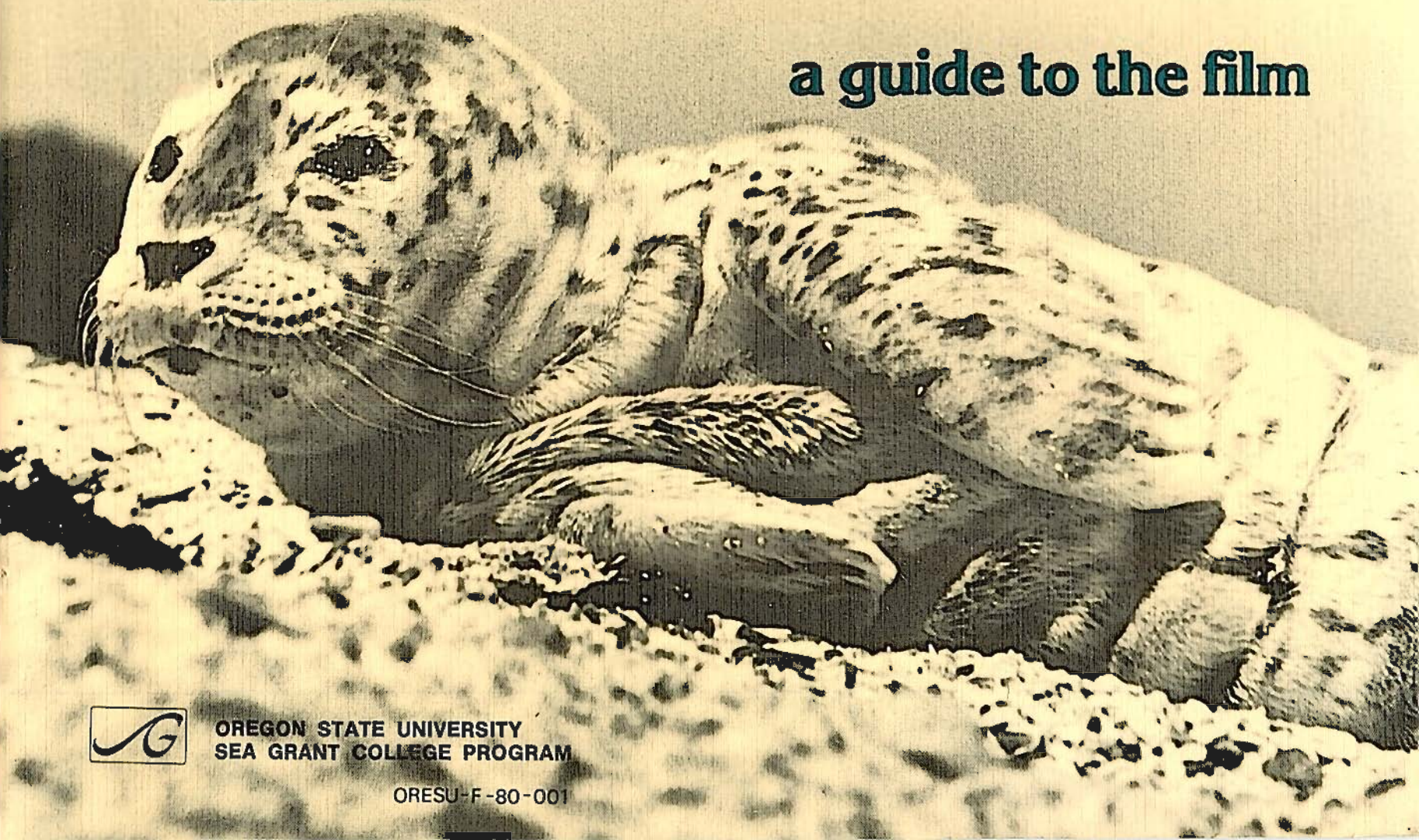
MAMMALS OF THE SEA

a guide to the film



OREGON STATE UNIVERSITY
SEA GRANT COLLEGE PROGRAM

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Mammals of the Sea

a guide to the film by Jim Larison

In 1980, Oregon State University's Sea Grant Program produced a half-hour film about marine mammal controversies along the West Coast of America. This guide goes beyond the film and presents additional information about these volatile issues.

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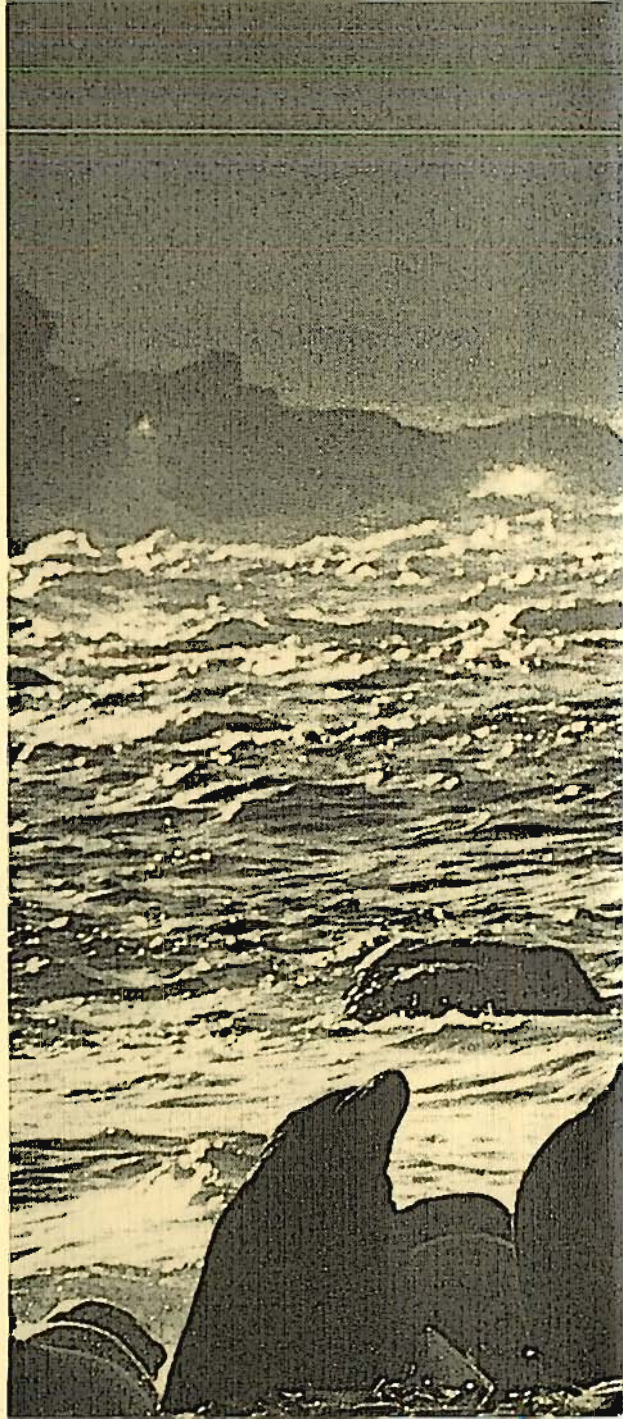
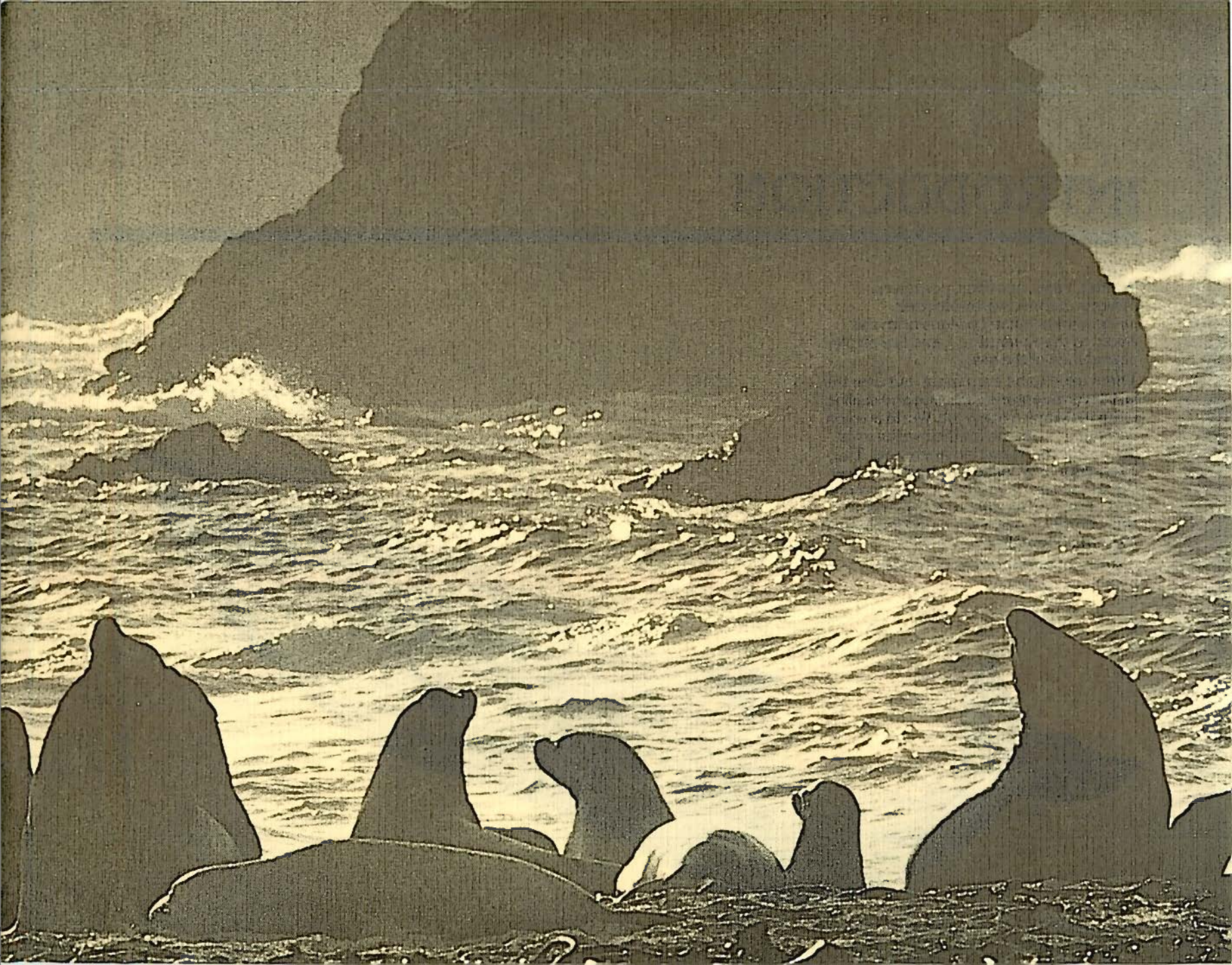


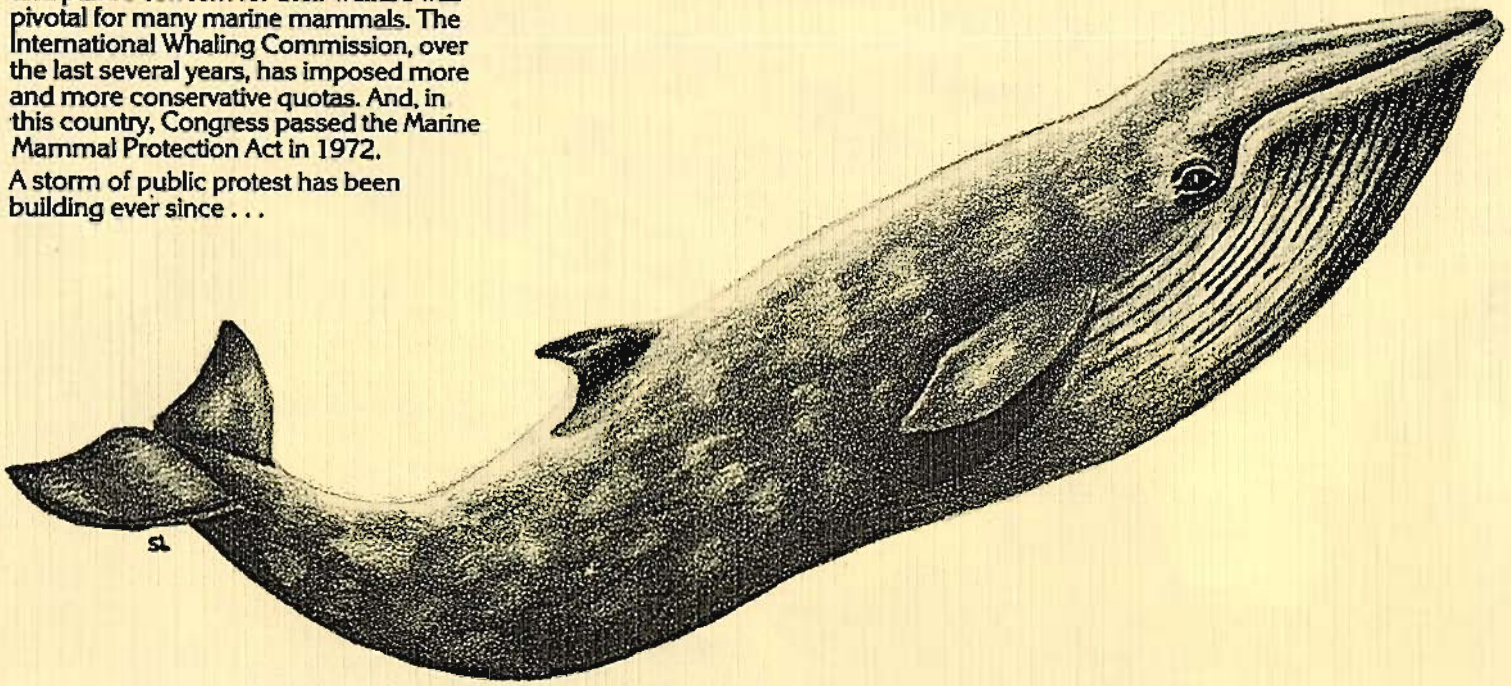


INTRODUCTION

Whales, seals, sea lions, porpoises. Millions of these warm-blooded, air-breathers inhabit oceans from the Arctic to the Antarctic . . . and live off the abundance of the sea.

There used to be even more, but over the last several centuries, whaling and sealing industries took a heavy toll. World opinion and public concern for their welfare was pivotal for many marine mammals. The International Whaling Commission, over the last several years, has imposed more and more conservative quotas. And, in this country, Congress passed the Marine Mammal Protection Act in 1972.

A storm of public protest has been building ever since . . .



To fishermen, marine mammals are voracious competitors. They eat billions of pounds of seafoods each year. Fishermen say marine mammal numbers should be strictly controlled so that humans can harvest more from the sea.

Protectionists say hands off. We should not interfere with the natural checks and balances.

But some biologists and environmentalists believe that we are a part of nature. We cannot do without the resources of the ocean. Wise use of fish and marine mammals would be in the best interest of society, they say.

PINNIPEDS

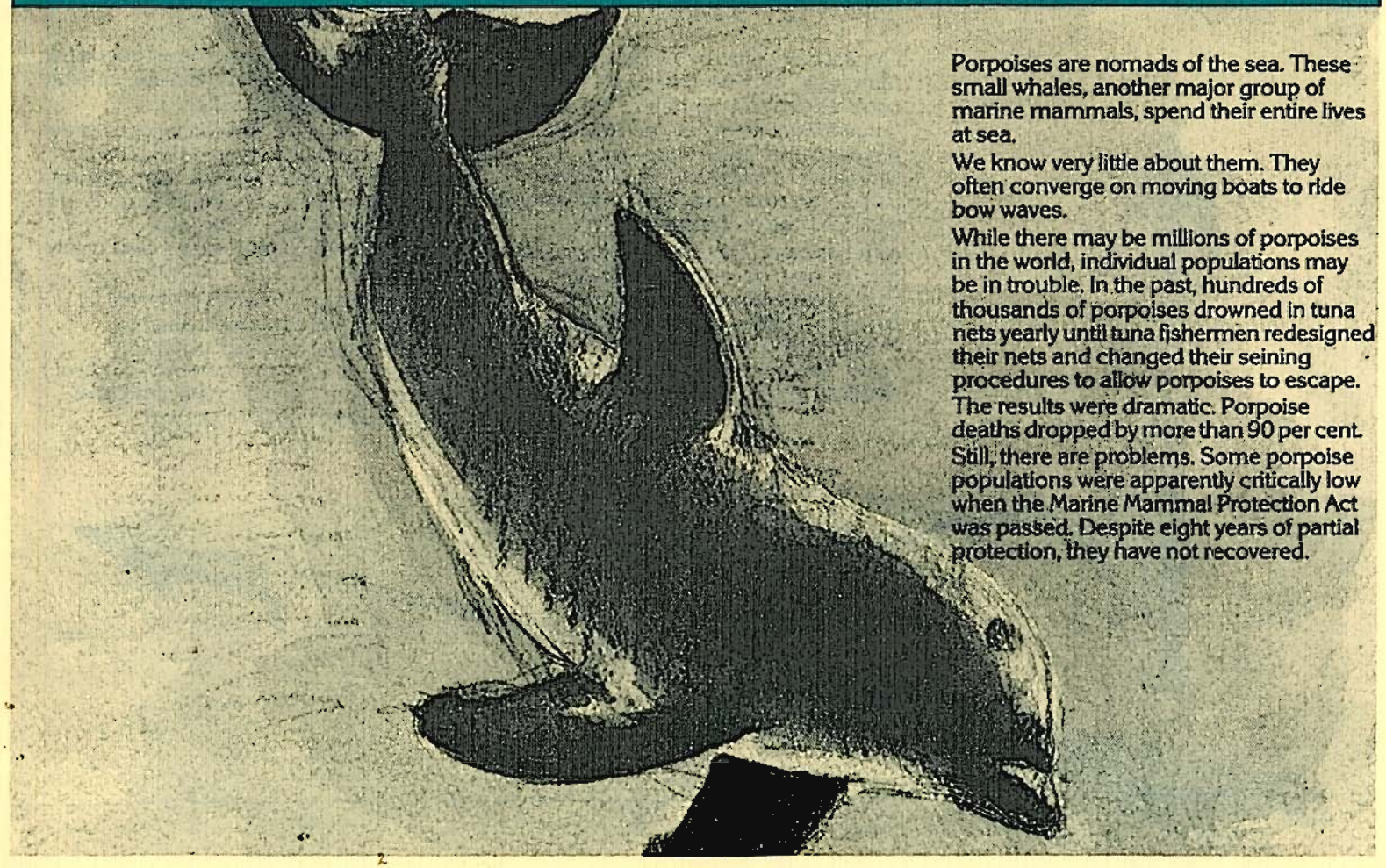
In adapting to life at sea, marine mammals have evolved in a variety of ways. Sea lions, for instance, developed webbed feet — hence their classification as pinnipeds, one of three major types of sea mammals.

We know sea lions, seals and other pinnipeds are numerous. However, it is very difficult to count them all because they spend most of their lives at sea, often in remote corners of the world. Experts believe that there may be 30 million pinnipeds in the world today.

In the past, pinnipeds such as the elephant seal were looked upon as sources of oil and hide to be harvested for profit. Fifty thousand of these ponderous giants once hauled out on a few isolated Mexican and American islands to rear their young. When their sanctuaries were discovered, it took only a few decades to decimate the population. By 1890 only 100 animals remained.

After Mexico closed these islands to sealers, elephant seals recovered dramatically and are even expanding their range northward.

PORPOISES



Porpoises are nomads of the sea. These small whales, another major group of marine mammals, spend their entire lives at sea.

We know very little about them. They often converge on moving boats to ride bow waves.

While there may be millions of porpoises in the world, individual populations may be in trouble. In the past, hundreds of thousands of porpoises drowned in tuna nets yearly until tuna fishermen redesigned their nets and changed their seining procedures to allow porpoises to escape. The results were dramatic. Porpoise deaths dropped by more than 90 per cent. Still, there are problems. Some porpoise populations were apparently critically low when the Marine Mammal Protection Act was passed. Despite eight years of partial protection, they have not recovered.

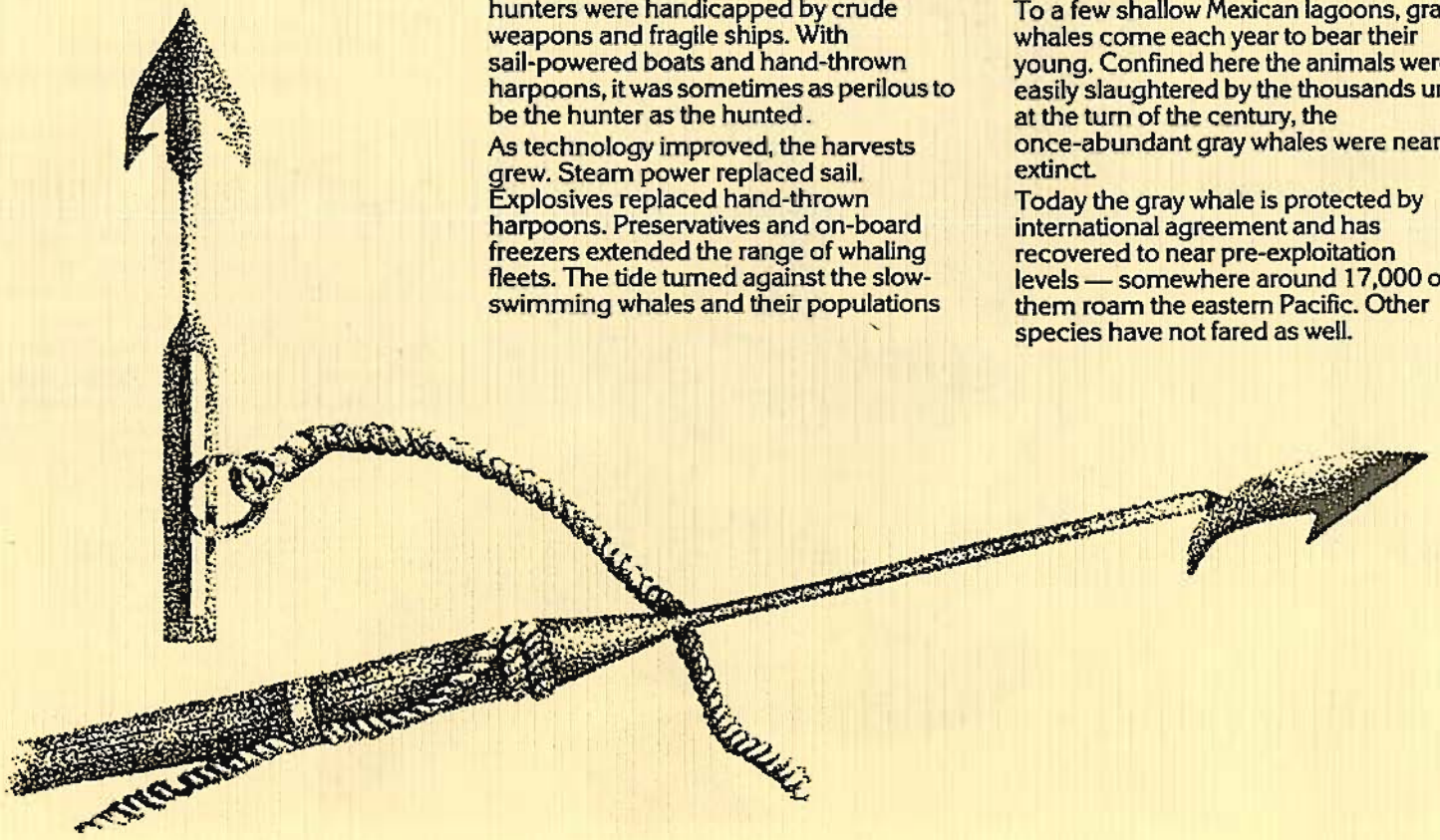
WHALES

Large whales, the third group of marine mammals, have been harvested commercially for centuries. The early hunters were handicapped by crude weapons and fragile ships. With sail-powered boats and hand-thrown harpoons, it was sometimes as perilous to be the hunter as the hunted.

As technology improved, the harvests grew. Steam power replaced sail. Explosives replaced hand-thrown harpoons. Preservatives and on-board freezers extended the range of whaling fleets. The tide turned against the slow-swimming whales and their populations dwindled. From an estimated population of four million whales there are probably only two million left today.

To a few shallow Mexican lagoons, gray whales come each year to bear their young. Confined here the animals were easily slaughtered by the thousands until, at the turn of the century, the once-abundant gray whales were nearly extinct.

Today the gray whale is protected by international agreement and has recovered to near pre-exploitation levels — somewhere around 17,000 of them roam the eastern Pacific. Other species have not fared as well.



THE MARINE MAMMAL PROTECTION ACT

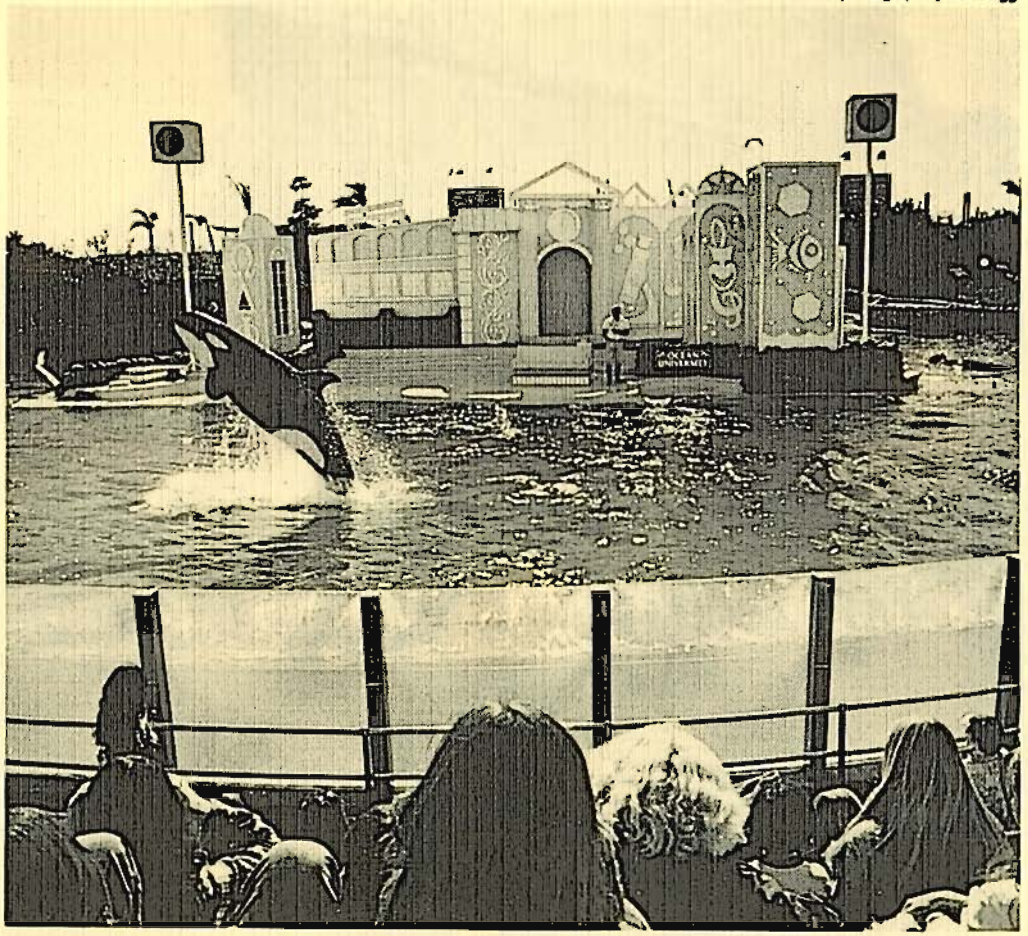
By the late 1960s and early 70s, public concern in the United States for marine mammals increased. Oceanarium stars like Shamu and Flipper introduced millions of people to the world of marine mammals. Public attitude was, in large part, formed at places such as Sea World. Public sympathy and concern led to the passage of the Marine Mammal Protection Act in 1972.

The Act says we will no longer allow these animals to be overexploited. And we will restore those groups of animals that have been depleted.

The Act declares a moratorium on the killing of marine mammals. But there are exceptions. Some native Americans are permitted subsistence hunting. Commercial fishermen can get a permit to protect their gear and catch. A limited number of animals can be taken for research.

But public opposition to the Act is building.

photograph by Don Fogg



COLUMBIA RIVER

Gillnet fishermen on the Columbia River, in the Pacific Northwest are frustrated because the Marine Mammal Protection Act prevents them from driving seals off the river. They complain that mammals have become numerous and are eating too many salmon.

Scientists say seals and sea lions have always lived in the lower Columbia. They do eat salmon, but no one knows just how many. They also eat other things, including lamprey. Lamprey, an eel-like parasite, kill salmon, so it's not altogether clear whether marine mammals, on the balance, damage salmon populations or help them.

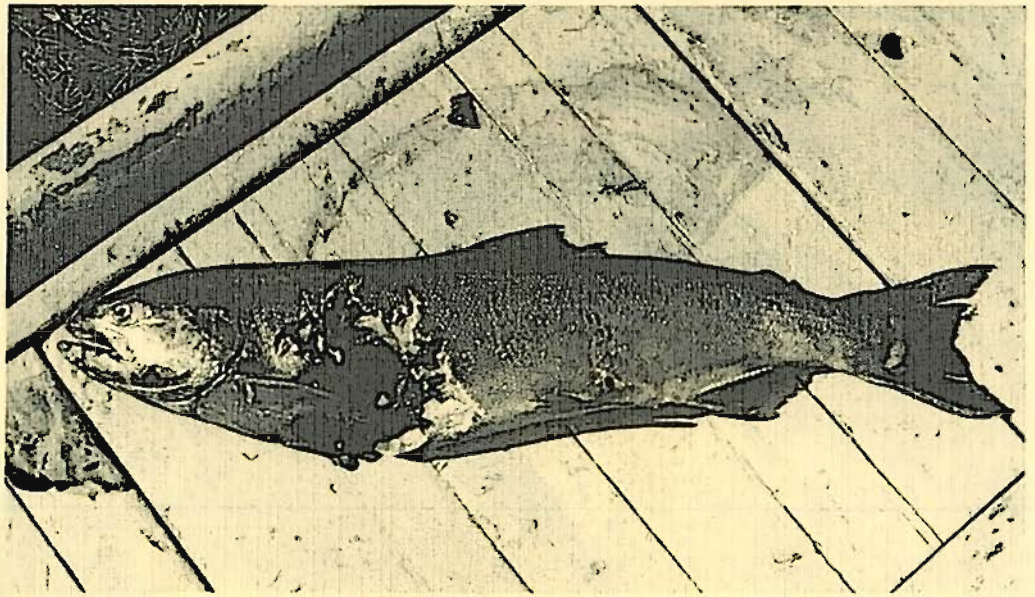
When white settlers came to the Columbia, they discovered an enormous salmon resource. They shipped the bounty worldwide. But recently, salmon fishing in the Columbia has fallen on hard times.

There are many reasons tor the dramatic decline. Giant dams now block migrating salmon returning to their spawning streams. Despite elaborate fish ladders, many never make it. Millions of young salmon are killed trying to pass through the dams on their way to sea. Water quality has suffered, too. Eroded topsoil from construction sites and logged watersheds has buried once-productive spawning beds. Our demands for water have reduced the river's flow significantly, also affecting spawning areas. And we have, at times, over-fished the river.

Bill Puustinen has been fishing on the Columbia since third grade — 64 years. It's a hard life. When the season is open, he fishes day and night. Bill has seen the good years and the bad. But recently, he complains, they have all been bad.

Puustinen thinks that seals have contributed to his lack of success. He cites the fact that some seals learn to work their way down the length of a net, grazing on salmon. They often take just one bite from the choicest portion leaving an unmarketable carcass for the frustrated fisherman.

Net robbing is frequent and troublesome, but it represents only a small part of the total diet of marine mammals.



CON

BERING SEA

Four billion pounds of fish and shellfish are caught in the Bering Sea each year. No expense is spared in the frantic rush to get the valuable catch to processing plants.

Americans, Russians, Japanese — they all come for the capelin, pollock, crabs, sable fish and salmon.

In Bristol Bay alone, in two weeks during 1979, American fishermen caught 17 million sockeye salmon, with a dockside value of 100 million dollars.

The benefits of the fishing industry to society do not stop at the dock. The impact on the world's economy and employment is substantial.

For fishermen, the Bering Sea is a commercial goldmine. But for millions of marine mammals . . . it is life itself.

Two hundred miles out in the middle of the Bering Sea, a lonely set of mist-shrouded islands — the Pribilofs — are home for one and one-half million fur seals. It's the largest concentration of marine mammals found anywhere in the Northern hemisphere.

Fur seals spend most of their lives at sea — seven months out of the year. They feed and even sleep in the open sea. Bulls arrive on the Pribilofs in mid-May. Just a few at first, they come to stake out territories and to await the arrival of the females.

By late June, hundreds of thousands of females come ashore — heavy with young.

Three hundred thousand pups are born on the islands each year. Many die of natural causes in the first few weeks of life. When fur seals are numerous more die than in the years when populations are low.

Leaving their young behind, females must periodically take to the sea in search of food. As competition increases, they must swim further and further from the islands. In their absence many pups die.

The National Marine Fisheries Service keeps close watch over these islands. They are studying pup deaths, food habits and behavior.

For many years, Dr. Lee Alverson directed the study. He's found that marine mammals eat two to three times as much fish and shellfish in the Bering Sea as are harvested by commercial fishermen.

"On a global scale, there is ample evidence that the consumption of fish by marine mammals is five to ten-fold that taken by man," said Alverson.

Fishermen complain about what they see as unfair competition. They ask, can we afford to share so much with such an effective competitor? In a world with so much hunger, why not harvest what nature provides?

Fishermen claim that a policy of blanket marine mammal protection violates the intent of another congressional act, the Fishery Conservation and Management Act of 1976.

There seems to be a lot of agreement on this point. Biologists, managers and environmentalists all seem to be confused about Congressional intent.

FUR SEAL HARVEST

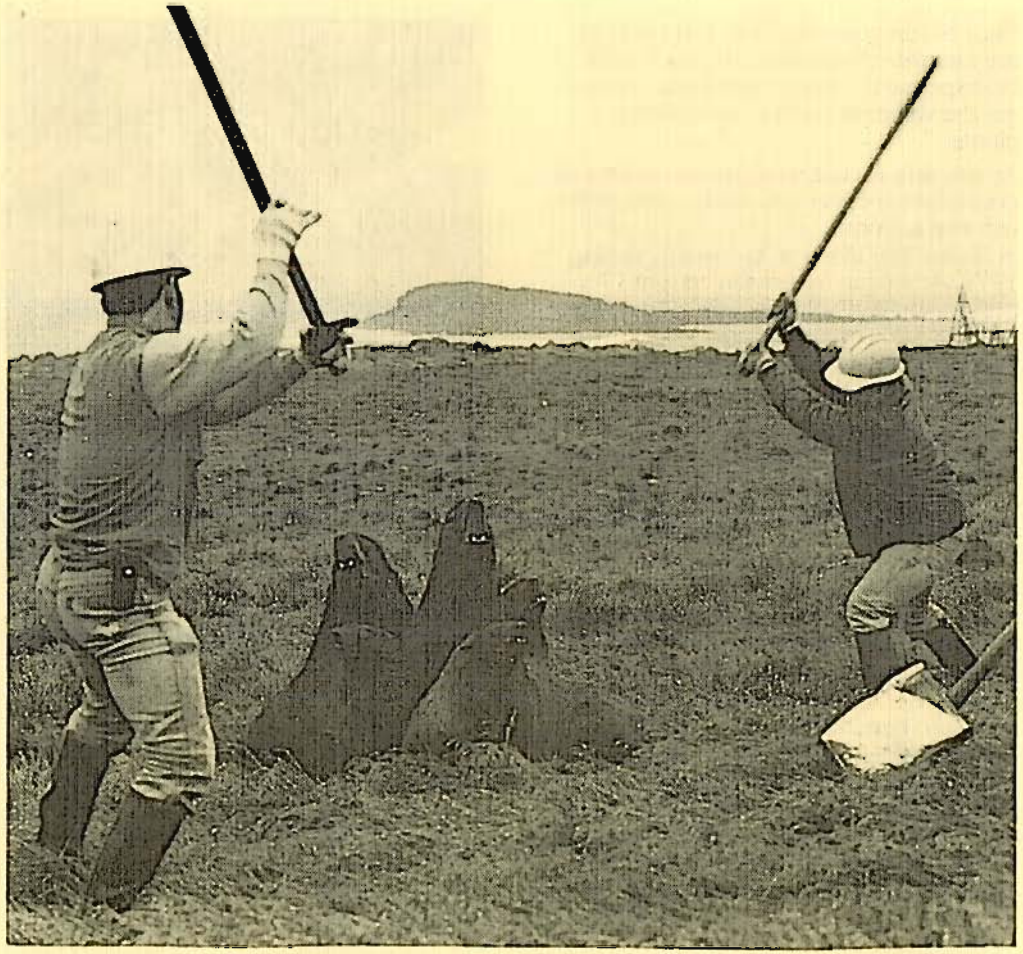
Fur seals are exempt from the Marine Mammal Protection Act, and are managed under the provisions of an international treaty. The treaty, signed by Japan, Russia, Canada and the United States, put an end to decades of uncontrolled killing of fur seals by many nations. Under the protection of the treaty, the fur seal population rebounded. The United States was given overall responsibility and uses a variety of management tools to keep the herd healthy.

Part of the fur seal management scheme involves harvesting some of the population. The Pribilof program is based on the biology of the fur seal. Only the strongest bulls hold a place on the rookery, attract females and breed.

The other males congregate around the fringe. Every year about 25,000 of these young bachelor males are herded together and killed, or "harvested."

The fur seal harvest is bloody and hard to look at. Many people don't want marine mammals harvested — not for fur coats, not for pet food and not in the name of good management.

Others say we harvest mammals all the time — we hunt deer, we slaughter livestock. The outdoor slaughterhouse on the Pribilofs, while it may be offensive to some, to others it is at least as humane as any other method we use to obtain meat and leather.



SUMMARY

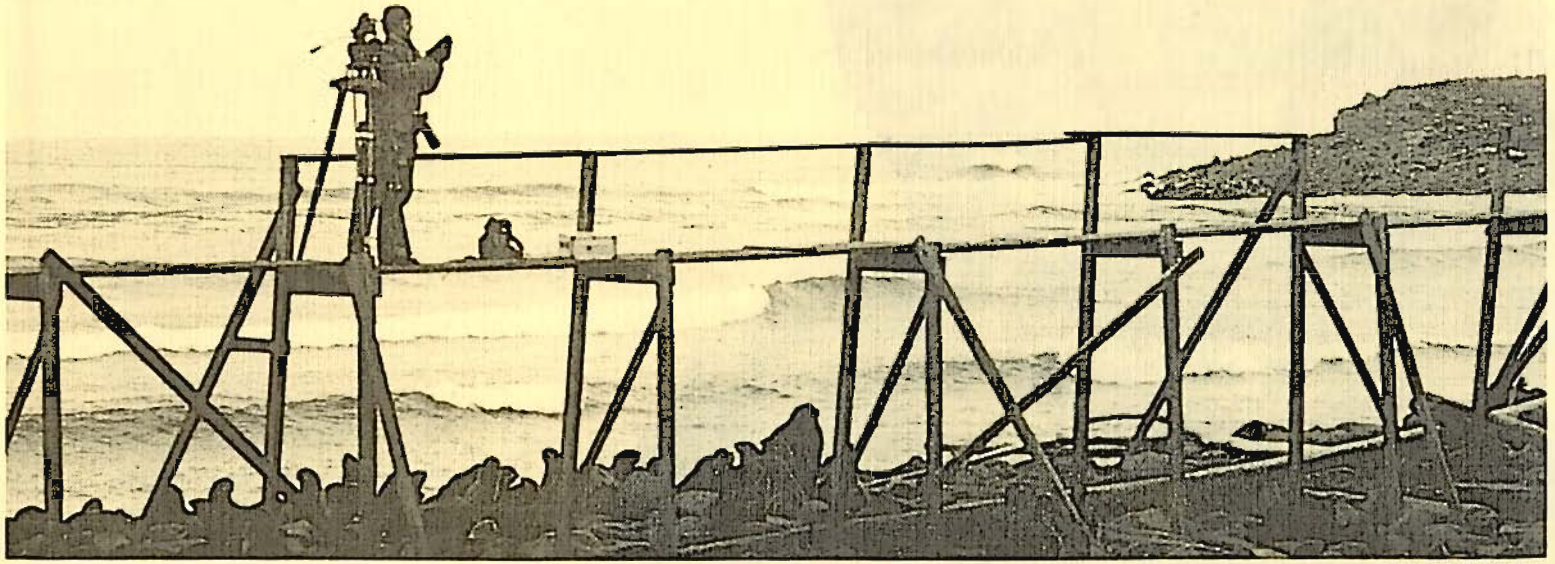
Much of the heat in this controversy is unjustified — the result of bad information or no information. For example, it's often said that seals are responsible for the decline in salmon harvests in the northwest. Research has shown that's just not true. Seals may have contributed in some small way, but the problem is more complicated than that.

There are other examples. Much of the public believes that all whales are endangered and seals are nearly extinct. They believe that the Marine Mammal Protection Act exists to protect whales from being harpooned and seals from being clubbed. These notions are simply not true. Most whale populations are doing quite well. The Marine Mammal Protection Act did little to regulate sealing or whaling.

One thing is sure, we need substantially more and better public information about marine mammals.

There are several pieces of legislation affecting marine mammals. They were written at different times, by different special interest groups, with very different objectives. These differences have led to bitter arguments and confusion over Congressional intent.

We need to untangle these conflicting acts. Perhaps it may be time for a comprehensive and deliberate national ocean policy — one that takes into account our need for fish, our need for marine mammals and the greater need for a healthy ocean.



photograph by Jim Hicks

Bill Puustinen
For 64 years, Bill Puustinen has fished for salmon on the Columbia River. He's seen good years, and bad. Recently he complains they've all been bad. He blames seals and sea lions for many of his problems.

Bill Puustinen, Gillnet fisherman

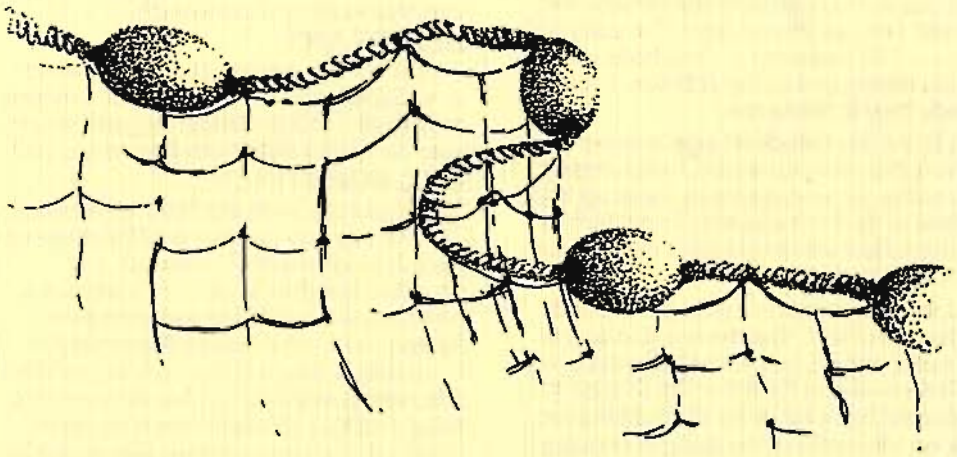
SEA GRANT
Fishermen all along the Coast object to the Marine Mammal Protection Act. Why? What is it about the Act that causes fishermen so much trouble?

BILL PUUSTINEN
Well, I can't speak for the trollers, trawlers and so forth, but the gillnetters disapprove of the Marine Mammal Protection Act for the simple reason that no provision has been made to solve the problem of the conflict between the fishermen and seals and sea lions.

Now, seals and sea lions are interesting animals and the non-fisheries public should have a chance to see them, study them, and know about them. But, under the Marine Mammal Protection Act, nothing has been done to accommodate the needs of fishermen.

We would suggest that something be done to keep the seals and sea lions away from fishermen. It's important that these seals and sea lions be protected somewhere along the coast. There ought to be some sanctuaries — selected sites along the Pacific Coast where they would be protected for all times from harrassing or shooting — where the tourists can stop in and see the seals and sea lions on the rocks in a sanctuary all their own.

I don't see why we can't organize it so that we have seals and sea lions for people to



see and study and enjoy. We've got to divide this environment that we live in with the other animals, too, and they've got to divide it with us — so it's neither one way or the other.

SEA GRANT
What sort of problems do gillnetters have with marine mammals?

BILL PUUSTINEN
I'll give you an example. . . . Four years ago, I laid the net out in the prairie drift above Tongue Point. I expected no trouble from seals or sea lions, but lo and behold, when I went to haul in the net, I had a big sea lion. That sea lion, according to the Marine Mammal Protection Act provisions, was not to be killed or molested. Well, the question then is how do you get rid of a big sea lion in the net without damaging him? How do you get it out so you can save the net and not go over Tongue Point eddy? The eddy is deep — 190 feet deep — and boils with a furious rolling boil in the ebb tide. I could already hear it below me.

Well, I tried my darndest to get around the sea lion, but every time I did, he'd jump up, grab some air, and go down. I was up in the bow of the boat and tried to get him to the stern. I knew that I couldn't get him out of the web myself.

I had the idea maybe I could get around this bunch of web that the sea lion was in and pull in the rest of my net from there to the buoy end and then tow the doggone sea lion to the beach where I could maybe work on him without the danger of going through that eddy.

As I got a bight of the net in my hand, and went to go around the cabin to the stern, I had my left hand on the rail of the cabin, hanging on tight with that heavy web down there below me and the sea lion down there in the depths somewhere, going every which way — my back was against the wall, toward the stern with the web in my hand.

Well, the sea lion came up and jumped over the bite of the web so that I was trapped in it and couldn't get loose.

SEA GRANT
So what happened?

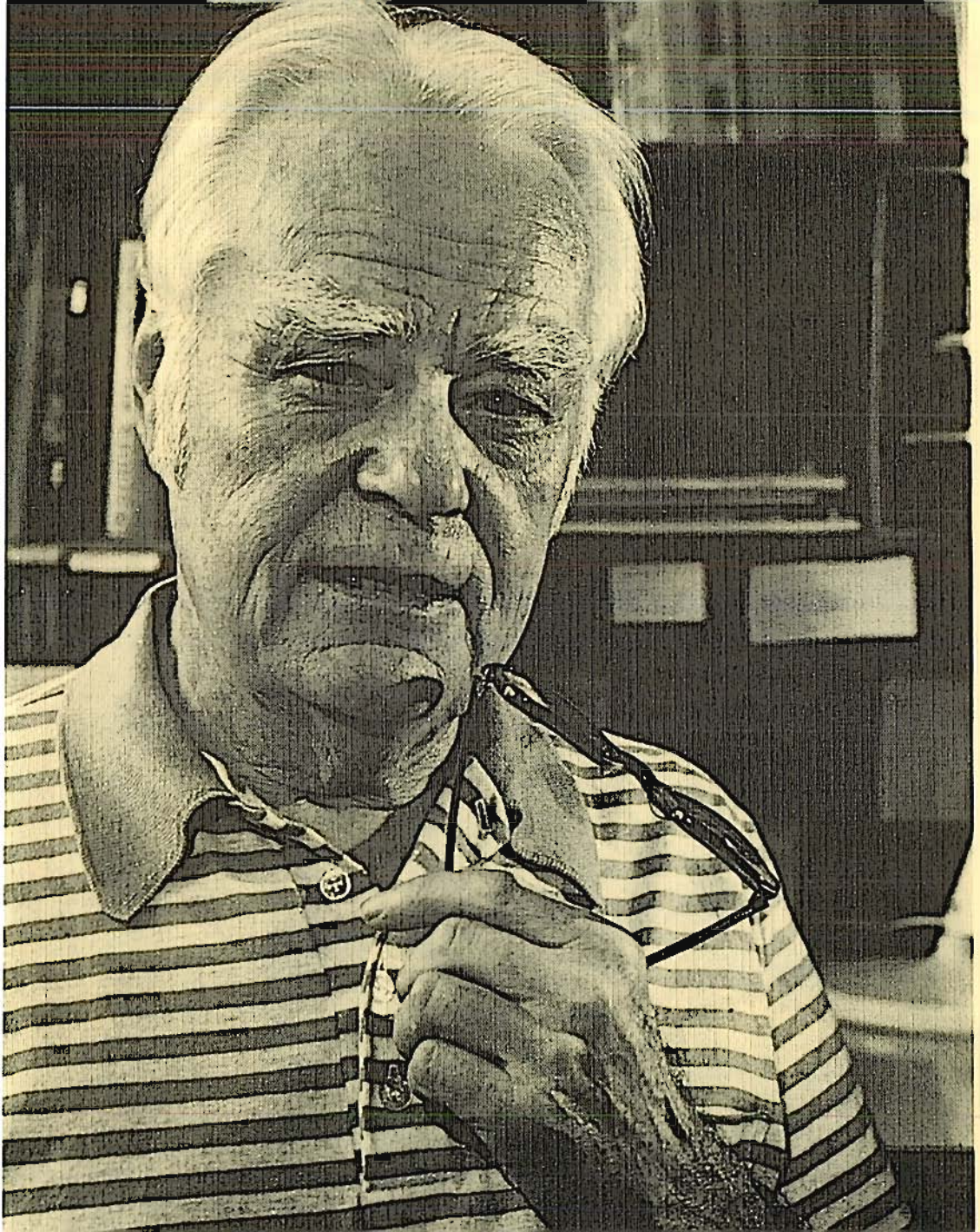
BILL PUUSTINEN
Eventually, I did get around and get that dam web to the stern and the sea lion towed up river.

Later, I wrote a letter to the director of the National Marine Fisheries Service and told him how I nearly lost my arm trying to save a sea lion. And I asked the question: Who is responsible for the medical bills for my shoulder; who is responsible for the damage to my net? And I wrote I'd like to know who would have been responsible had I actually fallen overboard into that eddy and drowned?

SEA GRANT
You know you could get a permit which would allow you to legally shoot a marine mammal that's endangering your life or your fish. Why didn't you have a permit?

BILL PUUSTINEN
Some people from the Marine Fisheries Service say you can buy a $10 license or permit to kill marine mammals in a situation like that. Well, the fisherman's point of view is this: He was over there fishing before the Marine Mammal Act restrictions. And a fisherman doesn't feel like paying any $10 just for the permit to kill a seal that shouldn't even be there.

That $10 fee doesn't in any way do a thing constructive toward the problems between seals, sea lions and the commercial fishery. It's just another way for the federal government to collect some money.

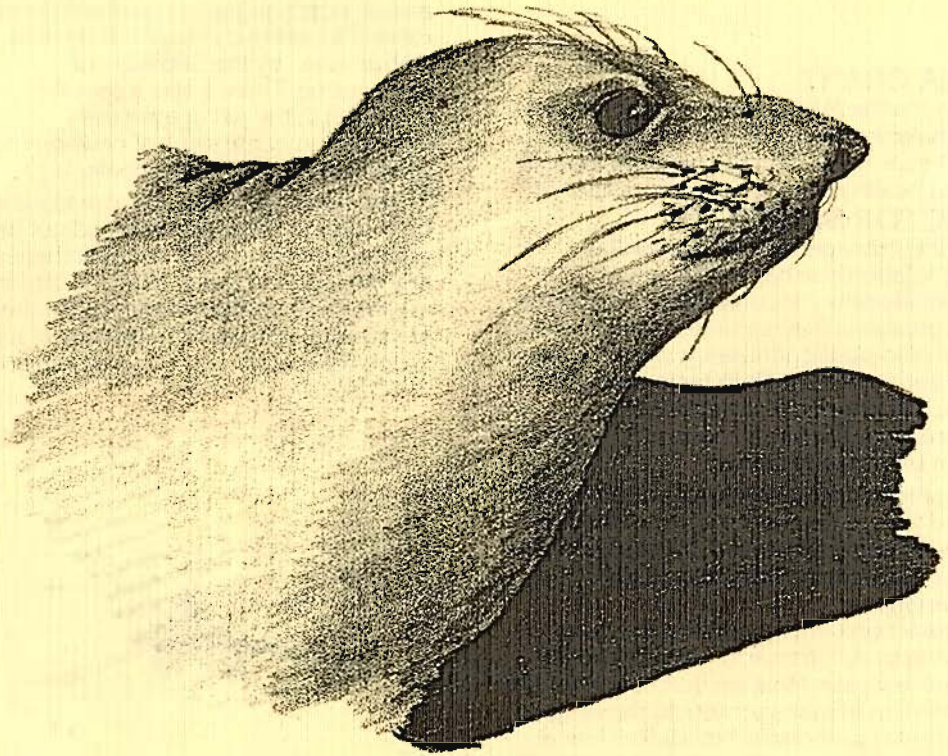


Victor Scheffer
Author of The Year of the Seal, *and* The Year of the Whale, *Dr. Scheffer is a zoologist. He spent much of his early professional life on the Pribiloff Islands in the middle of the Bering Sea studying fur seals. As a member of the Marine Mammal Commission, Scheffer influenced US policy for a number of years.*

SEA GRANT
During the first several years after the Marine Mammal Protection Act was passed, you chaired the Marine Mammal Commission. You were a part of those early days. What was the mood of the country at that time?

VICTOR SCHEFFER
The Marine Mammal Protection Act sprang out of the public's growing interest in wildlife, the earth and a reverence for all life. You might express these two ideas as reverence for life and respect for the environment. These concerns were memorialized with Earth Day in 1970. Part of the public's expression of these concerns resulted in the enactment of the Marine Mammal Protection Act in 1972.

The Act came about because people felt that various marine mammals were being abused. In the first place, it was widely recognized that the whale stocks of the world were going down the drain. Some species, such as the humpback, right, bowhead and blue whale were down to 10% of their original stock size. People were very upset about the killing of 300,000 porpoises a year in the tuna fishing industry. The fishermen deliberately set their nets around porpoises because porpoises indicate the presence of tuna.



SEA GRANT
The Marine Mammal Protection Act tries to balance the needs of man, the needs of sea mammals, and the need for a stable and healthy ocean. How does it do that?

VICTOR SCHEFFER
In the management of any wildlife population one has to take into consideration not only the biology of the populations that are under consideration but also public attitudes toward the uses of these animals. Both biological and socioeconomic factors have to be considered before a management plan can be properly drawn.

One looks at the stocks of populations and tries to determine whether they are becoming endangered, for example. One also looks at the human factor in management. And it's my personal conviction (and a point that I've been trying to emphasize in writings over the past few years) that we don't pay enough attention in management to people's attitudes with respect to wildlife. Nor do we listen to their opinions with respect to the uses that they want these animals put to.

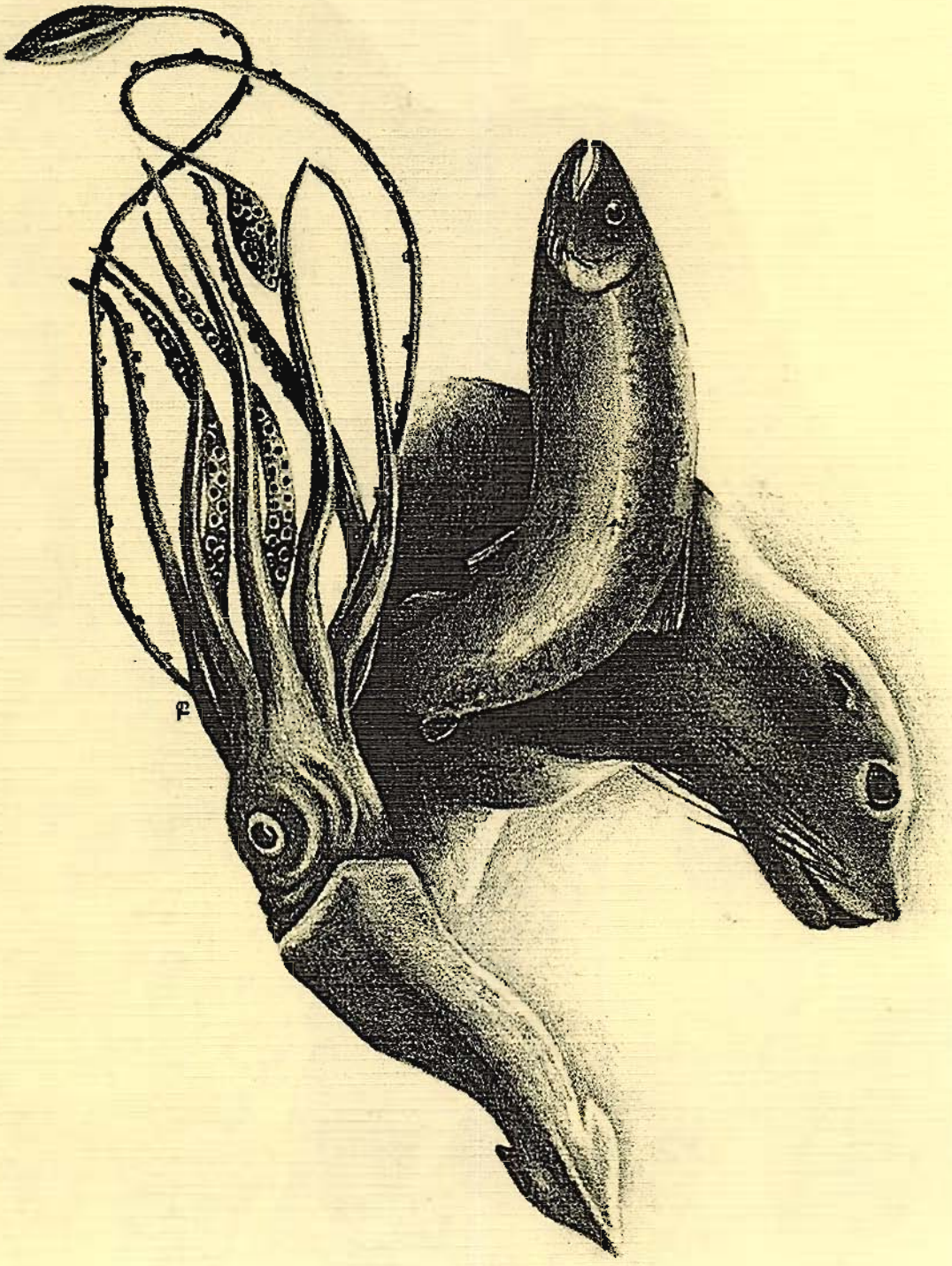
There's a sort of reflection of this human input, or societal input, in the structure of the Marine Mammal Protection Act — where not only biology is considered in the population levels and that sort of thing, but also the elements of humane taking or treatment of marine mammals. As far as I know, the Marine Mammal Protection Act is the only federal act dealing with humaneness in the taking of wildlife. There are undoubtedly some state laws, but I think this is the only Federal law.

The Act prescribes, for example, that seals and dolphins and other marine mammals cannot be taken by means defined as "inhumane" by the Secretary of Commerce. There's also a specific provision in the Act against the importation of the skins of newborn harp seals from the Canadian coast.

There are no good biological reasons why harp seal newborn pups should not be clubbed, or at least I don't think there are any biological reasons. The populations are in reasonably good shape. But there are strong humane considerations for not killing these pups and this is expressed in the Act.

It's often said that we should be no more concerned about killing newborn harp seals for skins to provide a luxury market than we should be concerned about killing pigs for bacon. This is a philosophy that I firmly disagree with, because I think that sentiment has a place in wildlife management decisions.

Some of my fellow biologists insist that only so-called rational or scientific reasons should be considered in making management decisions for wildlife. I can't agree because, after all, we're human beings and we must, (and we still) continue to feed our personal feelings — our sentiments — into the management decisions we make. Of course, biology has to come first. There has to be a firm biological understanding of population trends before we can do anything about management.



Dr. Dayton L. Alverson
Past Director,
Northwest and Alaska Fisheries Center

SEA GRANT
Dr. Alverson, the Northwest and Alaska Fisheries Center is responsible for a good deal of the biological research which is being done on both marine mammals and fish stocks. But you're also in a unique position to evaluate the relationships of the two groups. Would you describe the kinds of research the Center gets involved in — especially in Alaska?

DAYTON ALVERSON
Well, we have a very large survey program in the Bering Sea to monitor the stocks of fish and shellfish. We are sampling abundance, age, size and condition of fish populations. That program is supplemented by a program that we call our observer program. We have observers onboard 20 percent of all foreign fishing vessels operating in that area. Those observers take size, abundance and distribution data on the resource. They also record conflicts with marine mammals, numbers of marine mammals, and so forth.

A third set of information comes from the foreign and domestic catch statistics which are required to be reported to us every ten days. So between the surveys, the observer program and the statistical information that is provided to us by the foreign fishermen, we maintain a fairly close watch on the trends — the important commercially-harvested resources of the area.

The ecosystem is looked at in a broader way, too. We look at the abundance of not only the commercially exploited species, but the non-commercially important species that might be very important as a food base.

SEA GRANT
You're also looking at marine mammals in the Bering Sea, aren't you?

DAYTON ALVERSON
We have here at the Center an ecosystem model which looks at the food and energy demands of various animals. It starts out with marine mammals, and it asks: How much energy does it require to keep them alive? It says: This is the minimum amount of food that has to be in the ecosystem to sustain marine mammals, birds, etc. This is the minimum amount of plankton, zooplankton and fish that has to be in the system. And then it goes down each level below and asks the same question, building the pyramid from the top down.

Science is trying to get a better fix on how they interact with birds, how they interact with man.

SEA GRANT
What does your model tell you about the interactions between marine mammals and fish stocks in the Bering Sea?

DAYTON ALVERSON
Our studies demonstrate several factors. First, there are very large populations of marine mammals dominated by the fur seal, but also sea lions, whales, otters, walrus and many others. Second, there are large populations of fishes, one of the largest fisheries in the world — populations of pollock, herring, crabs. One finds that marine mammals are major competitors with fishermen. Marine mammals are taking two to three times the amount of fish and shellfish out of the Bering Sea than are harvested by commercial fishermen.

On a global scale, there is probably ample evidence that the consumption of fish and shellfish by marine mammals is five to tenfold that taken by man. Man now takes somewhere around 60 million metric tons of fish and shellfish annually out of the oceans. In the Antarctic alone, the crab-eater seals, whales and various other marine mammals take about 250 million tons of the shellfish, krill, a year.

SEA GRANT
I imagine that this competition causes some serious problems along the coast and among fishermen.

DAYTON ALVERSON
Well, there are, I think, several real controversial issues that are evolving between marine mammals and fish. Now, of course, the fishermen perceive marine

mammals as a predator on the fish that they want to harvest. Marine mammals also damage their gear. Environmentalists would like to protect marine mammals. They'd like not to have them killed, harassed or harmed in any way. This puts them in conflict with fishermen.

There is only so much that can be harvested from a resource — only so much to share between fishermen and marine mammals.

SEA GRANT
Isn't there a way of developing a management scheme that would take into account these different needs — strike a balance between our need for fish, our need for marine mammals, marine mammals' need for fish, and the overriding need for a stable and healthy ocean?

DAYTON ALVERSON
Ecosystem management is a term that has come into vogue in the last five to ten years. It implies that one should take into consideration not only the species that is a direct target of fisheries, but should understand the consequences of that act on the remainder of the ecosystem. I don't think that we are in a position to carry out ecosystem management at the present time with any great degree of precision, but we're working on it.

SEA GRANT
Can man be programmed into a management scheme? Can fishermen continue to take large numbers of fish without adversely affecting the environment?

DAYTON ALVERSON
That's a tough question. There are some very divergent points of view. Some ecologists say that there is no surplus of available fish and shellfish. They say that the system uses all its parts. I think that's true.

But man will continue to catch fish and his intervention in the system will cause some effects on other predators. I object to excluding man from the ecosystem. We're here, we're a part of it. We have certain food demands and needs. As we intervene and catch seafoods, we will bring about a redistribution. We will become a predator, and some other predator will likely get less.

The stock will change in some way or other. I think to say there is no surplus is to say that the animals will not share in the same way that they have in the past, if man intervenes in the system.

SEA GRANT

I think that a lot of Americans think that the Marine Mammal Protection Act puts a protective blanket over sea mammals and stops all harvests or killing. Is that an accurate perception?

DAYTON ALVERSON

No. The Marine Mammal Protection Act does not say that marine mammals cannot be harvested. But, I think the general attitude of the American public, and perhaps a good share of the western world's population at the present time, is one of concern for marine mammals. They place marine mammals in a rather special place in the animal kingdom. And that sort of emotional attachment, is going to make it much more difficult to manage marine mammals or to control them at reasonable levels.

It is going to be much more difficult politically to intervene in the system and manage marine mammals than it will be to manage fishermen.

SEA GRANT

So the Act does allow managers to step in and control marine mammal populations at some level?

DAYTON ALVERSON

Yes it does. It instructs managers to maintain optimum marine mammal populations and to maintain the health and stability of the environment. A healthy and stable population and healthy ecosystem, to many people, means that the populations are all at maximum — at the carrying capacity of the ecosystem.

I think that is not a very good perception of an ecosystem. Quite frequently in nature when populations get near maximum they are highly diseased. A number of animals often die from malnutrition, inadequate food, and so forth. That is how the population is stabilized. I'd rather look at the population from a clinical approach, where one perceives the animals are healthy. They are capable of reproduction. They have the capacity to grow and are vigorous. That may be a level that is substantially below the carrying capacity of the environment.

SEA GRANT

Do you see any conflicts between the Fisheries Conservation Management Act and the Marine Mammal Protection Act?

DAYTON ALVERSON

Well, the FCMA and the Marine Mammal Protection Act were drafted, really, by different people at different times. They had different interests. And, you'll find, if you examine them carefully, that they have different definitions, different general objectives and, perhaps, different goals. They may not be contradicting, but certainly aren't compatible

"Optimum" is used throughout the Acts, and is used in the literature. And, I'm afraid the concept of optimum in the FCMA and in the MMPA are different. They were incorporated into the Act to give the manager more flexibility in taking into account social, economic and political factors — factors that weren't considered in the early management strategies.

The problem is they are not very carefully defined operationally and it is left to each of the two groups that are interpreting the Acts to make their own judgments. Even within the FCMA, it is not at all clear what Congress had in mind. We may need some serious rewriting of the Acts or an all-inclusive omnibus act.

photograph courtesy of the Alaska Department of Fish and Game

John J. Burns
Alaskan Eskimos and Aleuts depend upon marine mammals for food, clothing and social stability. As Marine Mammals Coordinator for the Alaska Department of Fish and Game, John Burns tries to balance the need for marine mammal protection with the need to use all resources wisely.

John J. Burns, Marine Mammals Coordinator, Alaska Department of Fish and Game

SEA GRANT
Alaska, perhaps more than any other of these United States relies directly upon the harvest of its natural wildlife and fishery resources. Indian, Eskimo and Aleut populations live in very remote villages. They are scattered across some incredibly wild and vast land. But in addition to the Native Americans, it seems that a large proportion of Alaskans also make their living from the land.

From your perspective, as a wildlife manager and biologist in such a state, do you see things differently than those of us from the lower 49?

JOHN BURNS
I think it's easier for us in Alaska to see the direct relationship between the products of the land and the survival of men. And I think that this country often takes an unrealistic view of our natural environment.

Historically, we have had all the land we need . . . all the oil, timber and products of the land we could desire. You must not fail to recognize that there are basic human needs for food, shelter and clothing. And these things come from the land, from the forests, the soil and the sea. They come from the ability of the earth to produce them. We need the food. We need the renewable and nonrenewable resources. We need the space to live in.

SEA GRANT
What do you see in the future?

JOHN BURNS
Our society is growing; our needs are growing. The needs of others outside Alaska are growing. The closer we get to needing all of the production capability of the earth, the heavier will be man's hand on the balance of nature.

SEA GRANT
Some prominent individuals and some organizations say that Alaska has a frontier mentality — a resource exploitation philosophy.

JOHN BURNS
The hard reality is that there is no way that we can live out our lives without affecting the natural environment adversely. Whether we like it or not, the hand of man is very heavy on the balance of nature.

SEA GRANT
Okay. Assume for the moment that I agree that it's inevitable we affect the balance of nature. What do you propose that we do about it?

JOHN BURNS
If we are going to substantially affect that balance, and it's inevitable that we will, we ought to use what knowledge we have to minimize man's impact. We ought to use the years of research that we've done to see that we don't adversely affect things — more than we absolutely have to.

SEA GRANT
Are you saying we should manage the environment and it's animals?

JOHN BURNS
Well, yes. But to the protectionist, the very word management is bad. They say man has no right to manage natural resources. Well, I believe that if you don't manage those resources, if you don't keep them in some semblance of order, then too many of them are going to get lost.

It is also important to set aside and maintain some wild and "undangered" environments — if only as a basis for measuring the results of man's activities.

SEA GRANT
The Marine Mammal Protection Act was designed as a management piece of legislation, wasn't it?

JOHN BURNS
With respect to marine mammals, we are in a situation where there is little coherent policy. There's very little management from either the state or national level, so you have a situation where there is little coherent policy. There's very little management from either the state or on the national level. So you have a situation where locals manage those populations.

The effective management of a resource like marine mammals requires acceptance by the public of your management objectives.

SEA GRANT
But the Act specifically called for a management scheme which would maintain the health and stability of the

photograph courtesy of the Alaska Department of Fish and Game

environment. It established a procedure for states to follow to apply for authority to manage these marine mammals.

JOHN BURNS

The Act was truly conceived in idealism. The wording is very flexible and broad. It is the basis upon which much more stringent regulations are imposed. Bureaucrats, who are accountable to neither the executive or legislative branches of government, make the rules and regulations. It's their rules and regulations that stop a state from developing a management plan. These rules and regulations, in my opinion, deviate from the intent of the Act, and have not allowed Alaska, or any other state, to carry out the intent of the Act.

I think the Act could be very workable. But it has some basic flaws. Some of the wording is too broad and general. I believe that some sections are almost indefinable. It leaves so much latitude for interpretation that the most effective lobby or pressure group prevails.

SEA GRANT

How has the Act failed?

JOHN BURNS

The Marine Mammal Protection Act was supposed to get us away from single species management. It was supposed to take into consideration the health and stability of the ecosystem. In fact, it has pushed us firmly toward single species management.

We are forced, for example, to manage salmon, but cannot manage a major consumer of salmon — seals.

There's a very big difference between what the Act should be and what it is. It could be a very enlightened piece of legislation. It is a shambles. The Act is so vague . . . it could be anything you want it to be. Considering who the federal agencies respond to, you will find that the management of marine mammals that is

being done results from legal rather than biological considerations.

SEA GRANT
What do you mean by single species management, and why is it bad?

JOHN BURNS
You have to realize that we are dealing with marine systems that have many components. And these components interact. Marine mammals feed on fish. These fish are also caught by man. Man adversely affects marine mammals by catching fish. Marine mammals damage gear. Marine mammals get caught and drown in fishermen's gear.

If you decide to harvest fish that marine mammals eat, or even if you harvest fish in the same areas that marine mammals frequent, there is going to be an effect on marine mammals. You are either going to compete for available food, or you are going to cause marine mammals to desert favorable habitats.

SEA GRANT
I've heard it said that the Marine Mammal Protection Act and the FCMA are at odds with each other — use of natural resources seems to be the goal of the FCMA, while protection of marine mammals is the goal of the Marine Mammal Protection Act. Are these Acts compatible? Can you have both maximum fish harvest and maximum numbers of marine mammals?

JOHN BURNS
Marine mammals are at the top of the natural system. They are predators. Some eat fish — lots of fish. It takes a lot of fish to support one marine mammal. If you have a federal policy to try to catch as many fish as possible, you have a problem. You can't have both maximum numbers of marine mammals and maximum numbers of harvestable fish simultaneously.

If you make the decision in the Bering Sea to have one and one-half million fur seals, you aren't going to have an expanding pollock fishery. If you make the decision to have a million fur seals, then you will be able to harvest pollock on a continuing basis.

Present interpretation of the Marine Mammal Protection Act has made that sort of choice impossible.

SEA GRANT
Well, if the Marine Mammal Protection Act provides for a way for states to regain management authority over marine mammals and to begin actively managing these populations, why hasn't Alaska begun such a management program?

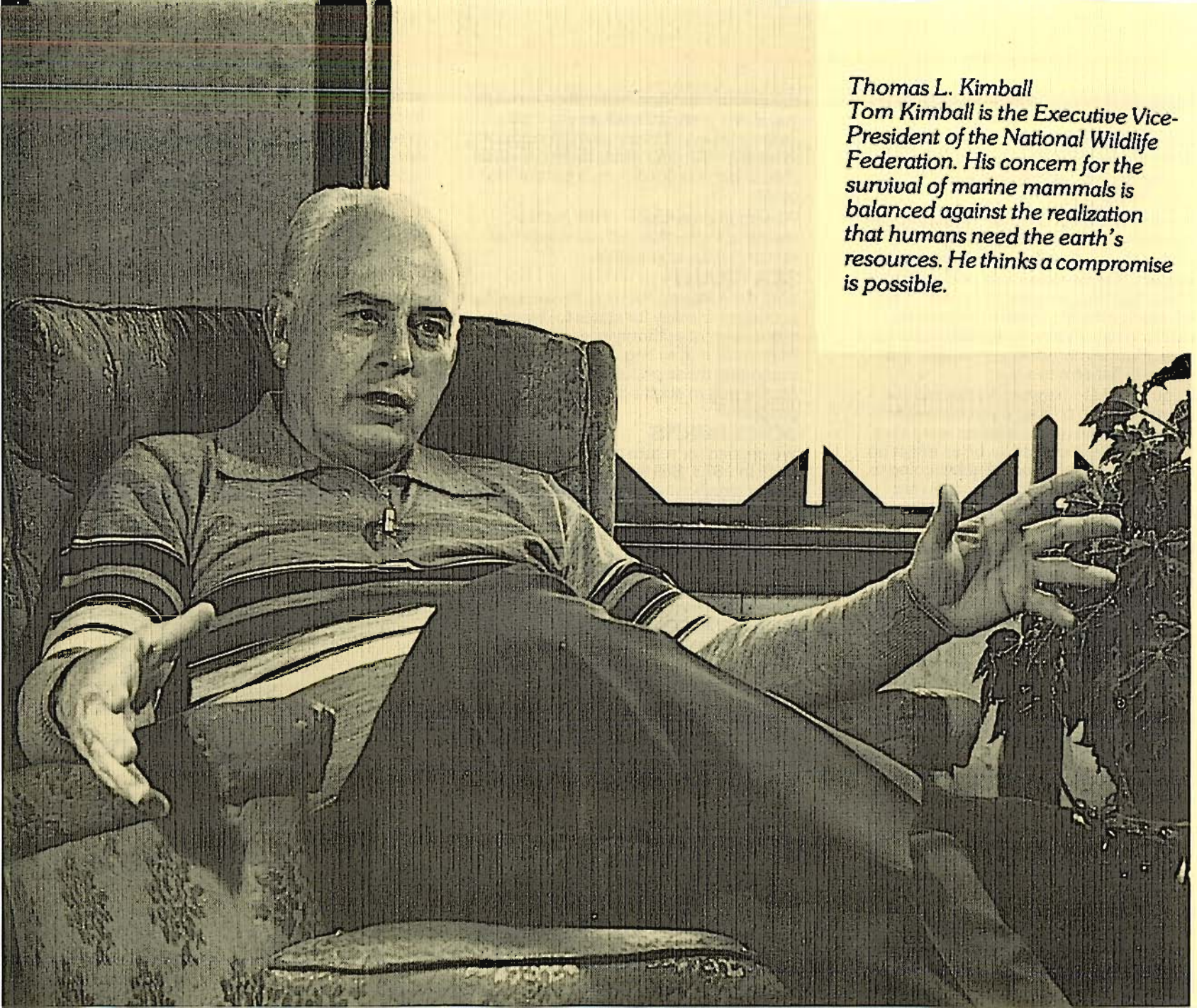
JOHN BURNS
We applied for return of management back in 1973. Still we've gotten nowhere and at significant variance with ecological principles of ecosystem management.

The agencies have published guidelines, but we find them to be troublesome. Some of the different sections are not compatible. The regulations don't follow the Act closely.

SEA GRANT
Okay. So we've come nearly a decade since the Act was passed, and we seem to be in a stalemate. Alaska is the only state to have tried to get management authority. The other states seem to be following a "wait and see" policy. Alaska seems further from succeeding than ever. How can we move forward? What needs to be done?

JOHN BURNS
We most desperately need two things — accountability of federal agencies, and changes in the interpretation of the Act. I believe the Act is broad enough to arrive at reasonable interpretations. The Marine Mammal Protection Act must be made to conform with the other marine resource acts with which it is or is presently interpreted to be in direct conflict.

In summary, we must develop interrelated and understandable legislation which indeed offers protection and vigor to marine mammals and also provides for the regulated use of marine resources, including fish, and, in some regions, mammals.



Thomas L. Kimball
Tom Kimball is the Executive Vice-President of the National Wildlife Federation. His concern for the survival of marine mammals is balanced against the realization that humans need the earth's resources. He thinks a compromise is possible.

Thomas L. Kimball, Executive Vice President, National Wildlife Federation

SEA GRANT
Mr. Kimball, the National Wildlife Federation has looked into the Pribilof fur seal harvest quite extensively. What have you found?

THOMAS KIMBALL
The Pribilof seals are, in my view, managed properly now through the international convention. When the islands were first discovered by the Russians, they brought in some Aleuts to harvest the seals and they overdid it. When the United States purchased the islands, the Russians and Aleuts pulled out of sealing. A lot of sealing was then done on the high seas. And then it was really overdone. The other nations demolished the populations of fur seals through harvesting them on the open seas. It became obvious to everyone that the proper way to do it was to enter into a convention to limit the take. The convention put an end to pelagic sealing. According to the new management scheme, only two to five-year-old bachelor males are taken — the surplus that's not needed for breeding. This on-land controllable harvest has worked well for many, many years.

I understand that the treaty is now up for renewal. In my view, it should be renewed because it's one of the few examples we have of proper management. Marine mammals are really no different than any other species in the fish and wildlife realm. They should be managed, and where they can be properly utilized wisely without diminishing the brood stocks, in my view they should be utilized.

SEA GRANT
I think that a lot of the environmentalists would disagree with you. They might say we should leave the marine mammals alone, and as much as possible, leave the whole ecosystem alone and intervene as little as possible.

THOMAS KIMBALL
There are two schools of thought operating currently in the field of wildlife biology. One is that natural systems should be left to operate without man's interference and without his manipulation — a natural ecosystem operation type.

The other school of thought is that if man is to utilize renewable natural resources, particularly the wildlife resource, he has to first obtain knowledge about how those ecosystems work — the interrelationships of the various species of wildlife within those systems. With that knowledge, he can then manage, or manipulate in a way that does not do a disservice to any of the species, but manages those that can best be utilized for man's own welfare.

To say that we can take man out of any natural equation is ridiculous. Man does affect the environment tremendously. By that, I mean the whole ecosystem. Our only hope is to use man's knowledge to conserve those habitats and species.

Man's knowledge of the natural system can also produce benefits to himself. That effort has been going on since the advent of man. Man began as a hunter before he became a gatherer and his knowledge of the natural systems permitted him to exist. There has been no change in that formula even today. We must have knowledge of those natural systems to work with nature — to understand her systems to the degree that we can protect the values that are there — and at the same time produce a useful product for man.

SEA GRANT
Is information the key to such a management scheme?

THOMAS KIMBALL
The greatest threat to proper wildlife management is lack of information.

The failure to manage natural resources properly results in the public being shortchanged, as well as the resource. The resource, if not properly managed, could lose. We could add to the list of endangered species or to the list of threatened species by our lack of knowledge and interest in management.

On the other hand, we could also lose the potential benefits to man. Nature can produce a bounty — a surplus. Species that are economically viable — that an

individual can use for food or for sport, or for both — can produce a surplus.

Such a surplus can be obtained by proper management. And so if we don't manage . . . if we don't have the scientists and their knowledge . . . and we don't apply that knowledge . . . then everybody loses. The wildlife resource loses and man loses.

The principle of wildlife management originally was to produce surpluses of the species of wildlife that could provide benefits to man. To date, there has been considerable effort expended toward producing surpluses of those species. You have to have the authority, and indeed, the support of policymakers in order to manipulate those systems.

My personal view is that it's entirely proper to use wildlife resources as other renewable resources are used for the benefit of man. A fisheries product is not different than a wood product from our renewable forests. It's no different than our forage resource that produces our livestock and our terrestrial wildlife. They utilize the forage . . . if we manage those ranges properly, we'll have more forage next year and we'll have the production of more meat for the use and benefit of man.

Management of the oceans, and the marine resources, should be looked upon similarily — that we manage predator and prey, and we manage habitat in a way that still maintains variety of numbers. We don't endanger any species, or threaten them with extinction. But within the limits of management, we manage them to produce a surplus of those species that can best be utilized by man. And the more desirable the species, the more intense the management should become.

SEA GRANT

What is your view of the Marine Mammal Protection Act? Was it a good management tool? Has it worked?

THOMAS KIMBALL

The Marine Mammal Protection Act produced a mixed bag of results. It had some very fine benefits. The incidental take of porpoise by the tuna fleet has dropped dramatically, largely as a consequence of the provisions of the Marine Mammal Protection Act.

On the other hand, I really think that the emphasis of the Act, at least, ought to be changed. It's now a protectionist law and it ought to really be called a marine mammal management act.

Perhaps the name should be changed to the Marine Mammal Management Act, with the direction from Congress to allow a professional manager to utilize all of his skills in both the protection and use of an individual species. Certainly they need to be protected where the animals are threatened or in danger. But where there's a surplus, or when they may even be threatening other species, important economic species of wildlife that are used by man, the scientist should have not only the authority, but the direction, to manage.

The Marine Mammal Protection Act should, in my view, be amended to provide a specific program for better cooperation between states and the Federal government. The Act pre-empted state authority and responsibility in marine mammals. And that has not worked well. In many instances the states have been unwilling to assume the responsibility for marine mammals even though that's permitted under the Act.

There are a couple of reasons for this. The first is that marine mammals are predators of fish and responsibility for their protection puts them at odds with fishermen, both sport and commercial, who see control of the predator of fish as an important management responsibility. So some of the states have been perfectly willing . . . to allow the Federal government to continue with this responsibility.

Alaska has tried to work within the system on a cooperative basis. In these instances, the states can assume responsibility for marine mammals if the Federal government wants to give it back, providing they produce an acceptable management scheme.

The Federal government in assuming and pre-empting the states, should be willing to provide funds for research and funds for management.

SEA GRANT

Some state wildlife managers with whom we've spoken believe that the job of writing an acceptable management scheme for marine mammals has been complicated by lack of consistency at the Federal level. Do you see any inconsistencies between the Fisheries Conservation and Management Act and the Marine Mammal Protection Act?

THOMAS KIMBALL

The Marine Mammal Protection Act is primarily designed for protection. The principle thrust of the Fisheries Management and Conservation Act is wise use. In both cases, I think, the implication is that they want proper management of the species.

But to the extent that one is directed primarily to protection, the other one directed toward wise use, makes them incompatible. And, in my view, management per se includes both protection and wise use. And those laws should be changed to whatever degree is necessary so that remains the principal objective. We want to protect animals when they need protection, but when we can wisely use the surplus I believe that's

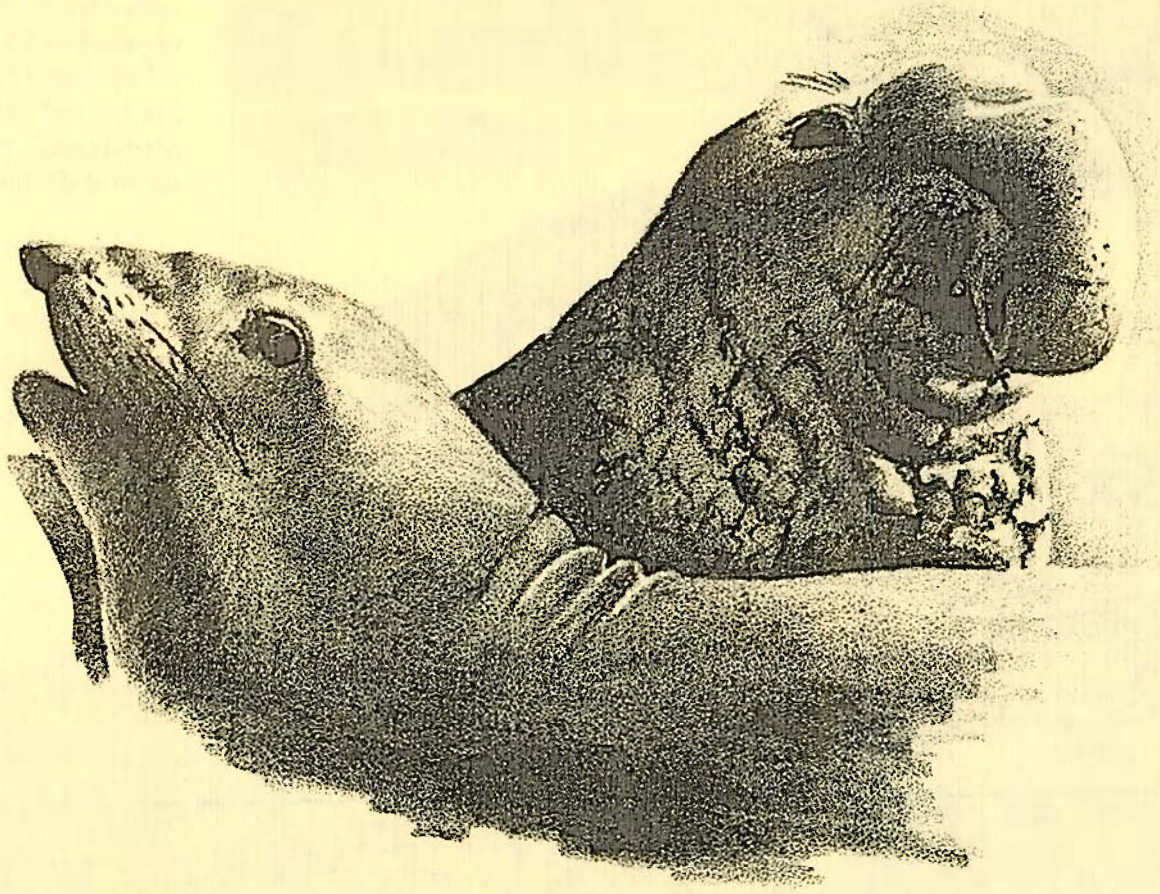
in the overall public interest to do so.

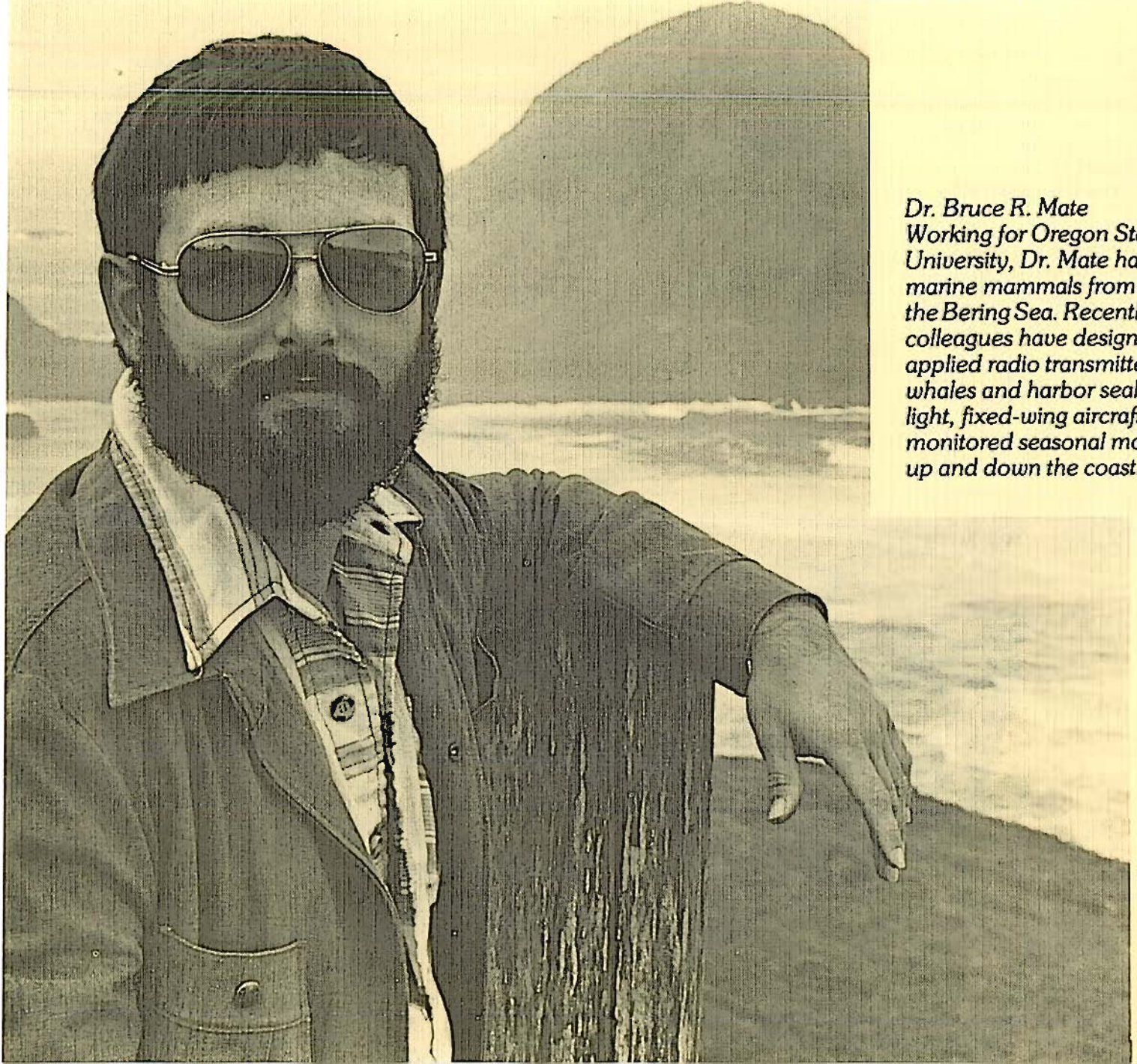
SEA GRANT

What in your view needs to be done to make these Acts compatible?

THOMAS KIMBALL

It's really a basic question of priorities. I really think the important thing is that Congress resolve this question: Is our national policy going to be one of wise use or one of total protection. Until they resolve that issue, managers are going to have headaches, and lawyers are going to be kept very busy.





Dr. Bruce R. Mate
Working for Oregon State University, Dr. Mate has studied marine mammals from Mexico to the Bering Sea. Recently he and his colleagues have designed and applied radio transmitters to gray whales and harbor seals. Using light, fixed-wing aircraft, they have monitored seasonal movements up and down the coast.

Dr. Bruce Mate, Assistant Professor of Oceanography Oregon State University

SEA GRANT
Dr. Mate, you have spent a good share of your professional life studying whales, seals and sea lions of the eastern Pacific; what is the general state of knowledge? How much do we know about marine mammals?

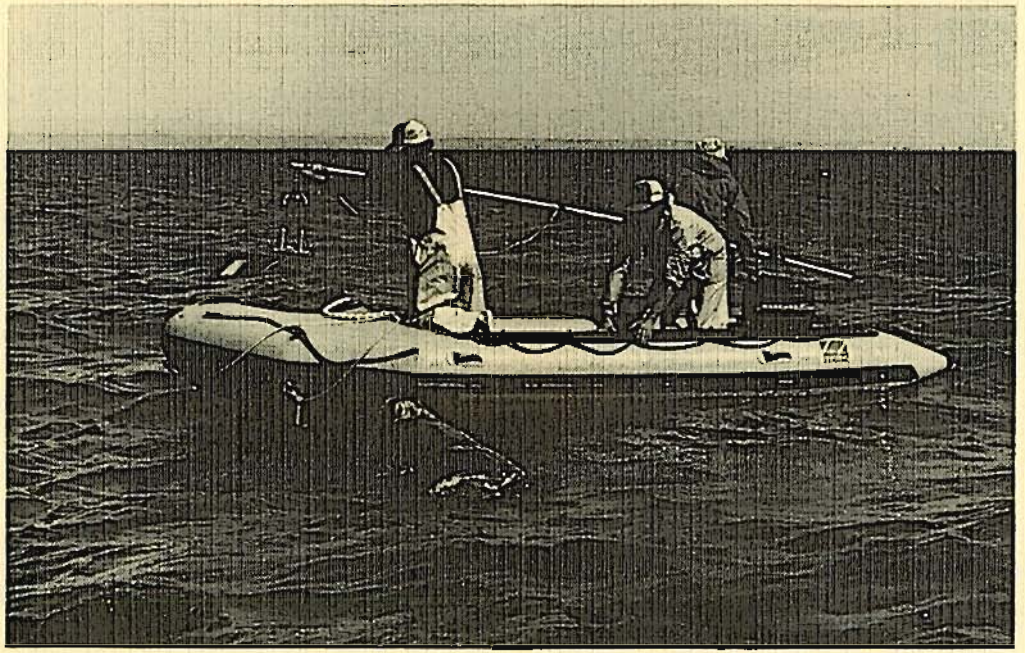
BRUCE MATE
Marine mammal research is about a century behind the research that's been done on land animals. Because these animals spend most of their lives at sea, it's unlikely that, in the near future, we will catch up. Marine mammalogists are still at a very basic descriptive, or natural history phase with their work.

SEA GRANT
There's a lot of concern on this coast that marine mammals eat too much fish. Some folks believe seals and sea lions are responsible for the decline of salmon runs here in the Pacific Northwest. What does your research work tell you about marine mammal feeding habits?

BRUCE MATE
We know very little about the feeding habits of seals and sea lions. We know more about the near-shore feeding habits. In fact, we really don't know where that animal's been recently when we look at what it has in its stomach. And so, it's quite difficult to make interpretations about where and when they're feeding. There are some crude estimates of the amount of salmon that seals and sea lions eat, but these are old. There hasn't been a consistency within this research. Still, there's no doubt that in certain areas, they concentrate in places where fish are abundant.

We've found that seals and sea lions eat both salmon and lamprey. Lampreys are predators of salmon from our data, so the problem for us is to determine if marine mammals are damaging the salmon run, or if they are actually improving it by eating the predatory lamprey; it is not an easy question.

There's absolutely no doubt that under certain specific conditions, especially in



restricted geographic areas, seals and sea lions can consume salmon even as a significant part of their diet. But as far as we know to date, this is a relatively small proportion of the overall population.

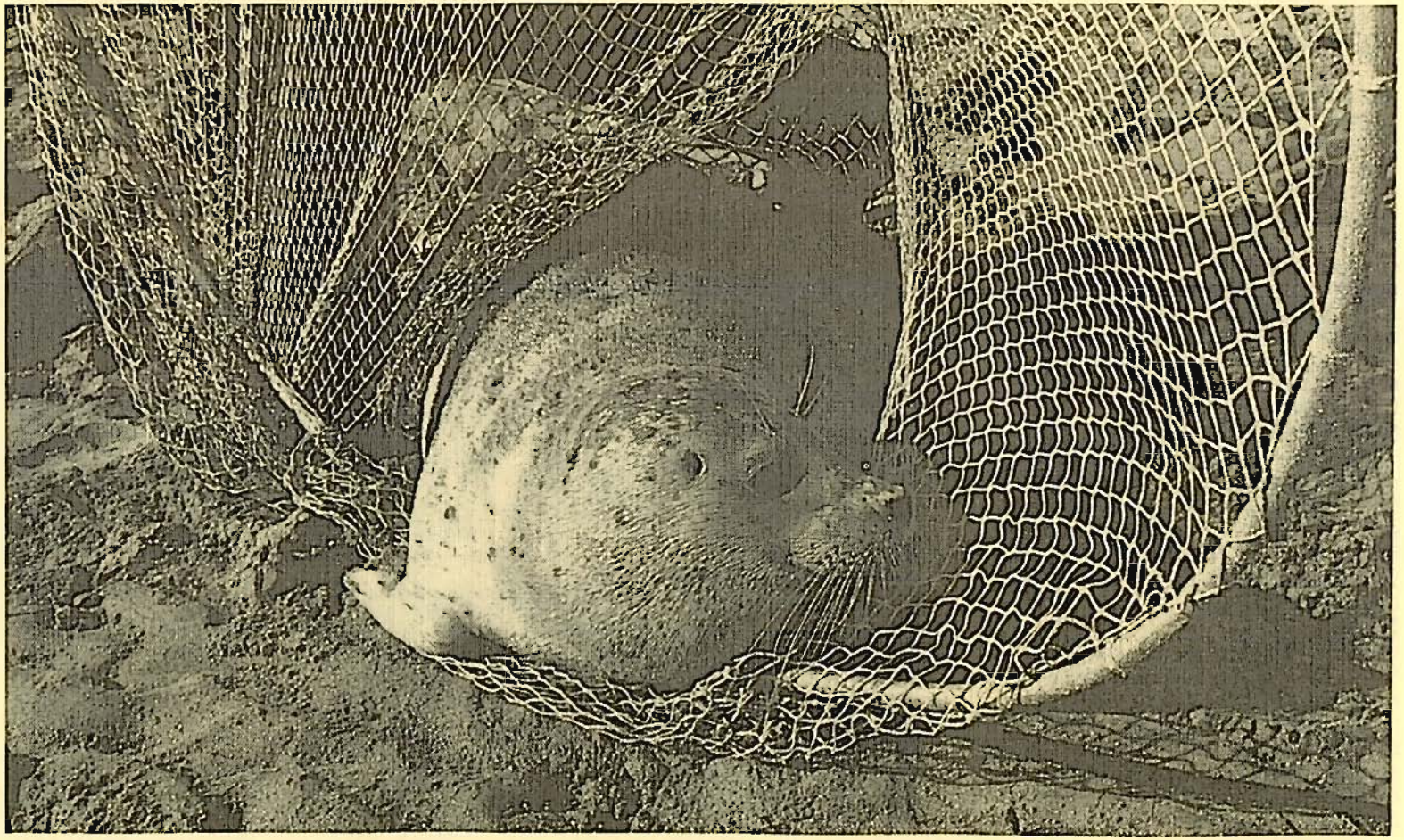
SEA GRANT

Some protectionists believe that man should not interfere with the balance of the oceans. They say we should leave marine mammals alone . . . .

BRUCE MATE

It's very important that everyone realize that every living animal is a predator. There will be things that are eaten and things that eat them. Natural predation is occurring. There will be natural changes. Man is a predator — one who is drastically changing the ecosystems of which he is a part.

Man is such an influencing factor on the environment. It's impossible now to have a totally "hands off" approach on some portion of the ecosystem and expect to coordinate the management of the other portions of it. Conservationists, ecologists and managers ought to be working toward the same goal . . . in my opinion. They should all be striving for a balance in our efforts to harvest marine resources and in the relative abundance of predators and prey.



Conservation has become a trend of this decade. It's a very good trend, especially when you look at our over-utilization and our disruption of ecosystems. Its been very successful both politically and socially. This trend has raised general public awareness of these questions and helped to make solutions happen.

SEA GRANT

Man's needs for resources from the sea is likely to increase during the next few decades. How will we balance our needs with the needs of marine mammals?

BRUCE MATE

It would be irresponsible for us to assume that we can harvest the food of marine mammals to a greater and greater degree without considering what would happen to the marine mammal populations that depend upon them. If we do ignore these, they're going to ultimately come back and haunt us.

SEA GRANT

How has the Marine Mammal Protection Act affected your research work?

BRUCE MATE

When the Marine Mammal Protection Act was passed, there was a feeling that we knew much more than we do. As a result of the Marine Mammal Protection Act, we found places where we need a lot more information to apply management properly. The Act has stimulated research in those areas.

Marine mammal research has almost always been fractionated — involving people in academic units, state government, federal government. The Marine Mammal Protection Act has focused these efforts. Permits are now centralized. Objectives have been refined. Funding is concentrated in just a couple of critical places.

But I think that there are more problems of a critical nature than there are funds or skilled personnel to pursue them. In many respects, the funding has increased, but the problems have escalated at a faster rate. We're not able to direct concentrated attention at all the problems that really need attention.

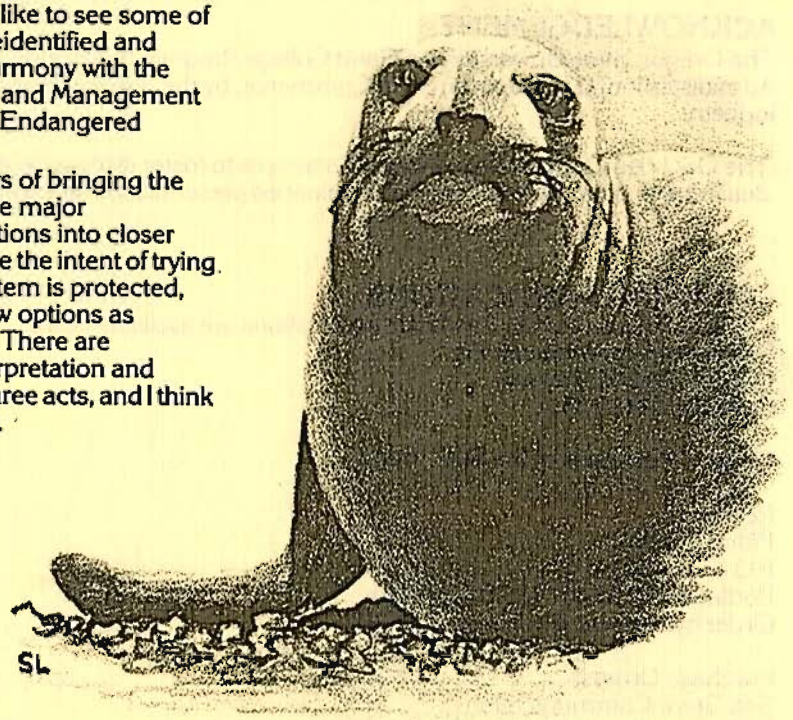
SEA GRANT

From your point of view, why hasn't the Marine Mammal Protection Act been implemented better?

BRUCE MATE

In the seven years since the Marine Mammal Protection Act was passed, we've learned that there are many good philosophies put forward in it. But we've had difficulty applying some of them in practical circumstances. A number of people, I think, would like to see some of the terms in the Act reidentified and brought into better harmony with the Fishery Conservation and Management Act, and also with the Endangered Species Act.

I believe there are ways of bringing the intent of all three of the major environmental legislations into closer harmony. They all have the intent of trying to see that the ecosystem is protected, and that we lose as few options as possible in the future. There are differences in the interpretation and emphasis within the three acts, and I think these can be resolved.



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The OSU Sea Grant College Program attempts to foster discussion of important marine issues by publishing reports, sometimes dealing with controversial material. A balanced presentation is always attempted by the Sea Grant College Program.

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