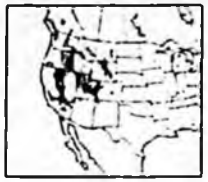
ALASKA LEGISLATURE COMMITTEE FILES, 1989-1990 8672
5975 HOUSE RESOURCES



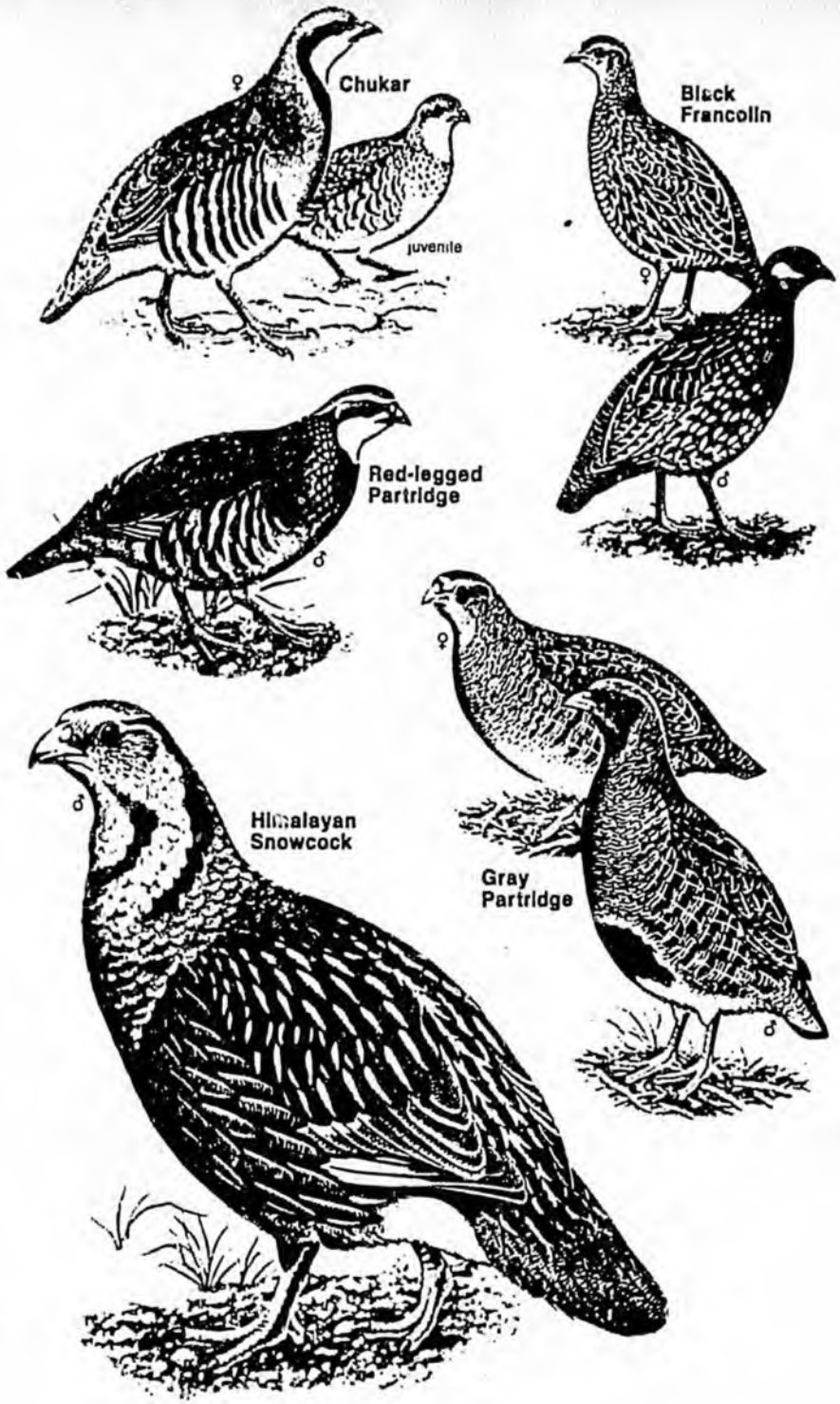
Chukar *Alectoris chukar* *L 14" (36 cm)*
Asian species, introduced in North America as a gamebird. Brownish-gray above; flanks boldly barred black and white; buffy face and throat outlined in black; breast gray; belly buff; outer tail feathers chestnut. Bill and legs are red. Lacks white eyebrow of similar Red-legged Partridge. Sexes are similar, but males are slightly larger and have small leg spurs. Juvenile is smaller and mottled; lacks bold black markings of adults. Chukars have become established in rocky, arid, mountainous areas of the west; game farm birds are released for hunting in the east. In fall and winter, Chukars feed in coveys of 5 to 40 birds. Calls include a series of rapid *chuck chuck chuck* notes and a shrill *whitoo* alarm note.

Black Francolin *Francolinus francolinus* *L 14" (36 cm)*
Asian species, successfully established in Louisiana and parts of south Florida. Male's glossy black plumage is heavily marked with white and buff; white cheek patch; chestnut collar. Female is mottled brown overall, with paler chestnut patch on nape. A secretive bird, partial to dense vegetation, grassy fields, and croplands. Song of male is a loud, rhythmic *chik-cheek-cheek-keraykek*.

Red-legged Partridge *Alectoris rufa* *L 14" (36 cm)*
A European species, widely introduced to North America but has not yet become established. Browner above than similar Chukar, with conspicuous white eyebrow, whitish chin and throat, black bib with gray speckles; flanks are gray, barred with black, white, and chestnut. Legs and bill red. A bird of mountainous regions and open, arid lands in the west; feeds chiefly on seeds and leaves, and on roots and tubers it digs from the ground with its bill. Call is a harsh, staccato *chuck-chuck-chuck-chukuk*.

Gray Partridge *Perdix perdix* *L 12½" (32 cm)*
Widely and successfully introduced from Europe. Grayish-brown bird with rusty face and throat, paler in female. Male has large brown patch on belly. Flanks are barred with reddish-brown; outer tail feathers rusty. Inhabits open farmlands, grassy fields. In fall, forms coveys of 12 to 15 birds. Calls include a hoarse *kee-ah*.

Himalayan Snowcock *Tetraogallus himalayensis*
L 28" (71 cm) Large Asian bird, apparently successfully established only in the Ruby Mountains of northeastern Nevada. Gray-brown overall, with tan streaking above. Whitish face and throat are outlined with chestnut stripes; undertail coverts white. Inhabits mountainous terrain, flying downslope early in the day and feeding on tubers and plants as it walks slowly back uphill. Clucks and cackles constantly as it feeds.



June 10, 1988

Mr. Ronald G. Clarke
Special Staff Assistant to the Governor
Office of The Governor
P.O. Box A
Juneau, Alaska 99811-0101

Dear Mr. Clarke:

Thanks for your interesting letter of May 31. I doubt that given inexhaustible supplies of printers ink, paper and time, we could resolve the issues of privatization or commercialization of wildlife, so I won't try.

Some observations may be worthwhile though. There is no consistent policy among the states within the United States, let alone among the nations of the world on this subject. There is wide disagreement among professional wildlife managers and this division is exacerbated in legislative bodies when vested financial interests get to whetting their knives.

Until recently, at least, we took for granted that mink and muskrat, salmon and seal were fair game for commercial harvest directly from the wild. Why is it acceptable to commercially harvest and "privatize" some species and not others? From a technological viewpoint, are there differences in management feasibility, licensing or regulation? Or does tradition or public acceptance take over?

Retreat one step from the situation where wildlife is taken legally and commercially directly from the wild and sold dead, and there are many species that

may be taken alive, captively bred and sold commercially -- alive but not dead. This is the general state of affairs with game species at both the state and federal level.

In practice, most people who apply for propagation permits are pursuing aviculture for recreation (analogous to sport hunting) and simply sell surplus live, young birds to other recreational aviculturists.

When Tom Cade started the Peregrine Fund his main source of breeding stock was peregrines owned by individual falconers. These birds, originally taken from the wild (prior to the 1972 Amendment to the treaty with Mexico and the 1973 Endangered Species Act), were placed on breeding loan to Cade and provided not only a unique source of breeding stock but a diverse gene pool unaltered by generations of captive selection. Thus, privately owned birds, legally taken for recreation, i.e. falconry, were provided by falconers for a dramatic and successful conservation project. I conclude that all "privatization" of wildlife is not all bad.

Fortuitously, we have been able to simulate this process with two endangered species of pheasants. Aviculturists provided foundation breeding stock of Swinhoe's Pheasant for restoration in Taiwan and of the Cheer Pheasant for reintroduction in Pakistan. These aviculturists were, like the falconers, keeping these species for recreation and had no grand design for conservation. Neither the pheasant aviculturists, the falconers, nor, let me stress, the responsible institutions, planned these events. I think these and similar experiences should give us pause before putting all our eggs in one basket.

You would probably be interested in a recent essay by Val Geist, "How Markets in Wildlife Meat and Parts, and the Sale of Hunting Privileges, Jeopardize Wildlife Conservation," Conservation Biology, 2(1): 15-26, March 1988.

The same issue also contains a Special Section on Disease and Conservation, a topic of concern to my good friend Dr. McKnight, in relation to SB 443. Disease epidemics in wildlife have attained considerable prominence in recent years, especially as a result of federal biologists becoming sensitized. In my opinion, this is due in part to steadily increasing densities of migratory waterbirds on decreasing habitat, especially wintering areas, resulting in frequent epizootics. Some biologists suspect that hunters, subsistence users and aviculturists might as well pare these populations down to what the habitat will support as to allow the populations to be continually ravaged by disease.

With specific regard to galliform birds, almost one fourth of the 250 species and over 600 subspecies are currently endangered. A few species already are extinct. There is no doubt that within

the next quarter century dozens of species will become extinct in the wild due to human population increases. Michael Soule' has aptly labeled this crisis the "demographic winter." Bill Conway has estimated the capacity of the world's zoos to accomodate the 2000-3000 species of higher vertebrates that are confidently expected to become extinct and its going to be a tight fit to save representative samples.

Galliform birds have the advantage that there are thousands of private aviculturists world wide who, if properly organized and educated, can contribute to preservation of species and thus relieve public institutions of a large part of the economic burden. A population of somewhere between 500-1,000 individuals of each captive species must be maintained for demographic security and genetic management. A central, computerized management system is required featuring a random breeding scheme. I can easily visualize the necessity of physically shipping hundreds or thousands of individuals each year between aviculturists in such countries as the United States, Western Europe, Japan, Russia, Canada, etc. to satisfy computer generated, genetic dictated mating systems.

Thus, I believe wildlife and agricultural agencies must factor this emerging situation into their institutional policies. For example, I think agricultural agencies should be urgently encouraged to begin the process of developing reciprocal quarantine and health inspection programs with other countries. The permitting process by wildlife and agricultural agencies must be streamlined; the current speedy process of obtaining a hunting license is a worthy goal. (If the Fish and Game Department's procedures for obtaining a captive propagation license were as objective and concise as those required for buying a hunting license, would individuals be by-passing the Board of Game for the Legislature?) The agricultural community cannot be permitted to foist on wildlife interests the economic costs of a purely sanitized livestock industry--as the Southeastern Cooperative Wildlife Disease Study is currently attempting to do with their monstrously bureaucratic and inordinately costly model state law.

What I have briefly attempted to sketch here is that private aviculturists have a potentially large and legitimate role to play in preserving the global avifauna. State wildlife agencies have a similar role and one that extends far beyond state boundaries. It seems to me that state wildlife agencies would benefit greatly by welcoming aviculturists as one of their constituencies and both should get on with mutually important conservation tasks. A good faith dialogue might do wonders.

Sincerely yours,

C. Eugene Knoder

C. Eugene Knoder
President

CEK:slb

cc: Dr. Donald E. McKnight

April 28, 1988

Hon. Dick Eliason
Alaska State Legislature
P.O. Box V
Juneau, Alaska 99811

Dear Senator Eliason:

I am writing in support of Senate Bill 443, "An Act relating to game bird farming; and providing for an effective date."

This proposed legislation permits captive rearing of grouse for commercial purposes and provides that the department (of Fish and Game) may issue a game bird farming license, and contains additional procedures.

I believe long experience extending over several decades in a number of states has shown that many species of wildlife can be commercially propagated without adverse effects on wild populations. Further, there are many benefits to society at large, including economic and scientific ones, and to particular groups, such as sportsmen. Some examples of commercially bred species (some reared annually by the millions) are mallard ducks, ringneck pheasants, bobwhite quail, wild turkeys, chukar and Hungarian partridge, elk, white tailed deer, and on a more limited scale, ruffed, blue and sharp tailed grouse and prairie chickens. I am not aware of any major legal or biological problems involved in these operations in those states where they are legally conducted.

Several species of grouse have been captive reared and released to the wild by state fish and game departments over the years. The New York State Conservation Department was one of the pioneers in this work with

the ruffed grouse.

Also, several states and Canadian Provinces have imported from Europe and released into the wild hundreds of wild trapped capercaille and black grouse in an attempt to establish these game species for their sportsmen. Specifically, the fish and game departments of New York, Maine, Michigan, Wisconsin and Newfoundland, Ontario and British Columbia have engaged in such projects. All were failures insofar as establishing these species in the wild but I am not aware of any adverse effects resulting from these attempts.

Similarly, under the sponsorship of the U.S. Fish and Wildlife Service, the Wildlife Management Institute and the Wisconsin Conservation Department, capercaille and black grouse were released in Wisconsin but this attempt failed, again without adverse effects.

The importation and release of these grouse was a part of the U.S. Fish and Wildlife Services Exotic Gamebird Introduction Project, headed by the late Dr. Gardiner Bump. I am personally familiar with these grouse introductions because I served as the national coordinator for this project for several years.

Based on that experience, I am aware of no instances of disease transmission by introduced grouse. Grouse are extremely susceptible to diseases and death usually occurs so rapidly that they are unable to transmit disease to other individuals. I have been responsible for captive rearing grouse programs in former positions with the Ohio Department of Natural Resources and the U.S. Fish and Wildlife Service, so my statements are partially based on personal experience.

Also, I am unaware of any cases of introduced grouse hybridizing with native species. Hybridization does occur regularly and naturally in a few localities between two native grouse species, the sharp tailed grouse and the prairie chicken, but has not proved cause for alarm.

One further point: I am not aware of a single instance anywhere in the world where a wild grouse population has been established from captive reared and released birds. The reason is that using traditional release methods, captive reared grouse cannot adjust to the wild and usually die within a short time. Research on several species of pheasants has shown that genetically inferior stock cannot survive in the wild, let alone successfully reproduce.

Thus, fears about disease transmission and contaminating wild birds with genetically inferior stock appear more theoretical than real. The fact that several state fish and game departments, the U.S. Fish and Wildlife Service and the Wildlife

Management Institute have sponsored exotic grouse introductions without incident seems to further minimize these arguments.

Finally, let me speak briefly to the matter of equity in public policy regarding utilization of wildlife resources. There are many legitimate uses of "harvestable surpluses" of wildlife populations. We commonly accept taking for sport hunting and fishing, trapping (both recreational and commercial), scientific and management collecting (live and dead), commercial fishing and hunting (fur seals are a good example of the latter), hunting and fishing for sustenance, and taking animals alive for recreation (aviculture, falconry) and for foundation stock for commercial purposes (the latter ranges from capturing orcas for Sea World to mealworms for fishbait and bird feed). In most of these cases, wildlife is "privatized", whether it be a moose in the freezer or a goshawk on a falconers fist. There is nothing wrong with this policy.

It seems to me no more than a matter of even-handedness that legislation and regulations should accomodate all legitimate user groups. Such accomodation should, of course, be within a framework of sustained yield as determined by competent professionals.

In conclusion, I can see no valid objections to S.443 and urge you pass this bill expeditiously.

Sincerely yours,

C. Eugene Knoder

C. Eugene Knoder
President

CEK:slb

cc: Senator Coghill
Senator Kerttula
Ken and Judi Rivard
David Cline
Linda Dellinger
Don McKnight
Ronald G. Clarke

STATE OF ALASKA

STEVE COWPER, GOVERNOR

DEPT. OF ENVIRONMENTAL CONSERVATION

DIVISION OF ENVIRONMENTAL HEALTH
OFFICE OF THE STATE VETERINARIAN

745-3236
Suite A
500 S. Alaska
Palmer, AK 99645

April 4, 1988

Mr. Ken Rivard
Alaska Gamebird Associ
P.O. Box 871842
Wasilla, AK 99687

Dear Mr. Rivard:

Following are my comments on your proposal to pen raise grouse in Alaska. The issues of concern for the Department of Environmental Conservation would be disease transmission into resident game birds and manure disposal.

In an effort to gather accurate data on grouse I spoke to Dr. Richard P. Chinn, regional disease reporter for the American Association of Avian Pathologists. He stated that he was not aware of any disease in grouse which did not already exist in domestic or wild avians. Therefore the grouse do not represent any greater risk than other domestic or semi-wild birds raised in captivity. To reduce disease risk further, grouse could be tested for mycoplasma, Newcastle disease and salmonella. Parasites could be eliminated by treating the grouse at two-week intervals for eight weeks. The negative serological tests combined with the parasite treatment would eliminate the need to burn or bury the feces.

The risk of disease transmission is further reduced by the pen design. The pens for houseing the grouse appear sufficient to prevent escapement and/or access by predators, excluding bear. Should a grouse escape there is a perimeter fence surrounding the aviary complex. To further reduce the risk of escapement each grouse will have one wing clipped to prevent flight.

The information I have read on the possibility of disease transmission into wildlife by gamebirds, specifically grouse, leads me to believe that the risk is minimal or non-existent.

Sincerely,

Bert A. Gore, D.V.M.
State Veterinarian

hd

THE UNIVERSITY OF GEORGIA
COLLEGE OF VETERINARY MEDICINE
DEPARTMENT OF AVIAN MEDICINE

POULTRY DISEASE RESEARCH CENTER
953 COLLEGE STATION ROAD
ATHENS, GEORGIA 30605-2797
(404) 542-1904

March 8, 1988

Mr. Ken Rivard
Alaska Gamebird Association
P.O. Box 871842
Wasilla, AK 99687

Dear Mr. Rivard:

Dr. Schwartz has forwarded me the packet of material he received from you and your request for comments.

I feel qualified to comment on the potential disease hazzard but not on other questions raised by the AD F & G.

Prohibiting the release of gallinaceous birds on the assumption that they will spread contagious diseases to native reared species is not justified. The potential is minimal. Most of the diseases that occur in these species when reared in captivity occur becuase the high density production methods may cause a logarithmic increase in exposure levels. This simply does not occur in normal native habitat. Most of the possible exceptions can be control by use of prophylactic treatment of the individuals to be released . eg. Blackhead the intermediate host can be controlled in the birds to be released.

I have worked on release programs in Missouri, Texas, and Georgia, beginning in 1953. Only rarely have diseases been a problem, and these instances occured before we had effective chemo-therapeutic drugs available.

If I may be of additional service, please let me know.

Sincerely,

Stanley A. Vezey

Stanley A. Vezey, DVM
Professor Avian Medicine

SAV/ldf

CC: L. Dwight Schwartz

FACULTY OF FORESTRY

UNIVERSITY *of* TORONTO Toronto, Ontario, Canada M5S 1A1

March 24, 1987

Mr. Ken Rivard
P.O. Box 871842
Wasilla, Alaska 99687
U.S.A.

Dear Mr. Rivard,

I am in favour of the transfer, keeping, and breeding of all species of grouse in captivity so long as it is done responsibly and well. I believe the advantages gained by game or wildlife breeding outweigh the disadvantages, and I do not know of any case where captive grouse or their transfer have caused threats to wild populations.

I know the aviculture of grouse has provided the following benefits: (1) An international group of professionals and amateurs who work singly and in groups to further the welfare of the grouse and other animals, (2) the provision of information and material of educational and scientific importance, (3) the holding and study of grouse in co-operation with professional scientists, and (4) the display of grouse for the enjoyment of the public. I think this last point is important for the grouse are relatively unknown and deserve appreciation.

In addition to this list, grouse holding and breeding must provide a challenge, fascination, and a lot of pleasure for the breeder.

You may use this letter as you wish. If I can address other points that are of concern to you please let me know.

Yours sincerely,

J.F. Bendell

J.F. Bendell
Professor

/dk

College of Agricultural Sciences
DIVISION OF LIVESTOCK-POULTRY HEALTH

CLEMSON UNIVERSITY

May 3, 1988

Mrs. Judith Rivard
PO Box 871842
Wasilla, Alaska 99687

Dear Mrs. Rivard:

Sorry for delay in responding to your request for information on diseases in captive-raised gamebirds. My experience with grouse is extremely limited; most of my work being with bobwhite quail, wild turkeys, chukars, and pheasants.

First off, I don't know what the disease status is of the wild grouse population in Alaska. Here, we try to keep up with the disease status in our wild turkey and quail populations. It helps to know what's already out there when making regulations governing the propagation and release of captive-reared birds. In several cases we have found our wild turkey populations to be carrying such high levels of internal parasites that they would not be allowed to be released if they were captive-raised birds.

I feel strongly that gamebird propagators should have an obligation and desire to produce as near disease free birds as practically possible. Therefore most of our producers are on health surveilance plans to help assure this.

Most all producers that I have dealt with agree with me on this because it's just good business - diseased birds may not only be a threat to the health of wild birds but they don't perform as desired if they are diseased.

There is a definite need for better understanding between game propagators and Fish and Game Departments in most states. We have seen quite a bit of improvement in this relationship in this state over the past 15 years due to the efforts of a number of people. I feel that we in the propagation business are responsible citizens who want to protect the environment and are willing to do so by expending the effort and expense to raise as near disease free game as possible. I feel that the officials in the Game and Fish Departments need to recognize this and with mutually agreeable regulations, the aims of both parties can be accomplished.

POST OFFICE BOX 218 • ELGIN, SOUTH CAROLINA 29045 • TELEPHONE 803/788-2260

I work very closely with our Fish and Game Department as well as with the gamebird propagators and while we still have room for improvement, relations have greatly improved over the last few years.

I am sorry I am unable to help you with specific information on grouse. Please, let me know if I can be of assistance in any way.

Sincerely,

Thomas H. Eleazer

Thomas H. Eleazer, DVM
Veterinary Pathologist

/dm

ANIMAL HEALTH DIAGNOSTIC LABORATORY

P.O. BOX 30076 • LANSING • MICHIGAN • 48909-7576
PHONE (517) 353-1683

March 2, 1988

Alaska Gamebird Association
Legislative and Regulation Committee
c/o Judith Rivard
Post Office Box 871841
Wasilla, AK 99687

Dear AGA Legislative and Regulation Committee:

I am writing in regard to the AGA request to the Alaska Department of Fish and Game to grant their membership permission to pen raise various breeds of grouse and other galliform types of upland gamebirds. I am a poultry veterinarian and I have worked on gamebird health programs and problems since 1961. Much of my work is diagnostic and includes handling gamebirds submitted from private growers as well as from the wild. To date, I have seen no evidence indicating that pen reared birds were the source of disease introduction to their counterpart in the wild. It is true that pen reared birds contract infectious diseases; however, it is likewise true that noncaptive birds in the wild contract infectious diseases and neither group tends to be the direct link of a disease break to the other. Therefore, I am continually amazed at the type of concern that is repeatedly expressed by game biologists and state game commissions. There really is no laboratory proof to support that concern.

Infectious diseases spread in a variety of ways -- bird to bird, air, environment, streams, predators (especially dogs, foxes, etc.), insects, humans, equipment and fomites. Bacterial and protozoan diseases tend to become endemic within an area, be it pens, farms or the natural habitat. We know from experiences of huge die-offs of migratory birds caused by botulism, *Pasteurella*, erysipelas and encephalomyelitis that the disease agent was resident in the area of the outbreak. It is further known that migratory waterfowl are the carriers, shedders and introductory source of viral disease agents into resident flocks of domestic poultry, including pen raised gamebirds. A case in point is the annual avian influenza breaks that occur in domestic turkeys. Duck virus enteritis is another acutely contagious viral disease of waterfowl -- domestic and wild -- that is spread state-to-state and country-to-country by infected migratory waterfowl during their spring and fall migrations. Duck virus enteritis is extremely lethal to most domestic breeds of waterfowl with mortality near 100%, especially in muscovy breaks.

If we were to list the diseases commonly spread from wild gamebirds and migratory waterfowl to domestic poultry and captive game birds, we would include *Pasteurella*, *Salmonella*, *Clostridium perfringens*, botulism, exotic forms of Newcastle disease, avian influenza, duck virus enteritis, duck virus hepatitis, viral enteric infectious (such as reovirus, adenovirus, etc.) and parasitic diseases (such as lice, mites and internal parasites of the cesstode and trematode varieties). These same diseases can readily spread downstream from points of introduction into cold, fast-flowing streams as well as by carnivore predators; therefore, it is neither realistic nor verifiable to state that captive birds of any type are a realistic disease threat to noncaptive birds in the wild of the same type, except, perhaps, in a localized situation. Obviously, the noncaptive birds have greater potential for disease spread than captive birds through contamination of streams, lakes, land, insects and predators, all of which can later become the introductory source to captive birds.

As a scientist in the field of avian medicine, avian pathology and avian preventive medicine, I do not believe that captive gamebirds pose any real or widespread threat to their noncaptive counterparts. The entire issue appears more of a paranoia or excuse on the part of game commission personnel or, more likely, a personal dislike by individual game biologists than a scientifically proven fact. I am not a geneticist, but I have known and worked with avian geneticists of national and international reputation and my feeling from their discussion is that wide cross-breeding is probably unlikely. Phenotypic changes, as they explain, are just as likely to result from a mutation or homozygocity as from extensive cross-breeding. These subtle changes do result in changes in size, feather pattern and other physical characteristics. My point here is that none of the geneticists have expressed alarm that the cross-breeding that <u>might</u> occur is a threat to the general phenotype of the noncaptive birds.

I appreciate the opportunity to express and explain my position in favor of permitting the breeding and maintenance of more than one grouse species. The introduction of the pheasant and chukar partridge into the U.S.A. has been a real asset to our upland gamebirds wildlife and to the sportsman as well.

Respectfully submitted,

L. Dwight Schwartz

L. Dwight Schwartz, D.V.M.
Professor, Avian Medicine and Pathology

LDS:kd

PRAIRIE VETERINARY HOSPITAL
1305 BUSINESS LOOP EAST
JAMESTOWN, NORTH DAKOTA 58401

TELEPHONE (701) 252-9470

May 15, 1988

Mr. Ken Rivard
Alaska Gamebird Association
Wild Acres Farm
P. O. Box 871842
Wasilla, Alaska 99687

Dear Mr. Rivard:

In reviewing the information you have provided regarding the Alaska Gamebird Association's efforts to acquire approval for captive propagation of grouse under permit from the Alaska Department of Fish and Game, it appears that the Department's concerns over the proposal fall into two principal categories.

First is a matter of policy involving the issue of "privatization" of wildlife. The Department takes the position that native grouse belong to all of the people of Alaska and that it does not have the authority to authorize the capture of wild grouse for propagation purposes unless it can be demonstrated to be in the best interest of all citizens of the State. Not addressed by this position, however, is the matter of propagation of grouse not captured from the wild, but obtained from other propagators of captive grouse.

Also unresolved by the Department's policy is how its authorization of private individuals to kill native wild grouse (hunting) for private enjoyment (recreation, consumption and display) is in the best interest of all of the citizens of the State, but allowing other private individuals to propagate captive grouse for private enjoyment is not. It would be helpful in understanding the Department's policy if it would explain the biological and philosophical bases for its determination that killing wild grouse is in the best interests of the citizens of Alaska, but propagating them in captivity is not.

The second category of concern is biological and includes three specific issues: (1) the risk of introducing diseases into native wild grouse populations, (2) the potential for hybridization between captive-reared and native wild birds, and (3) the potential for introducing exotic species which could compete with native grouse. I will not comment on the last two issues, except to note that the risks of hybridization and introduction of exotic species, to whatever degree they might exist, are substantially less in birds held solely for captive propagation than in birds propagated in captivity for release into the wild. Thus, captive production of game-farm mallards for release to augment hunting poses a greater opportunity

for hybridization than does the captive propagation of woodducks for exchange among aviculturists.

In view of the substantial disparity in potential for hybridization and introduction of exotic species, it would appear appropriate for the Alaska Department of Fish and Game to address strict captive propagation and propagation for release as separate issues when considering the matter of permits for captive propagation of gamebirds.

The Alaska Department of Fish and Game, in its March 1, 1988, analysis of Senate Bill 443, states that, aside from the privatization issue, it has two chief concerns about captive propagation of grouse, and,

> "First is the very real potential for introducing disease organisms into wild stocks of grouse and ptarmigan."

In its January, 1988, Draft Issue Paper on "Game Bird Farming of Grouse and Ptarmigan," the Department of Fish and Game says that the problems of propagating grouse in captivity "are much greater than are those of pheasants, quail and commercial poultry . . . due in part to a high susceptibility of grouse to various diseases and parasites." Unfortunately, no data or citation to scientific authority are provided to substantiate this statement, and none of the diseases and parasites to which grouse allegedly are highly susceptible is identified, so it is difficult to evaluate the significance and validity of this claim. I am not personally familiar with published data demonstrating a greater susceptibility of grouse to infectious diseases and parasites than pheasants and quail. However, it is reported that chukar partridge are more susceptible to histomoniasis than pheasants and chickens, that pheasants are readily susceptible to Mycoplasma gallisepticum infection, and that young turkeys, chickens and pheasants are very susceptible to Syngamus trachea infection. (See below for discussion of specific diseases.) The Alaska Department of Fish and Game has no permit requirements for the captive propagation of pheasants, chukar partridge or turkeys.

Without citing scientific evidence, the Department speculates that:

> "The stress of confinement can contribute to the sensitivity of these birds to disease and may explain why grouse trapped from the wild sometimes experience more disease problems than other game birds reared in the same facilities."

The Department neglects to identify specific diseases to which wild trapped grouse may be made more sensitive (susceptible?) by the stress of confinement, and it offers no evidence that these diseases are contagious (i.e., transmitted from bird to bird) or even infectious (i.e., caused by microorganisms). There is little doubt that confining wild-caught birds does cause significant stress, and this frequently is manifested in failure to adapt to unfamiliar foods or feeders, or simply in failure to consume sufficient quantities, resulting in malnutrition, in failure to drink, resulting in dehydration, and in trauma (e.g., "scalping" and abrasion of the face and wings) from repeated contact with the enclosure. The problems of the stress of confinement are greatly diminished in birds that are reared in captivity, rather than being trapped from the wild. In fact, the Department points out that:

> "Commercial breeders are likely to be the major source of grouse for Alaskan aviculturists."

so the issues of privatization of Alaska's wild grouse and increased susceptibility to disease from the stress of confinement are, for practical purposes, moot.

Without documentation and without identifying specific pathogens, the Department states that:

> "Infectious diseases are relatively common in commercial wild bird operations. . ."

What the Department neglects to mention is that the same statement can be made, with scientific documentation, for commercial poultry operations.

The Department attributes this alleged common occurrence of diseases in commercial wild bird operations,

> ". . . to lack of health certification within the industry, environmental conditions that facilitate the transmission and maintenance of disease agents once they have been introduced, and inadequate disease diagnosis and control programs."

and from this concludes that:

> "Following importation to Alaska, diseased birds from a single source could result in widespread and costly contamination of both commercial and wild bird stocks."

In is instructive to note that the Department of Fish and Game does not claim, or cite evidence to support a claim, that infectious diseases are any more common in captive grouse than in captive pheasants, junglefowl, guinea fowl, quail, bobwhite, peafowl and chukars from commercial breeders for which the Department of Fish and Game has no permit requirements. In fact, the lack of health certification, environmental conditions that facilitate the transmission and maintenance of disease agents once they have been introduced, and inadequate disease diagnosis and control programs are, if anything, more serious in commercial wild bird operations supplying species for which the Department has no permit requirements than they are in captive grouse breeding operations which generally are far less commercialized than many pheasant, chukar and quail hatcheries.

Moreover, the Department does not address the far greater potential for domestic poultry to introduce diseases which could result in widespread and costly contamination of both commercial and wild bird stocks. In this respect, it should be noted that virtually all of the reported diseases of grouse--and many others--occur in domestic chickens and turkeys, yet the State of Alaska requires that imported poultry only (1) originate from flocks negative for pullorum and fowl typhoid, (2) are produced in compliance with the National Poultry Improvement Plan (which deals only with pullorum, fowl typhoid and mycoplasma), and (3) originate from flocks and areas not under state or federal restrictions.

It appears that the Department of Fish and Game is far more concerned about the introduction of disease agents and the contamination of commercial flocks than is the Alaska Department of Agriculture, and it is far more concerned about the introduction of disease agents and the contamination of wild bird

stocks by captive grouse than by other species where the incidence and severity of diseases is at least as great, but for which the Department of Fish and Game has no permit requirements.

In its Draft Issue Paper, the Department of Fish and Game cites the 1983-84 avian influenza outbreak in domestic poultry in New England and two 1986 avian influenza outbreaks in gamebirds in Pennsylvania and Oregon, and observes that:

> "From a wildlife management perspective, the most disturbing factor in these recent events is the presence of avian influenza viruses in game bird species."

In view of the fact that more than 80 avian influenza viruses have been identified from a wide variety of domestic and wild birds and occur in migratory waterfowl at rates of from 1 percent to 5 percent, it is unclear why the Department finds the presence of avian influenza viruses in gamebird species to be so disturbing.

What is most disturbing from the perspective of objective, professional analysis, however, is not simply the Department's failure to say whether any of these recent avian influenza outbreaks involved captive grouse, but its failure to mention that other gamebird species for which the Department has no permit requirements undoubtedly were involved in those outbreaks. If the Department is going to cite avian influenza in gamebirds to support a ban on importation and captive propagation of grouse, then it has no rational alternative except to ban the importation and captive propagation of all other gamebird species as well.

The relevance of the Department of Fish and Game's citation of mycoplasmosis in turkeys as "a good example" to support its concern about the potential for introducing disease agents is unclear. Not only does the Department itself go on to acknowledge that all strains of wild turkeys may be imported into Alaska without permits, but it neglects to mention that the Alaska Department of Agriculture does require full compliance with National Poultry Improvement Plan requirements, which include mycoplasma testing, for all poultry, including turkeys, imported into the state.

The remaining two specific examples of possible disease introductions by captive birds cited by the Department--avian malaria and avian pox in Hawaiian forest birds--are also of questionable relevance. To suggest that the introduction of these diseases to the Islands by the pet bird industry (if, indeed, they were not already enzootic in the native Hawaiian avifauna) is the principal factor impacting the abundance and distribution of native Hawaiian forest birds would be to ignore the impacts of the extensive destruction of the native Hawaiian forest itself as the result of commercial and agricultural development.

On the other hand, if the native Hawaiian avifauna had evolved in the absence of avian pox and avian malaria, introduction of these diseases into susceptible populations would be expected to have a significant impact. This would not be the situation with grouse, however, where both avian malaria and avian pox already are enzootic in wild populations.

The Department of Fish and Game suggests that transmission of diseases by insect vectors and through contamination of environments may be more important

than transmission by direct contact of escaped or released birds with native wild birds, but neglects to identify the specific diseases where this might occur so it is difficult to evaluate the significance of the Department's concern. Nevertheless, to the extent that transmission of diseases from captive grouse to wild populations by insect vectors or contaminated environments might occur, it is necessary to recognize that transmission by these same routes from domestic poultry and from other gamebird species for which the Department has no permit requirements poses far greater potential for introducing diseases into wild bird populations than would captive grouse propagation operations where the number of operations and the numbers of birds would be expected to be far fewer.

The Department of Fish and Game asserts, without documentation, that:

> "Old world grouse have the potential to introduce pathogens to geographically isolated and "naive" Alaska populations, which may have evolved in the absence of those disease organisms and therefore may be more vulnerable to them."

The "potentials," "may haves" and "may bes" make this interesting, albeit hypothetical, speculation. In order to be substantive, it would be helpful if the Department would cite the specific pathogens of Old World grouse that do not occur in North American grouse. Leucocytozoon mansoni, a protozoan blood parasite, is common in capercaillie, black grouse and hazel grouse in Sweden (see Cook, 1971) but has not been reported in North American grouse. It also has not been reported to cause significant mortality in grouse (see Lund, 1972).

The statement that:

> "Even within the state, many disease agents may exhibit varying degrees of virulence among discrete populations of essentially non-migratory game birds."

suggests that the Department of Fish and Game has data on the incidence and pathogenicity of at least some disease agents in Alaskan non-migratory gamebirds. These data should be presented or cited in order that the significance of this regional variation in virulence can be evaluated objectively.

The Department says that:

> "One way to minimize the risks of disease transmission and epizootics is by continuing to restrict importation of exotic species . . ."

But, the Department does not restrict the importation of exotic species now, as is demonstrated by its own admission that it has no permit requirements for turkeys, pheasants, junglefowl, guinea fowl, quail, bobwhite, peafowl or chukar partridge. If the Department really believes that the importation of exotic species poses a significant risk of disease transmission and epizootics, then it has no rational option except to restrict the importation of these species, too.

The relevance of the Department of Fish and Game's mention of its develpoment of,

> ". . . policies prohibiting transplants, introductions, and mixing stocks of native Alaskan fish in order to prevent the spread of disease and maintain genetic variability."

to the captive propagation of grouse is not clear. However, similar policies prohibiting transplants, introductions and mixing of stocks of wild grouse could be imposed, if necessary, to prevent the spread of disease and maintain genetic variability. However, such prohibitions would appear relevant to captive grouse propagation only where the grouse were being produced for release into the wild.

A footnote to the Department's Draft Issue Paper indicates that comments from Dr. Milton Friend, Director of the U. S. Fish and Wildlife Service's National Wildlife Health Center at Madison, Wisconsin, contributed to the "Health Considerations" section of the Issue Paper. The Department does not identify the specific information that was provided by Dr. Friend, but it may be relevant to review that contained in Dr. Friend's November 22, 1987, letter to the Department of Fish and Game.

Unfortunately, Dr. Friend's letter does not address the issue of diseases in captive grouse specifically. In fact, his letter does not make any mention of grouse. However, it may be helpful to consider the diseases which Dr. Friend lists as "[e]xamples of disease problems associated with captive reared and/or translocated" birds.

Duck plague, or duck virus enteritis, is a viral disease of ducks, geese and swans and does not affect grouse or other gallinaceous birds. Consequently, although it is not a disease of concern in captive grouse propagation, the history of duck plague on North America may provide some insights into what might be expected to occur with other diseases introduced into presumed susceptible populations of wild birds.

The first reported occurrence of duck plague on this continent was in commercial domestic duck flocks on Long Island in 1967 (see Leibovitz, 1972). Associated with that outbreak were several reports of incidental mortalities among wild waterfowl in the vicinity of the infected commercial flocks. Subsequently, scattered outbreaks have occurred in captive waterfowl in the United States and Canada (see Leibovitz, 1972; Jacobsen, et al., 1976; Hanson and Willis, 1976).

The source of introduction of duck plague virus into the commercial flocks on Long Island is unknown, but imported waterfowl are considered the most likely (Newcomb, 1968).

In January, 1973, the first major outbreak of duck plague in free-flying wild waterfowl occurred at the Lake Andes National Wildlife Refuge in South Dakota among a population of 100,000 mallards and 9,000 Canada geese. By the time the outbreak ended the following month, an estimated 40,000 waterfowl had died (Berlinger, et al., 1973).

Although there can be little argument that the Lake Andes outbreak represented a massive introduction of duck plague virus into a wild waterfowl population,

there have been no further major outbreaks in free-flying wild waterfowl in the subsequent 15 years. In fact, based upon surveys conducted by Dr. Friend's laboratory subsequent to the Lake Andes outbreak, it has been concluded that duck plague "is not established in North American migratory waterfowl as an enzootic disease" (Brand and Docherty, 1984).

If the introduction of a disease which causes a 40 percent mortality among an exposed population of 100,000 birds is not sufficient to establish the disease in a wild population, then it would appear that a great deal more than a few infected birds is required. Indeed, Brand and Docerty (1984) cite the subsequent occurrence of occasional mortalities of migratory waterfowl from duck plague in association with outbreaks in nonmigratory and captive waterfowl as evidence of the continued susceptibility of wild populations. However, the absence of additional major outbreaks in these susceptible migratory waterfowl also could be interpreted as evidence of the failure of duck plague to become established in wild populations despite repeated introductions.

On the other hand, wild migratory waterfowl may also pose the potential for introducing duck plague into captive waterfowl. In an outbreak at a Wisconsin game farm, the only birds affected were black ducks which had been captured and supplied by the U. S. Fish and Wildlife Service for propagation by the game farm operator (Jacobsen, et al., 1976). Despite mortality in these wild-caught black ducks, duck plague did not extend to adjacent pens of mallards and other waterfowl.

Consequently, to the extent that duck plague serves as an example of disease problems associated with captive birds, it serves best to demonstrate that the establishment of diseases in wild populations is not always readily accomplished, even after repeated, and massive, introductions.

The listing of inclusion body disease of cranes in Dr. Friend's letter also is not of direct application to the captive propagation of grouse. In fact, its relevance to the issue of introduction of diseases into wild populations by captive birds is unclear, in view of the fact that virtually nothing is known of its incidence in either captive or free-flying cranes (Schuh and Yuill, 1985).

Exotic Newcastle disease may be one of the more relevant diseases listed by Dr. Friend in terms of its applicability to captive grouse, in view of the fact that other strains of Newcastle disease virus have at least been reported in gamebirds such as grey partridge, pheasants, quail, chukar partridge, and peafowl, if not grouse (see Palmer and Trainer, 1971).

The largest outbreak of exotic Newcastle disease on North America occurred in Southern California in 1972 and 1973. The velogenic, viscerotropic Newcastle disease virus was suspected to have been introduced into the high-density commercial poultry industry of Southern California by released or escaped imported exotic birds, probably psittacines. In controlling the outbreak, the U. S. Department of Agriculture expended in excess of $54 million and killed more than a million domestic chickens and turkeys.

Because of concern that wild birds could transmit the virus between poultry flocks and perpetuate the disease in wild populations, an extensive program was implemented to sample free-flying wild birds, captive and free-ranging

semi-domestic birds, and exotic birds in the quarantine area during the exotic Newcastle disease outbreak (Pearson and McCann, 1975).

Of a total of 9,446 free-flying wild birds sampled, exotic Newcastle disease virus was isolated from only four (0.04%). These included one crow that had been observed eating eggs from an infected chicken flock and three house sparrows from two infected poultry premises. On the other hand, a total of 33 isolations of exotic Newcastle disease virus were made from 4,367 (0.76%) semi-domestic birds, including quail, pheasants, chukar partridge, peafowl and guinea fowl--species for which the Alaska Department of Fish and Game has no permit requirements.

Thus, the example of exotic Newcastle disease virus cited by Dr. Friend demonstrates two points relevant to the issue of captive propagation of grouse. First, even where there is extensive and intensive association of wild birds with large numbers of infected captive birds (in this case, chickens), the virus may not readily become established in wild bird populations. Second, to whatever extent captive grouse might present a risk of introducing exotic Newcastle disease virus, other species for which the Department has no permit requirements present an equal or greater risk.

All species of birds are susceptible to avian tuberculosis (see Karlson, 1972) and it has been reported in grouse (see Gale, 1971). Tuberculosis appears to be endemic in some populations of some wild birds, including gulls, pigeons, starlings and crows (see Gale, 1971). Still, mortality from avian tuberculosis appears to be relatively rare in wild birds, except in cases where they frequent farms where tuberculosis is present in chickens (Karlson, 1972).

It is important to note that:

> "The infective environment, comprising as it does the bacilli-laden soil and litter, is the factor of greatest importance in transmission of the disease to non-infected animals. The longer the premises have been occupied by infected birds and the more concentrated the poultry population, the more prevalent the infection is likely to be." (Karlson, 1972)

It is evident, therefore, that domestic chicken flocks, where large numbers of birds may be kept on the same areas for extended periods, present greater potential sources of avian tuberculosis than would captive grouse flocks. It should also be noted that pheasants appear to be "unusually susceptible" to avian tuberculosis (Karlson, 1972).

Because wild grouse tend to be dispersed, there is a low probability of their natural habitats becoming sufficiently contaminated with avian tuberculosis bacilli to sustain transmission, even if occasional grouse should become infected.

Consequently, from the example of avian tuberculosis listed by Dr. Friend, it also may be concluded that, although the risk posed to wild grouse populations is low, domestic chickens and gamebird species for which the Department has no permit requirements pose a greater hazard than would captive grouse.

Salmonellosis, like avian tuberculosis, has been reported in a wide variety of wild bird species, including chukar partridge, pheasants, ruffed grouse and red grouse (see Steele and Galton, 1971). However,

> "Domestic poultry constitutes the largest single reservoir of salmonella organisms existing in nature." (Williams, 1972)

Also as with avian tuberculosis,

> ". . . infections in wild birds are acquired primarily from their environment." (Steele and Galton, 1971)

and

> "In certain circumstances, where large flocks of wild birds gather to feed in areas where domestic animals are raised, outbreaks may occur." (Steele and Galton, 1971)

Consequently, the conclusions that may be drawn regarding the risk posed by captive grouse from the example of salmonellosis are the same as those from avian tuberculosis, i.e., the risk to wild populations is low and domestic chickens and gamebirds for which the Department of Fish and Game has no permit requirements pose a greater hazard than would captive grouse.

Avian cholera has been reported in ruffed grouse and red grouse, as well as grey partridge, ring-necked pheasants and California valley quail. However, among wild bird populations, avian cholera has occurred in epornitic form only in waterfowl (Rosen, 1971).

Pasturella multocida, the causative organism of avian cholera, is enzootic in chickens and turkeys virtually world wide (Heddleston, 1972) and in at least some migratory waterfowl populations of North America (Rosen, 1971). In view of the fact that many of the ducks, geese and swans that have survived the periodic avian cholera epornitics that have occurred in California over the past 40 years undoubtedly have dispersed across much of Alaska, it would not be unreasonable to suggest that avian cholera is re-introduced into the State every spring by thousands of infected migratory waterfowl.

In any event, there is little question that any risk of introduction of avian cholera by captive grouse pales in significance compared to the potential presented by captive chickens and turkeys, migratory waterfowl, and captive birds for which the Department has no permit requirements.

Although approximately 20 serotypes of mycoplasma have been isolated from birds, not all of these are significant pathogens (Yoder, 1972). In fact, mycoplasma tend to have narrow host ranges with each having only a few closely related hosts (Gerlach, 1986).

Mycoplasma gallisepticum causes chronic respiratory disease in chickens and turkeys, and has been isolated from natural infections in pheasants, chukar partridge, a peafowl, and bobwhite (Yoder, 1972). Transmission is by direct contact with infected birds or air borne dust or droplets (Yoder, 1972).

Mycoplasma meleagridis causes airsacculitis in turkeys and is enzootic in virtually all commercial turkey flocks (Yamamoto, 1972). Because the disease is transmitted primarily through eggs, the potential for transmission to other species, even if they were susceptible, is very limited.

Mycoplasma synoviae causes infectious synovitis in chickens and turkeys, which are its natural hosts, but pheasants and geese have been infected experimentally (Olson, 1972). Transmission is by direct contact (Olson, 1972).

Because of their limited host ranges, the low pathogenicity of many serotypes and the close contact required for transmission, the potential for avian mycoplasma to be introduced into wild bird populations and causing significant disease problems appears to be quite limited. This would appear to be especially true in the case of grouse populations which tend to be dispersed over large areas.

Gapeworms (Syngamus trachea) occur most commonly in Galliformes and Passerformes (Wehr, 1971). Young turkeys, chickens and game farm pheasants are the most susceptible (Wehr, 1972). Consequently, if any conclusion is to be drawn from this example of a disease problem associated with captive birds, it would have to be that chickens, turkeys and pheasants are at least as great, and probably greater, potential source than captive grouse would be.

Leucocytozoon bonasae is the most widely distributed blood parasite among grouse species, and includes among its host species ruffed grouse, spruce grouse, sharp-tailed grouse, rock ptarmigan and willow ptarmigan (Cook, 1971a). Infection rates as high as 100 percent have been reported in ruffed grouse in Minnesota, 86 percent in ruffed grouse in Wisconsin, and 95 percent in sharp-tailed grouse in Michigan (see Cook, 1971a). However, parasite levels typically are low and illness apparently is rare (Cook, 1971a).

L. mansoni occurs in capercaillie, black grouse and hazel grouse in Sweden but causes no significant mortalities (see Cook, 1971a;Lund, 1972a). Plasmodium and Haemoporteus infections have been reported in ruffed grouse but were not pathogenic (Cook, 1971b;Lund, 1972a).

Natural transmission of these blood parasites is by biting insects. Because these parasites tend to be enzootic and nonpathogenic in wild grouse populations, captive propagation of native grouse species poses no significant risk for introducing these diseases. The potential for L. mansoni to cause disease in North American grouse should be determined, however, before undertaking captive propagation of capercaillie, black grouse or hazel grouse, except in facilities where biting insects are excluded.

Histomoniasis, or blackhead, is an intestinal infection of turkeys, chickens and certain other gallinaceous birds caused by the protozoan, Histomonas meleagridis. The protozoan parasite is transmitted in the eggs of the cecal worm, Heterakis gallinarum, which, in turn, are transmitted through earthworms (Lund, 1972b). Histomoniasis has been reported in ring-necked pheasants, ruffed grouse, greater prairie chickens, peafowl, guinea fowl, chukar partridge and peafowl (see Lund, 1972b). Chickens and pheasants are the most dangerous sources of histomoniasis (Lund, 1972b),and they represent a significantly greater potential for introducing histomoniasis into wild bird populations than would captive grouse propagation operations.

Different strains of avian poxvirus appear to be adapted to different species or groups of species of birds (Karstad, 1971). Transmission is by direct contact or insect vectors (Karstad, 1971).

> "Most reports of pox in wild birds have indicated that the disease is mild and self-limited." (Karstad, 1971)

although extensive losses have occurred in captive pheasants (Karstad, 1971).

Because avian poxviruses are prevalent world wide in a large variety of birds, including migratory species, it is doubtful that captive propagation of grouse would significantly increase the potential for introduction of the virus into wild populations, and certainly would have no more potential than the captive propagation of other species, such as pheasants.

Although not included in the list of diseases of captive birds provided by Dr. Friend, it should be noted that others, including ulcerative enteritis and western and eastern equine encephalitis, as well as coccidiosis, have been reported in grouse. Ruffed grouse, sharp-tailed grouse and blue grouse, as well as grey partridge, chukar partridge, wild turkeys and pheasants, are susceptible to ulcerative enteritis, or quail disease (Peckham, 1972). The disease also occurs in young chickens and turkeys, and is widespread throughout the poultry industry (Peckham,1972). Transmission occurs through fecal contamination and the disease is more prevalent under conditions of overcrowding and poor sanitation (Peckham, 1972). As with the diseases discussed above, as well as with equine encephalitis and coccidiosis, other species present as great or greater potential sources than captive grouse.

In evaluating the concerns of the director of the U. S. Fish and Wildlife Service's National Wildlife Health Center for captive birds introducing diseases into wild populations, it is instructive to consider the Service's proposal to establish a National Wildlife Refuge, which is expected to attract 20,000 waterfowl, in an area where 18 million domestic turkeys will be produced. As the enclosed copy of a report in the April, 1988, Wildlife Disease Association "Wildlife Disease Newsletter" explains, the U. S. Fish and Wildlife Service appointed an Avian Disease Task Froce to evaluate the potential that the refuge would pose to the poultry industry for introducing diseases (Supplement--Journal of Wildlife Diseases, Vol. 24, No. 2). The Task Force concluded that establishment of the refuge would increase the risk of transmission of infectious disease agents between wild waterfowl and domestic poultry, but that the risk to domestic poultry would be minimal.

In view of the facts that (1) avian cholera is a common disease problem in in commercial turkey operations (Heddleston, 1972) and (2) avian cholera has been known to occur in major outbreaks in wild waterfowl with losses of tens of thousands of birds (Rosen, 1971), the concern over the potential for disease introduction into wild populations by captive grouse appears inconsistent with the U. S. Fish and Wildlife Service's proposal to establish a major waterfowl refuge in an area where millions of turkeys are being raised in captivity. Certainly, if a relatively few grouse propagated in captivity pose an unacceptable threat to Alaska's wildlife, then 18 million turkeys propagated in captivity would pose an unacceptable threat to a National Wildlife Refuge.

The preceeding discussion is not to suggest that there should be no concern about diseases in captive gamebirds. Indeed, the Alaska Gamebird Association has as great an interest in maintaining healthy captive birds as does the Alaska Department of Fish and Game.

Rather than prohibiting the captive propagation of certain species because of a lack of information on the disease risk, a more constructive approach would be to establish procedures to assure that the captive propagation of those species is carried out in a manner that will minimize any disease risks, and, at the same time, provide objective information on the health status of the birds.

In this regard, it should be noted that Dr. Friend does not recommend that captive propagation of wildlife be prohibited, but only that it be done with proper consideration for "disease implications." Consequently, he recommends that "wildlife species should not be transferred from one location to another without adequate health testing and certification." He lists several reasons why this is not routinely done, and then outlines what he considers to be the,

> "Minimal requirements to evaluate disease potential and minimize the potential for disease introductions. . ."

These requirements include:

1. Health inspection involving laboratory testing for disease agents of concern.

2. Health certification of wildlife being imported into the state.

3. Testing of wildlife raised in confinement under conditions that allow for direct contact or indirect exposure of indigenous wildlife to feces, urine, or environments used by captive wildlife.

4. Monitoring of causes of illness and death in captive wildlife.

5. Authority to take appropriate actions when serious disease problems are encountered.

In view of the fact that the Alaska Department of Fish and Game is relying, at least on part, on Dr. Friend's comments, it would appear appropriate for the Department to consider implementing his recommendations for minimizing the potential for disease introductions by captive gamebirds.

I would suggest, therefore, that the Alaska Gamebird Association propose to the Alaska Department of Fish and Game that a committee be established, with representatives from the Association, the Department of Fish and Game, the Alaska Department of Agriculture, and independent authorities on diseases of birds, to develop specific requirements to be met by those to whom permits are issued for captive propagation of grouse and other gamebirds.

This committee should identify the disease agents of concern and develop an objective evaluation of the risks posed by each. Health inspection procedures and criteria and specific laboratory testing procedures, where applicable, should be outlined.

Health certification criteria for wildlife being imported into the State should be developed, and testing procedures for wildlife raised in confinement should be established.

Procedures for preventing direct contact with indigenous wildlife to feces, urine or environments used by captive wildlife should be specified, and the criteria under which they are to be implemented should be defined.

Procedures for maintaining records on all birds being held by captive propagators should be outlined. Requirements should be established for submitting all mortalities to approved diagnostic laboratories, perhaps with copies of the laboratory reports being sent to the Department of Fish and Game.

Procedures to be followed by propagators and the Department of Fish and Game in the event of "serious disease problems" should be outlined, including criteria for determining what actions are appropriate and when they are to be taken. Authority for the Department of Fish and Game or the Department of Agriculture to take specific actions could be established by statute, as Dr. Friend suggests, or as a condition of issuance of the permit.

A positive and constructive approach such as this would not only provide a factual basis upon which to evaluate the potential for introduction of disease agents by captive gamebirds, thus providing the information that both the Department and Dr. Friend cite as currently unavailable, but would protect Alaska's native wildlife populations against such introductions. In addition, it would truly permit all citizens of Alaska, including aviculturists, to benefit from interaction with interesting birds such as grouse.

Sincerely,

Gary L. Pearson

Gary L. Pearson, D.V.M.

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December 11, 1987

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Wasilla, Alaska 99687

Dear Judy:

Your letter arrived yesterday and I was quite surprised to learn of the Alaska Fish and Game's opposition to the keeping of grouse in captivity. I have always found the department rather progressive and quick to realize the benefits of the conservation efforts of the aviculturist. Certainly every effort must be made to get them to relax their position and allow captive grouse breeding in Alaska where there is a greater potential for success than in any other climate in the United States.

Grouse are one of our most abundant game species and we know next to nothing about maintaining or breeding them in large numbers if there was ever a need to restock an area. Captive propagation affords the opportunity to study a species year round when it is often impossible to do it in the wild. Techniques must be developed especially in the area of disease control and stress reduction. It is unlikely that this effort will be put forth by an institution or government agency because grouse are not a highly visible species nor are the threatened or endangered. The private avicutural community is the logical place to develop the necessary techniques and to add to the collective knowledge of this beautiful and fascinating family of birds. We must learn as much about them as possible while they are still abundant.

In reviewing the three concerns expressed by Alaska Fish and Game and mentioned in your letter I would offer the following response:

1) <u>Potential for spread of disease and parasites from captive birds</u> - In considering the spread of contagious disease it would first be necessary to establish which ones are possible in Alaska's environment. Normally diseases that are prevalent

in captive flocks of game and other birds would not survive your winters. Pullorum has been essentially elimated by the National Poultry Improvement Plan and it would only be necessary to do a simple annual test to ensure that it did not exist. Avian tuberculosis would require large concentrations of wild birds on a small area for transmission which is not probable due to limited food supply. Some parasites like gapeworms could not winter over. Coccidiosis for example has been identified in wild populations already it isn't until you bring a bird under stress that it causes a problem. Migratory birds would be a much more likely reservoir of disease and Alaska certainly has more than their share of those. The fact that grouse do not cover large areas as they forage for food would also be a factor to consider. You need to develop a list of diseases of concern and address them on an individual basis. It maybe necessary to develop some periodic testing requirements to address specific concerns once they are identified. Get your state veterinary involved to add some credability to your argument. There have been few if any disease outbreaks that have been traced to an aviculturist's flock.

2) Remote possibility that an escaped bird would hybridize with the native stock - There are numerous examples in nature of more than one species of closely related birds existing in the same habitat with no known hybridization. This is true in pheasants, quail, grouse and waterfowl. Hybridization usually occurs in a captive situation when birds with no opportunity to mate with their own kind are forced together. There is no reason to believe that one escaped grouse would even survive the rigors of the Alaska winter much less find a wild bird of a different species that would accept it as a mate.

3) Compete with native grouse for food and nesting areas - Captive diets are generally quite different from a grouse's wild food source. Unless a concerted effort was made to provide and teach a bird to utilize the wild food source it would not survive long enough to learn. Certainly this has been demonstrated by the numerous unsuccessful attempts to re-establish the wild turkey to its former range by releasing captive reared poults. These birds had been conditioned for release but still died from starvation once winter weather set in.

I hope you find this dialogue of some value in convincing the Alaska Department of Fish and Game that the value of captive grouse propagation as a conservation tool far surpasses the threat that they might offer to a wild population. I have enclosed an article that I wrote just two years ago about the value of the private aviculturist. In that two years, if you consider just the species mentioned, the dusky seaside sparrow has gone extinct and there are no California condors left in the wild. In the case of the sparrow we waited to long to turn it over to aviculture in a salvage attempt and in the case of the condor we may have argued about it to the point that it is too late. Compare the plight of these two species with the success stories of the Nene goose, the masked bobwhite, the peregrine falcon and the Laysan duck which are alive and in good numbers today because of the efforts of private aviculture. It would seem a shame that some grouse species should follow the fate of the dusky seaside sparrow for lack of access to them while they are still plentiful.

Please use this letter and the enclosed article as you see fit. I have ask Wendi to publish your letter in our next newsetter with a brief note calling for individual response from our members.

Sincerely,

Walter B. Sturgeon, Jr.

Walter B. Sturgeon, Jr.

cc: Wendi Schendel
Paul Dye

Aviculture under attack

by Walter Sturgeon

Editor's Note:

Walter Sturgeon is the First Vice President of the International Wild Waterfowl Association. He maintains a fine waterfowl collection at his Lee Ridge Aviaries, R.F.D. #1, James Farm Durham, NH. He utilizes this collection as a research center, as well as for propagation purposes. He and his staff have done considerable research related to the problem of Aspergillosis in northern waterfowl.

Walter has participated in several Arctic expeditions to collect various species of waterfowl for preservation and propagation purposes.

The article which Walter here presents is in defense of an activity dear to our hearts. This though-provoking material will be useful to us all during difficult times which may lie ahead.

****

I am indebted to Dr. James W. Carpenter and Dr. Scott R. Derrickson whose paper entitled, "The Role of Captive Propagation in Preserving Endangered Species," provided the framework for this article. Both are at the forefront of defending the maintenance of captive populations of birds and the collections they manage at Patuxent Wildlife Research Center and the National Zoological Park's Conservation and Research Center are fine examples of what can be accomplished by aviculture.

W. Sturgeon

****

Aviculture plays a important role in the conservation of wildlife. It is ironic that this technique which is finding increased acceptance as a tool to help preserve rare and endangered species is currently under attack. Our right to pursue this advocation is being jeopardized by a small minority of people who do not or do not want to understand the role of captive maintenance and propagation. This article is offered as an aid to those who find themselves defending their rights through the press or at a public hearing.

There is no need to explain what is happening to our world in such areas as population increases; loss of wildlife habitat; environmental pollution; hunting pressure; famine; native subsistence; war; the introduction of exotic species; and advances in transportation technology. All of these have taken their toll on wildlife species - both plant and animal.

Current estimates suggest that from one half to 2 million species or 5 to 25 percent of all existing life forms may become extinct by the turn of the century. This reduction in biological diversity is one of the major problems facing many and it will ultimately cause a decrease in the quality of human life.

Man is waking up to these awesome prospects and is starting to react with a number of worldwide programs designed to slow this loss. Most of the effort to date has been in the preservation of threatened and endangered species but it has a beneficial impact on all wildlife.

The efforts have resulted in legislation, hunting restrictions, treaties, increased law enforcement, better habitat management and acquisition, control or environmental pollutants, public education, additional research and federal, state and private conservation programs. All of these efforts are in the hope that we are not too late to have a significant impact.

Aviculture is another technique that is finding increased acceptance as a valid conservation strategy. Captive propagation offers an attractive reinforcement to the complex task of habitat preservation and provides an immediate opportunity to preserve options until limiting factors can be identified. As a conservation technique, captive propagation of threatened and endangered species can complement or enhance conventional research and management practices. There are at least four ways that this is currently done:

During periods of high risk to a particular species captive propagation can be used to preserve genetic variability. The maintenance of representative genotypes in captivity can prevent the indiscriminate loss of valuable genetic variation. Some of our leading zoos are presently cooperating in a program they call a Species Survival Project.

This program is designed to maintain 90 percent of the genetic variability of a particular species for 200 years. The program involves a computer program, a species coordinator, and the known history of the specimens made available to the program. If the number of specimens is low, then it is necessary to get them breeding and a large number of offspring must be maintained to meet the program objectives.

The earlier you get started on a target species, the fewer number of total birds that must be maintained. Key elements in the program require stock procurement from the wild before populations reach critically low numbers in order to (1) minimize the impact of removing individuals from the wild population, (2) maximize the genetic diversity, and (3) secure enough animals to form a viable captive breeding program. Current examples to SSPs include White-naped and Manchurian Cranes, Bali Mynah, Guam Rail and Micronesian Kingfisher.

Captive propagation can produce stock for study to yield information useful in managing wild populations. The identification of basic biological, behavioral and ecological characteristics usually require intensive scientific study. In many instances, study that would be difficult if not impossible to undertake in the wild can be conducted under the controlled conditions available in captivity.

The Arctic and Antarctic regions are examples of inhospitable and

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aviculturist and anyone else who keeps wild animals in captivity by various animal protection organizations. They are generally opposed to the keeping of any wild animal and many extend this to public institutions as well as private facilities.

Their efforts, aimed at state legislatures, tend to be a grass roots type approach to a representative who is sympathetic to their cause, and depend on a large part to public apathy to slip it into law. Often respected organizations like Audubon and Friends of Animals are involved and people automatically accept anything they might endorse.

I would hope that everyone is opposed to cruel and inhumane treatment of any living thing and I don't deny that examples of wild animals kept in captivity result in just that, but they are infinitesimal in comparison to the number of animals that are well kept.

Efforts currently underway involve restricting the importation of birds and animals, placing restrictions on transportation of birds across state lines without proof of their captive origin, and specification of size and type of enclosure being used to house animals. These will represent additional layers of legislation and are counter productive to our efforts to preserve the maximum number of species possible. **Current laws are sufficient to control abuse and what is needed is adequate enforcement of them.**

I hope this article will give you a framework in which to defend our right to continue with our efforts. As a participant in this effort you are in a position to defend captive-propagation without any more strings attached and should be alert to these restrictive proposals if and when they arise.

I would like to leave you with one thought that is often used when discussing this subject:

"The beauty and genius of a work of art may be reconceived, though its first material expression be destroyed; a vanished harmony may yet again inspire the composer; but when the last individual of a race of living beings breathes no more, another heaven and another earth must pass before such a one can be again."

William Beebe
(1877-1962)

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inaccessible regions during most of the year, and to overcome this probably the most elaborate controlled condition facility for birds was built at Sea World in San Diego. There they are studying penguins, alcids, and other related species and are breeding most of them.

Surrogate species are often used in the case of severely endangered species for the initial research. Examples of surrogate species research are the work being done with the Andean Condor, itself a threatened species, for the California Condor and use of the abundant Greater Sandhill Crane for the Whooping Crane.

A third way is **producing stock for release in the wild.** Techniques and methods for releasing captive-reared offspring are being developed for a number of species. They are currently being employed to bolster, restore, or establish wild populations.

Techniques such as foster parenting by using a surrogate species to hatch and rear offspring from captive produced eggs are being used in Idaho to establish a second flock of Whooping Cranes and will soon be used in Asia utilizing the Common Crane for some of their rarer forms.

Egg swaps have been used to overcome DDT egg shell thinning problems in birds-of-prey such as the osprey and the eagle. Hacking stations have resulted in successful release of Peregrine Falcon. Soft release programs have been used to gradually release the Nene Goose in Hawaii, Andean Condor in South America, Mississippi Sandhill Crane to its home range and the Masked Bobwhite to the Southwest.

Most of the birds mentioned are non-migratory which makes the prospects better for their successful release. Migratory birds such as the Aleutian Canada Goose have been successfully released and have migrated but losses have been high.

Aviculture can also play an important role in producing birds for public education. In maintaining a species in captivity for research and propagation, more animals than are needed for transplanting are often produced. By loaning these excess animals to zoological parks and other institutions, public awareness of endangered species research and conservation efforts can be greatly enhanced. Visitors to your aviaries each year can help in this public awareness effort and I would encourage you to make your facilities available on an informal basis for this purpose.

Captive propagation can also effectively complement existing research and management programs in several ways. **In most instances, obtaining stock from the wild has little or no impact on the productivity of the wild population.** Animals that are wounded, injured, or for some other reason unable to survive in the wild can be maintained in captivity without reducing the size or gene pool of the wild population.

At the present time I am maintaining a flock of Atlantic Brant that were injured off the coast of New Jersey during their southern migration. These birds, along with a few captive-bred young, will hopefully be a big enough colony to allow us to become only the second place in the world to breed this species.

In some species such as cranes, a second egg can be removed from the nest since it is there as an insurance policy against loss or failure of the first one to hatch. This egg is usually

abandoned or if it hatches, the stronger chick will kill the weaker due to sibling rivalry. This technique, practices for some 20 years, has effectively doubled the number of Whooping Cranes in existence today.

The Brown Pelican has been reintroduced to much of its former range with the use of injured birds that are incapable of flight. The injured birds are set up in a protected area such as a city park and induced to breed. The young birds are reared by their parents an once fledged are allowed to come and go as they please. Eventually this soft release program results in colonies being set up nearby and a successful re-establishment. Other species which re-nest or customarily lose a substantial number of eggs or young can have their nest robbed with little impact.

Captive propagation can also be an effective insurance against extinction in species where the extant population is small or where conventional management practices have proven ineffective in preventing further species decline. Some of the present species that their last hope seems to be in captive propagation are the California Condor, Guam Rail, Micronesian Kingfisher, and the Dusky Seaside Sparrow.

In the case of the sparrow only three males currently exist and a program to cross breed these birds to females of a closely related species has not worked well due to the advanced age of the males. This species will undoubtedly become the next North American bird to become extinct.

The Pink Pigeon from the island of Mauritius has been saved by taking it into captivity to protect it from monkeys introduced to the island who predate their eggs. Once the monkeys are removed it will be reintroduced. A similar story with the Aleutian Canada Goose saved this species from the Arctic Fox.

Captive birds are more productive than their wild counterparts. The life expectancy of birds in captivity is much greater than in the wild because of protection from predators, disease and accidents and as a result of good husbandry practices. By increasing their life expectancy and increasing their annual production through various manipulative techniques both annual and lifetime productivity can be increased many fold.

Photoperiod adjustment in cranes has resulted in as many as six clutches of eggs in a single season from Whooping Cranes at Patuxent Wildlife Research Center. At my own facility we have induced a pair of Greater Sandhill Cranes to lay five clutches by removing their two egg clutches shortly after the second egg wa laid.

Captive propagation can also allow for selective pedigree breeding which is very important. Captive populations can play an important role as reservoirs for preserving and infusing genetic diversity into wild stocks. Egg transplant is an effective way of introducing new blood.

Artificial insemination is often used to overcome a lifetime pair bond between birds that you might want to produce young with another mate. AI can also be used to mate birds that are injured and incapable of breeding or to mate birds imprinted on humans or other birds of a different species. Cryogenics is being used at Patuxent to preserve crane semen for use on later generations.

The private aviculturist can play an important role in maintaining bird species. Zoos and other public institutions numbering about 170 in the United States can reasonably maintain about 30,000 birds. Private aviculturists keep at least 10 times this number or 300,000.

Private aviculturists have done a particularly good job with two groups of birds, pheasants and waterfowl, and have without institutional help saved several from extinction. They are currently concentrating significant resources on psittacines and have made breakthroughs by breeding many of the rare forms.

However, some of the most abundant species are not well established in captivity even though they have been maintained for years. Other species that are abundant are next to impossible to keep alive under captive conditions for even a short period of time. Examples of the former include the Atlantic Brant and the Red-breasted Merganser, while the latter species include the old Squaw, the Stellars Eider and the Loon. We must learn what is required to propagate them while they are abundant and this is left up to the private aviculturist because the other institutions feel they must put their resources into threatened and endangered varieties.

The private aviculturist has one extremely important thing to offer and that is dedication. He works long hours to provide for his bird's needs and by living with his birds he is available 24 hours a day to observe their habits and to respond to any emergency. Zoos and other public institutions are staffed by many extremely dedicated and capable individuals who generally have experience and good technical background. These individuals are often hampered by lack of qualified support personnel and funds, their priorities are established by some commercial manager of the facility, facility maintenance is done under someone else's direction, and they are dependent on other personnel such as security to deal with emergencies that arise during off hours. As a result they often do not achieve the results obtained by the private aviculturist.

The permit process and the political aspects of obtaining rare species have always favored public institutions but capable private aviculturists are getting increased access to the birds. Private individuals are beginning to participate in the various SSPs and studbook programs. Once a zoo recognizes your capabilities and the extent of your dedication to a particular project, they will consider you an additional resource and will encourage your participation.

The bottom line is that without the private aviculturist there are not enough facilities, staff and funds available for maintenance of all the world's currently threatened or endangered birds.

Aviculture is currently under attack in this country and our very right to use this tool is in jeopardy. There is a lot of pressure being brought on the

AMERICAN PHEASANT & WATERFOWL SOCIETY

LLOYD R. URE
Sec.--Treas.
Route 1
Granton, Wisconsin 54436

December 28, 1987

AGA Legislative and Regulation Committee
c/o Judith Rivard
P.O. Box 871841
Wasilla, Alaska 99687

Dear Mrs. Rivard:

I am writing in support of the Alaska Gamebird Associations stand on keeping and raising all species of the order galliformes. This should include all sixteen species of Grouse (Tetraoninae).

As Secretary-Treasurer of a large international game bird organization for the last twelve years, I have seen great progress in the saving of endangered species and keeping large numbers of endangered species alive by captive propagation.

To not allow the Alaskan aviculturists to keep the sixteen sepcies of Grouse, would be a severe setback on the progress being made on rearing and keeping Grouse and other game birds. The last two years have seen the first breeding in captivity of both the Rock Ptarmigan and Hazle Grouse.

In my years of corresponding with game bird breeders around the world, I have not heard of one instance where an escaped bird carried any diseases to a wild flock.

A captive reared bird would not know how to find food or how to defend itself from predators and would almost certainly die before it could breed.

I would strongly urge the Alaska Department of Fish and Game to allow the Alaska Aviculturist to keep all sixteen species of Grouse in captivity.

Sincerely,

Lloyd Ure

Lloyd Ure

WASHINGTON
ORNAMENTAL and GAME BIRD BREEDERS

December 23,1987

Alaska Gamebird Association
Legislative and Regulation Committe
c/o Juith A. Rivard
P.O.Box 87141
Wasilla,Alaska 99687

Dear Judith,

The game bird breeders of Washington have had the same problem with the Washington State Department of Wildlife.There reasons for not letting us have a permit were,(1) that if every licensed breeder took advantage of his permit to capture a pair of grouse, they would take to many from the wild,(2) a grouse that has escaped from captivity could possibly carry disease and parasites to the native stock,(3) there is a remote possibility the escaped bird would hybridize with the native stock, and (4) the escaped grouse would compete with the native stock for food and nesting areas.

The Department of Wildlife had no grounds for these reasons because no one was raiseing grouse in captivity. Now that they have given us permission to raise grouse,there reasons are gone. No one has depleted the grouse population by capturing wild grouse. I raise grouse and keep in touch with the other breeders who raise them and never have I heard one of them tell of looseing one to the wild. We have a few rules and regulations that we have to fallow. But no one seems to have any problem living with them. The Department of Wildlife seems to be happy.

As for turning captive birds into the wild, Washington Ornamental & Game Bird Breeders have a program with the Department of Wildlife. They buy us Mountain Quail eggs. We hatch them and raise the birds. Then we turn the birds over to them to be released into the wild. For the purpose of restablishing them in the wild.I think this speaks for itself.

Sincerely,

Tom Buchwalter

Tom Buchwalter
President,
Washington Ornamental & Game BirdBreeders

GAME BIRD FARMING OF GROUSE AND PTARMIGAN

BACKGROUND

Game farming, by definition, means the business of propagating, breeding, raising or producing game in captivity for the purpose of marketing the game or its products. By logical extension, game bird farming includes commercial use and commerce in any of a number of game birds. Where such use involves possession, sale, and purchase of live animals, state regulations limit the farmer/breeder to species listed under 5 AAC 92.029, so-called "domestic" species, for which no permit is required from the Alaska Department of Fish and Game (ADF&G).

During the March-April 1987 meeting of the Board of Game (BOG), the list of "domestic" species was expanded to include all species of turkey, pheasant, junglefowl, guinea fowl, quail, bobwhite, and peafowl, in addition to the chukar partridge. A companion proposal also passed that would authorize commercial uses of additional species under terms of an Aviculturist Permit issued by the ADF&G (5 AAC 92.028). These species include the capercaillie, some partridges, as well as the families of megapodes, curassows, sand-partridges, and francolins. Although unanimously adopted by the BOG, the Department of Law did not file the proposed regulations because they had been "improperly noticed." The Commissioner of ADF&G re-noticed these proposed regulations for adoption by delegation. The period of public notice recently ended, and the Notice of Adoption was sent to the Department of Law for filing.

The changes in proposed regulations are being accomplished at the request of the Alaska Gamebird Association (AGA), with the approval of the BOG, and with concurrence of the ADF&G. As filed, the proposed regulations represent a compromise and do not accomplish everything originally sought by the AGA.

ISSUE

Two primary points of disagreement remaining between the ADF&G and the AGA include whether aviculturists should be allowed to capture and possess native grouse for private or commercial use and whether exotic (i.e., non-indigenous) species of grouse should be imported and used for private, commercial purposes. By "grouse," the AGA means members of the subfamily Tetraoninae, including grouse, ptarmigan, sage hens, and prairie chickens. Concerns of the ADF&G, Department of Public Safety, and BOG regarding "grouse" farming relate to the privatization of wildlife, enforcement problems, and potential impacts on Alaska's wildlife. The following discussion is limited to biological concerns.

birds, waterfowl, and poultry. In what appears to be an unrelated incident, 120,000 game birds in Oregon were destroyed in 1986 after being infected with avian influenza. Due to the complexity of the marketing system for these birds and the spread of infection from live birds as well as contaminated pens, crates, and equipment, the cost and difficulty of control are compounded. From a wildlife management perspective, the most disturbing factor in these recent events is the presence of avian influenza viruses in game bird species.

Disease transmission between native and commercial stocks can be a two-way street. Mycoplasmosis in turkeys is a good example of a disease that has been introduced into new populations of wild birds as a result of captive rearing and relocation of wild trapped birds. This bacterial disease is found in various wild strains of turkeys (all of which may be imported into Alaska without ADF&G permits). If this infection is transmitted to domestic poultry stocks, the financial consequences to the industry will far exceed the benefits likely to be derived by a limited number of small-scale aviculturists or game bird farmers.

The question of whether birds that have escaped or been released can survive in Alaska could be less important than whether they live long enough to transmit disease. Because most exotic grouse, as opposed to quail or pheasants, are native to northern Eurasia, such birds may have a greater potential for survival in Alaska and possibly for transmitting diseases from captive flocks to wild ones. It is important to recognize, however, that many diseases are spread by insect vectors and through contamination of environments. Therefore, long-term survival of birds that escape or have been released is only one aspect of disease considerations. For example, mosquitos feeding on captive-reared birds that have a disease agent circulating in their blood can transmit that disease to susceptible wild bird populations (of the same or other species) if they feed on those birds. Also, use by wild birds of soils and wetlands contaminated by the body discharges of infected birds can result in disease transmission, even though no direct contact occurs between the captive and wild bird populations. Examples include wild birds feeding in fields where bird manure and litter have been spread and the drainage of contaminated waste water or run-off from confinement facilities into a wetland.

Health considerations must include types of diseases as well as method of transmission. Old world grouse have the potential to introduce pathogens to geographically isolated and "naive" Alaskan populations, which may have evolved in the absence of those disease organisms and therefore may be more vulnerable to them. Physiological differences in these

a direct consequence and goal of private ownership, can result in lower reproductive potential, loss of genetic vigor, decreased disease resistance, and reduced survival of wild birds.

In North America, the bobwhite has been transplanted and re-introduced in many areas--not always with welcome results. The less robust southern variety has been introduced into northern areas where it readily crossed with the heavier and sturdier northern stock. The resulting offspring were both smaller and weaker than the original stock and less well equipped to cope with prevailing conditions.

The extent to which natural hybridization between native and exotic birds would occur in Alaska is unknown. However, sharp-tailed grouse are known to cross readily with prairie chickens, and willow and rock ptarmigan cross with black and hazel grouse. Because these species are not sympatric (i.e., occur in different geographic areas), geographic isolation rather than physiological or behavioral factors may well be an important factor preventing hybrids. The likelihood of crosses among different races or subspecies of the same species is even greater, for example, between willow ptarmigan and European red grouse. Natural sympatry would, of course, be lost if exotics were allowed into the state.

The variability among regional populations of mammals and game bird species in Alaska is a reflection of evolved traits that enhance survival in local environments. Human activities that result in the manipulation of gene pools or introduction of exotic stocks may reduce the fitness of native populations. As with fisheries, the values of Alaska's native game populations rely on the maintenance of healthy wild stocks. Unlike fisheries, natural reproduction is the sole source of wild game stocks, and unnecessary interference should be discouraged.

Introduction of Exotics

The AGA points to the historic failure of all introductions of game bird species into Alaska as evidence that the ADF&G's concerns regarding the establishment of exotic species are exaggerated. Following five failed attempts, some skeptics may have felt the same way about the sixth effort to introduce starlings to New York's Central Park. Few people could have forseen that starlings would colonize the continent, cross the Arctic Circle, and establish breeding populations in Alaska. As for game birds, no known efforts have been made to introduce non-native species of grouse to Alaska. Most grouse, as opposed to quail and pheasants, are native to habitats and climates similar to

CORRECTION

THIS DOCUMENT
HAS BEEN REPHOTOGRAPHED
TO ASSURE LEGIBILITY

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POTENTIAL IMPACTS ON ALASKA'S WILDLIFE

Alaska is unique among the states and extremely fortunate to retain nearly all of its native fauna and flora in their natural diversity and abundance, with little contamination from outside sources. Contributing to this condition are Alaska's geographical isolation, the state's relatively recent growth in population and development, luck, and, increasingly, conservative policies and regulations governing the introduction and importation of exotic animals.

Major concerns relating to possession and importation of non-indigenous birds of holarctic and nearctic origin (i.e., from arctic and temperate latitudes) include transmission of diseases and/or parasites, introduction of species that could compete with or displace native avifauna, and potentially negative consequences of hybridization.

Health Considerations[1]

The problems of breeding and propagating grouse in captivity are much greater than are those of pheasants, quail, and commercial poultry. This is due in part to a high susceptibility by grouse to various diseases and parasites This condition may be enhanced in tetraonids, which are apparently less adaptable to captivity. The "stress" of confinement can contribute to the sensitivity of these birds to disease and may explain why grouse trapped from the wild sometimes experience more disease problems than other game birds reared in the same facilities.

Commercial breeders are likely to be the major source of grouse for Alaskan aviculturists. Infectious diseases are relatively common in commercial wild bird operations due to a lack of health certification within the industry, environmental conditions that facilitate the transmission and maintenance of disease agents once they have been introduced, and inadequate disease diagnosis and control programs. Following importation to Alaska, diseased birds from a single source could result in widespread and costly contamination of both commercial and wild bird stocks.

In 1983-84, an outbreak of avian influenza that occurred in the poultry industry in New England was finally eradicated at a cost of nearly $65 million. In 1986, the same influenza virus broke out again in Pennsylvania among farmed game

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[1] The ADF&G is grateful to Dr. Milton Friend, Director, National Wildlife Health Center, for reviewing and providing helpful comments on the "health considerations" portion of this issue paper.

birds, waterfowl, and poultry. In what appears to be an unrelated incident, 120,000 game birds in Oregon were destroyed in 1986 after being infected with avian influenza. Due to the complexity of the marketing system for these birds and the spread of infection from live birds as well as contaminated pens, crates, and equipment, the cost and difficulty of control are compounded. From a wildlife management perspective, the most disturbing factor in these recent events is the presence of avian influenza viruses in game bird species.

Disease transmission between native and commercial stocks can be a two-way street. Mycoplasmosis in turkeys is a good example of a disease that has been introduced into new populations of wild birds as a result of captive rearing and relocation of wild trapped birds. This bacterial disease is found in various wild strains of turkeys (all of which may be imported into Alaska without ADF&G permits). If this infection is transmitted to domestic poultry stocks, the financial consequences to the industry will far exceed the benefits likely to be derived by a limited number of small-scale aviculturists or game bird farmers.

The question of whether birds that have escaped or been released can survive in Alaska could be less important than whether they live long enough to transmit disease. Because most exotic grouse, as opposed to quail or pheasants, are native to northern Eurasia, such birds may have a greater potential for survival in Alaska and possibly for transmitting diseases from captive flocks to wild ones. It is important to recognize, however, that many diseases are spread by insect vectors and through contamination of environments. Therefore, long-term survival of birds that escape or have been released is only one aspect of disease considerations. For example, mosquitos feeding on captive-reared birds that have a disease agent circulating in their blood can transmit that disease to susceptible wild bird populations (of the same or other species) if they feed on those birds. Also, use by wild birds of soils and wetlands contaminated by the body discharges of infected birds can result in disease transmission, even though no direct contact occurs between the captive and wild bird populations. Examples include wild birds feeding in fields where bird manure and litter have been spread and the drainage of contaminated waste water or run-off from confinement facilities into a wetland.

Health considerations must include types of diseases as well as method of transmission. Old world grouse have the potential to introduce pathogens to geographically isolated and "naive" Alaskan populations, which may have evolved in the absence of those disease organisms and therefore may be more vulnerable to them. Physiological differences in these

species may be an effective barrier against infection by some diseases and parasites. However, exposure of "naive" Alaskan populations to pathogens present in similar species imported into the state could be especially devastating. Even within the state, many disease agents may exhibit varying degrees of virulence among discrete populations of essentially non-migratory game birds. One way to minimize the risks of disease transmission and epizootics is by continuing to restrict importation of exotic species and private use of Alaska's native game birds.

It was just this concern and the experience of the Pacific Northwest with disease transmission resulting from indiscriminate mixing of fish stocks that prompted the Board of Fisheries and the ADF&G's Division of Fisheries, Rehabilitation, Enhancement, and Development (FRED) to develop policies prohibiting transplants, introductions, and mixing stocks of native Alaskan fish in order to prevent the spread of disease and maintain genetic variability.

The subject of disease and parasite transmission by introduced birds is not well studied, and the consequences are not fully known. Enough examples exist, however, to demonstrate the dangers inherent in such transfers. Exotic disease outbreaks may have been responsible for extinctions and declines of some native Hawaiian bird species. Interest is now growing in the reservoir that introduced populations provide to initiate such outbreaks. Avian malaria and avian pox are two major disease problems believed to be having a significant impact on the abundance and distribution of native Hawaiian forest birds. Both of these diseases are transmitted by mosquitos. The disease agents were probably brought to the Islands as part of the pet bird industry, in domestic poultry, and possibly in birds released into the wild. However unlikely similar disease transmission may be for Alaska, the risks demand consideration.

Hybridization

Hybridization results in serious problems when characteristics of the introduced species are in some ways less desirable than those of native species. Those problems are not limited to crosses resulting from foreign exotics but also relate to native species transplanted between regions.

The AGA testimony before the BOG suggested that genetic pooling and ten generations of breeding would produce a bird easier to raise and breed successfully. The ADF&G maintains that the extent to which distinct subspecies or races of grouse exist in Alaska argues against private ownership and interbreeding. For native populations, genetic diversity (rather than pooling) is the key to survivability in the wild and adaptation to selective pressures. Mixing stocks,

a direct consequence and goal of private ownership, can result in lower reproductive potential, loss of genetic vigor, decreased disease resistance, and reduced survival of wild birds.

In North America, the bobwhite has been transplanted and re-introduced in many areas--not always with welcome results. The less robust southern variety has been introduced into northern areas where it readily crossed with the heavier and sturdier northern stock. The resulting offspring were both smaller and weaker than the original stock and less well equipped to cope with prevailing conditions.

The extent to which natural hybridization between native and exotic birds would occur in Alaska is unknown. However, sharp-tailed grouse are known to cross readily with prairie chickens, and willow and rock ptarmigan cross with black and hazel grouse. Because these species are not sympatric (i.e., occur in different geographic areas), geographic isolation rather than physiological or behavioral factors may well be an important factor preventing hybrids. The likelihood of crosses among different races or subspecies of the same species is even greater, for example, between willow ptarmigan and European red grouse. Natural sympatry would, of course, be lost if exotics were allowed into the state.

The variability among regional populations of mammals and game bird species in Alaska is a reflection of evolved traits that enhance survival in local environments. Human activities that result in the manipulation of gene pools or introduction of exotic stocks may reduce the fitness of native populations. As with fisheries, the values of Alaska's native game populations rely on the maintenance of healthy wild stocks. Unlike fisheries, natural reproduction is the sole source of wild game stocks, and unnecessary interference should be discouraged.

Introduction of Exotics

The AGA points to the historic failure of all introductions of game bird species into Alaska as evidence that the ADF&G's concerns regarding the establishment of exotic species are exaggerated. Following five failed attempts, some skeptics may have felt the same way about the sixth effort to introduce starlings to New York's Central Park. Few people could have forseen that starlings would colonize the continent, cross the Arctic Circle, and establish breeding populations in Alaska. As for game birds, no known efforts have been made to introduce non-native species of grouse to Alaska. Most grouse, as opposed to quail and pheasants, are native to habitats and climates similar to

those found in Alaska. Such birds are likely to have a greater chance for survival here.

Alaska's lack of success in preventing the introduction of potentially destructive mammals indicates that colonization of the state by exotics is possible. During the last century, the widespread introduction of red and arctic foxes to predator-free islands had a devastating effect on ground-nesting birds and led to the near extinction of the Aleutian Canada goose. The eradication of foxes has been difficult, expensive, and only moderately successful. The Norway rat ranges widely on the island of Amchitka, feeding on nesting seabirds. It is also established in Anchorage, Juneau, and Nome. More recently, illegal releases have resulted in the establishment of raccoons and wild boars in Alaska.

Until 1984, European ferrets could not be kept as pets. The change in regulations permitting private ownership was prompted by a district court decision holding that ferrets were domestic animals not subject to regulatory jurisdiction of the BOG. Critical to the court's decision was the view that ferrets could not become established in the state. Only three years later, it appears the court was wrong. A feral population of ferrets has apparently been established in southeast Alaska. Ferrets pose risks to nesting birds, wild furbearers, and people. The Alaska Epidemiology Office has issued a warning that ferrets can and do carry rabies. Rabies vaccine is not known to be protective in ferrets.

As interest in bringing exotic animals to Alaska increases, some other states are becoming more restrictive. Within the last six months, California has banned the importation and private ownership of ferrets (including neutered males) as pets. New Mexico recently reported that feral colonies of ferrets have become established in that state, and they are considered a threat to public health and safety. Massachusetts has stopped issuing permits for pet ferrets. South Carolina recently notified the ADF&G that it is now illegal to purchase or sell game, including all game birds except quail, in that state. Actions taken by California and South Carolina were not dictated solely by biological considerations, but also reflect the difficulty of enforcing regulations that require discrimination between legally and illegally possessed game.

The ADF&G's overall mission is to conserve, protect and perpetuate Alaska's wildlife resources for the greatest benefit of the people and to develop and extend those resources consistent with sound management practices. Successfully introduced game birds, intentional or accidental, have the potential to compete with, displace, or cause declines in our native avifauna. Our nation is replete with examples of sought-after introductions turning into

ecological disasters. Ninety-eight percent of Hawaii's flora and fauna is now exotic. At the other extreme, the extent to which Alaska has held onto its natural heritage is the envy of 49 states. Lax regulations elsewhere in the country should be a warning and not a model for us to follow. When acting to protect Alaska's wildlife, Alaskan's are never more justified in saying "we don't care how they do it outside."

GAME BIRD FARMING OF GROUSE AND PTARMIGAN:
A Draft Issue Paper

Prepared by: Alaska Department of Fish and Game
Division of Game
January 1988

United States Department of the Interior

FISH AND WILDLIFE SERVICE

NATIONAL WILDLIFE HEALTH CENTER
6006 Schroeder Road
Madison, Wisconsin 53711

IN REPLY REFER TO:

November 23, 1987

Mr. Phil Koehl
Alaska Department of Fish and Game
P.O. Box 3-2000
Juneau, Alaska 99802-2000

Dear Mr. Koehl:

In my opinion, Alaska is wise to pursue a very conservative approach regarding the importation of wildlife. By doing so, the State can hopefully avoid the mistakes made in the lower 48 states and elsewhere. In general wildlife species should not be transferred from one location to another without adequate health testing and certification. In reality this is seldom done because of the costs involved, inadequate technology due to lack of support and regulations requiring such actions, and other reasons. The relocation and/or rearing of wildlife in captivity has a disease component that is seldom addressed by conservation agencies themselves when they are the ones directly involved. The difficulties in adequately addressing this problem are compounded many-fold when wildlife are being relocated, raised, or maintained by the private sector.

Disease implications involve many considerations including carriers of pathogenic agents among the wildlife being imported or raised in captivity, the presence of internal or external parasites that can serve as vectors for disease agents, and the possible role of the wildlife involved as amplifying hosts, intermediate hosts, and reservoirs of disease cycles in free-living indigenous wildlife populations.

Minimum requirements to evaluate disease potential and minimize the potential for disease introductions should include health inspection involving laboratory testing for disease agents of concern and health certification of wildlife being imported into the state, testing of wildlife raised in confinement under conditions that allow for direct contact or indirect exposure of indigenous wildlife to feces, urine, or environments used by captive wildlife, and monitoring of causes of illness and death in captive wildlife. The latter requires an adequate records system, necropsy of carcasses by a competent disease diagnostic program, and legislative authority to take appropriate actions when serious disease problems are encountered.

A primary foundation for development of health certification programs is knowledge of the status of disease agents in indigenous wildlife. Unfortunately, baseline data of this type is generally inadequate due to a lack of methodical biological study and monitoring. This increases the difficulty in establishing and maintaining a strong position against the importation and/or release of wildlife because of disease considerations.

Examples of disease problems associated with captive reared and/or translocated wildlife are numerous and include duck plague (duck virus enteritis), inclusion body disease of cranes, exotic Newcastle disease, avian tuberculosis, salmonellosis, avian cholera, mycoplasma infections, gapeworm infestations, blood parasites, blackhead, avian pox and other diseases of birds; diseases of mammals include brucellosis, malignant catarrhal fever, rabies, mange, tuberculosis, and others.

I hope the above information is of some assistance. I will be visiting our Regional Office in Anchorage during the week of January 11. I could arrange my schedule to come to Juneau on my return to Madison if you feel further interactions on this subject would be worthwhile.

Sincerely,

Milton Friend

Milton Friend
Director

Attachment

MF:cd

Copies to:
Dr. Randall Zarnke
FWS Regional Director, Region 7
NWHRC Resource Health Team Leader

International Wild Waterfowl Association, Inc.

RFD#1 James Farm
Durham, NH 03824

December 11, 1987

AGA Legislative & Regulation
Committee
c/o Mrs. Judith Rivard
P.O. Box 871841
Wasilla, Alaska 99687

Dear Judy:

Your letter arrived yesterday and I was quite surprised to learn of the Alaska Fish and Game's opposition to the keeping of grouse in captivity. I have always found the department rather progressive and quick to realize the benefits of the conservation efforts of the aviculturist. Certainly every effort must be made to get them to relax their position and allow captive grouse breeding in Alaska where there is a greater potential for success than in any other climate in the United States.

Grouse are one of our most abundant game species and we know next to nothing about maintaining or breeding them in large numbers if there was ever a need to restock an area. Captive propagation affords the opportunity to study a species year round when it is often impossible to do it in the wild. Techniques must be developed especially in the areas of disease control and stress reduction. It is very unlikely that this effort will be put forth by an institution or government agency because grouse are not a highly visible species nor are the threatened or endangered. The private avicutural community is the logical place to develop the necessary techniques and to add to the collective knowledge of this beautiful and fascinating family of birds. We must learn as much about them as possible while they are still abundant.

In reviewing the three concerns expressed by Alaska Fish and Game and mentioned in your letter I would offer the following response:

1) <u>Potential for spread of disease and parasites from captive birds</u> - In considering the spread of contagious disease it would first be necessary to establish which ones are possible in Alaska's environment. Normally diseases that are prevalent

in captive flocks of game and other birds would not survive your winters. Pullorum has been essentially elimated by the National Poultry Improvement Plan and it would only be necessary to do a simple annual test to ensure that it did not exist. Avian tuberculosis would require large concentrations of wild birds on a small area for transmission which is not probable due to limited food supply. Some parasites like gapeworms could not winter over. Coccidiosis for example has been identified in wild populations already it isn't until you bring a bird under stress that it causes a problem. Migratory birds would be a much more likely reservoir of disease and Alaska certainly has more than their share of those. The fact that grouse do not cover large areas as they forage for food would also be a factor to consider. You need to develop a list of diseases of concern and address them on an individual basis. It maybe necessary to develop some periodic testing requirements to address specific concerns once they are identified. Get your state veterinary involved to add some credability to your argument. There have been few if any disease outbreaks that have been traced to an aviculturist's flock.

2) Remote possibility that an escaped bird would hybridize with the native stock - There are numerous examples in nature of more than one species of closely related birds existing in the same habitat with no known hybridization. This is true in pheasants, quail, grouse and waterfowl. Hybridization usually occurs in a captive situation when birds with no opportunity to mate with their own kind are forced together. There is no reason to believe that one escaped grouse would even survive the rigors of the Alaska winter much less find a wild bird of a different species that would accept it as a mate.

3) Compete with native grouse for food and nesting areas - Captive diets are generally quite different from a grouse's wild food source. Unless a concerted effort was made to provide and teach a bird to utilize the wild food source it would not survive long enough to learn. Certainly this has been demonstrated by the numerous unsuccessful attempts to re-establish the wild turkey to its former range by releasing captive reared poults. These birds had been conditioned for release but still died from starvation once winter weather set in.

I hope you find this dialogue of some value in convincing the Alaska Department of Fish and Game that the value of captive grouse propagation as a conservation tool far surpasses the threat that they might offer to a wild population. I have enclosed an article that I wrote just two years ago about the value of the private aviculturist. In that two years, if you consider just the species mentioned, the dusky seaside sparrow has gone extinct and there are no California condors left in the wild. In the case of the sparrow we waited to long to turn it over to aviculture in a salvage attempt and in the case of the condor we may have argued about it to the point that it is too late. Compare the plight of these two species with the success stories of the Nene goose, the masked bobwhite, the peregrine falcon and the Laysan duck which are alive and in good numbers today because of the efforts of private aviculture. It would seem a shame that some grouse species should follow the fate of the dusky seaside sparrow for lack of access to them while they are still plentiful.

Please use this letter and the enclosed article as you see fit. I have ask Wendi to publish your letter in our next newsetter with a brief note calling for individual response from our members.

Sincerely,

Walter B. Sturgeon, Jr.

Walter B. Sturgeon, Jr.

cc: Wendi Schendel
Paul Dye

Aviculture under attack

by Walter Sturgeon

Editor's Note:

Walter Sturgeon is the First Vice President of the International Wild Waterfowl Association. He maintains a fine waterfowl collection at his Lee Ridge Aviaries, R.F.D. #1, James Farm Durham, NH. He utilizes this collection as a research center, as well as for propagation purposes. He and his staff have done considerable research related to the problem of Aspergillosis in northern waterfowl.

Walter has participated in several Arctic expeditions to collect various species of waterfowl for preservation and propagation purposes.

The article which Walter here presents is in defense of an activity dear to our hearts. This though-provoking material will be useful to us all during difficult times which may lie ahead.

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I am indebted to Dr. James W. Carpenter and Dr. Scott R. Derrickson whose paper entitled, "The Role of Captive Propagation in Preserving Endangered Species," provided the framework for this article. Both are at the forefront of defending the maintenance of captive populations of birds and the collections they manage at Patuxent Wildlife Research Center and the National Zoological Park's Conservation and Research Center are fine examples of what can be accomplished by aviculture.

W. Sturgeon

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Aviculture plays a important role in the conservation of wildlife. It is ironic that this technique which is finding increased acceptance as a tool to help preserve rare and endangered species is currently under attack. Our right to pursue this advocation is being jeopardized by a small minority of people who do not or do not want to understand the role of captive maintenance and propagation. This article is offered as an aid to those who find themselves defending their rights through the press or at a public hearing.

There is no need to explain what is happening to our world in such areas as population increases; loss of wildlife habitat; environmental pollution; hunting pressure; famine; native subsistence; war; the introduction of exotic species; and advances in transportation technology. All of these have taken their toll on wildlife species - both plant and animal.

Current estimates suggest that from one half to 2 million species or 5 to 25 percent of all existing life forms may become extinct by the turn of the century. This reduction in biological diversity is one of the major problems facing many and it will ultimately cause a decrease in the quality of human life.

Man is waking up to these awesome prospects and is starting to react with a number of worldwide programs designed to slow this loss. Most of the effort to date has been in the preservation of threatened and endangered species but it has a beneficial impact on all wildlife.

The efforts have resulted in legislation, hunting restrictions, treaties, increased law enforcement, better habitat management and acquisition, control or environmental pollutants, public education, additional research and federal, state and private conservation programs. All of these efforts are in the hope that we are not too late to have a significant impact.

Aviculture is another technique that is finding increased acceptance as a valid conservation strategy. Captive propagation offers an attractive reinforcement to the complex task of habitat preservation and provides an immediate opportunity to preserve options until limiting factors can be identified. As a conservation technique, captive propagation of threatened and endangered species can complement or enhance conventional research and management practices. There are at least four ways that this is currently done:

During periods of high risk to a particular species captive propagation can be used to preserve genetic variability. The maintenance of representative genotypes in captivity can prevent the indiscriminate loss of valuable genetic variation. Some of our leading zoos are presently cooperating in a program they call a Species Survival Project.

This program is designed to maintain 90 percent of the genetic variability of a particular species for 200 years. The program involves a computer program, a species coordinator, and the known history of the specimens made available to the program. If the number of specimens is low, then it is necessary to get them breeding and a large number of offspring must be maintained to meet the program objectives.

The earlier you get started on a target species, the fewer number of total birds that must be maintained. Key elements in the program require stock procurement from the wild before populations reach critically low numbers in order to (1) minimize the impact of removing individuals from the wild population, (2) maximize the genetic diversity, and (3) secure enough animals to form a viable captive breeding program. Current examples to SSPs include White-naped and Manchurian Cranes, Bali Mynah, Guam Rail and Micronesian Kingfisher.

Captive propagation can produce stock for study to yield information useful in managing wild populations. The identification of basic biological, behavioral and ecological characteristics usually require intensive scientific study. In many instances, study that would be difficult if not impossible to undertake in the wild can be conducted under the controlled conditions available in captivity.

The Arctic and Antarctic regions are examples of inhospitable and

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aviculturist and anyone else who keeps wild animals in captivity by various animal protection organizations. They are generally opposed to the keeping of any wild animal and many extend this to public institutions as well as private facilities.

Their efforts, aimed at state legislatures, tend to be a grass roots type approach to a representative who is sympathetic to their cause, and depend on a large part to public apathy to slip it into law. Often respected organizations like Audubon and Friends of Animals are involved and people automatically accept anything they might endorse.

I would hope that everyone is opposed to cruel and inhumane treatment of any living thing and I don't deny that examples of wild animals kept in captivity result in just that, but they are infinitesimal in comparison to the number of animals that are well kept.

Efforts currently underway involve restricting the importation of birds and animals, placing restrictions on transportation of birds across state lines without proof of their captive origin, and specification of size and type of enclosure being used to house animals. These will represent additional layers of legislation and are counter productive to our efforts to preserve the maximum number of species possible. **Current laws are sufficient to control abuse and what is needed is adequate enforcement of them.**

I hope this article will give you a framework in which to defend our right to continue with our efforts. As a participant in this effort you are in a position to defend captive-propagation without any more strings attached and should be alert to these restrictive proposals if and when they arise.

I would like to leave you with one thought that is often used when discussing this subject:

"The beauty and genius of a work of art may be reconceived, though its first material expression be destroyed; a vanished harmony may yet again inspire the composer; but when the last individual of a race of living beings breathes no more, another heaven and another earth must pass before such a one can be again."

William Beebe
(1877-1962)

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inaccessible regions during most of the year, and to overcome this probably the most elaborate controlled condition facility for birds was built at Sea World in San Diego. There they are studying penguins, alcids, and other related species and are breeding most of them.

Surrogate species are often used in the case of severely endangered species for the initial research. Examples of surrogate species research are the work being done with the Andean Condor, itself a threatened species, for the California Condor and use of the abundant Greater Sandhill Crane for the Whooping Crane.

A third way is **producing stock for release in the wild.** Techniques and methods for releasing captive-reared offspring are being developed for a number of species. They are currently being employed to bolster, restore, or establish wild populations.

Techniques such as foster parenting by using a surrogate species to hatch and rear offspring from captive produced eggs are being used in Idaho to establish a second flock of Whooping Cranes and will soon be used in Asia utilizing the Common Crane for some of their rarer forms.

Egg swaps have been used to overcome DDT egg shell thinning problems in birds-of-prey such as the osprey and the eagle. Hacking stations have resulted in successful release of Peregrine Falcon. Soft release programs have been used to gradually release the Nene Goose in Hawaii, Andean Condor in South America, Mississippi Sandhill Crane to its home range and the Masked Bobwhite to the Southwest.

Most of the birds mentioned are non-migratory which makes the prospects better for their successful release. Migratory birds such as the Aleutian Canada Goose have been successfully released and have migrated but losses have been high.

Aviculture can also play an important role in producing birds for public education. In maintaining a species in captivity for research and propagation, more animals than are needed for transplanting are often produced. By loaning these excess animals to zoological parks and other institutions, public awareness of endangered species research and conservation efforts can be greatly enhanced. Visitors to your aviaries each year can help in this public awareness effort and I would encourage you to make your facilities available on an informal basis for this purpose.

Captive propagation can also effectively complement existing research and management programs in several ways. **In most instances, obtaining stock from the wild has little or no impact on the productivity of the wild population.** Animals that are wounded, injured, or for some other reason unable to survive in the wild can be maintained in captivity without reducing the size or gene pool of the wild population.

At the present time I am maintaining a flock of Atlantic Brant that were injured off the coast of New Jersey during their southern migration. These birds, along with a few captive-bred young, will hopefully be a big enough colony to allow us to become only the second place in the world to breed this species.

In some species such as cranes, a second egg can be removed from the nest since it is there as an insurance policy against loss or failure of the first one to hatch. This egg is usually

abandoned or if it hatches, the stronger chick will kill the weaker due to sibling rivalry. This technique, practices for some 20 years, has effectively doubled the number of Whooping Cranes in existence today.

The Brown Pelican has been reintroduced to much of its former range with the use of injured birds that are incapable of flight. The injured birds are set up in a protected area such as a city park and induced to breed. The young birds are reared by their parents an once fledged are allowed to come and go as they please. Eventually this soft release program results in colonies being set up nearby and a successful re-establishment. Other species which re-nest or customarily lose a substantial number of eggs or young can have their nest robbed with little impact.

Captive propagation can also be an effective insurance against extinction in species where the extant population is small or where conventional management practices have proven ineffective in preventing further species decline. Some of the present species that their last hope seems to be in captive propagation are the California Condor, Guam Rail, Micronesian Kingfisher, and the Dusky Seaside Sparrow.

In the case of the sparrow only three males currently exist and a program to cross breed these birds to females of a closely related species has not worked well due to the advanced age of the males. This species will undoubtedly become the next North American bird to become extinct.

The Pink Pigeon from the island of Mauritius has been saved by taking it into captivity to protect it from monkeys introduced to the island who predate their eggs. Once the monkeys are removed it will be reintroduced. A similar story with the Aleutian Canada Goose saved this species from the Arctic Fox.

Captive birds are more productive than their wild counterparts. The life expectancy of birds in captivity is much greater than in the wild because of protection from predators, disease and accidents and as a result of good husbandry practices. By increasing their life expectancy and increasing their annual production through various manipulative techniques both annual and lifetime productivity can be increased many fold.

Photoperiod adjustment in cranes has resulted in as many as six clutches of eggs in a single season from Whooping Cranes at Patuxent Wildlife Research Center. At my own facility we have induced a pair of Greater Sandhill Cranes to lay five clutches by removing their two egg clutches shortly after the second egg wa laid.

Captive propagation can also allow for selective pedigree breeding which is very important. Captive populations can play an important role as reservoirs for preserving and infusing genetic diversity into wild stocks. Egg transplant is an effective way of introducing new blood.

Artificial insemination is often used to overcome a lifetime pair bond between birds that you might want to produce young with another mate. AI can also be used to mate birds that are injured and incapable of breeding or to mate birds imprinted on humans or other birds of a different species. Cryogenics is being used at Patuxent to preserve crane semen for use on later generations.

The private aviculturist can play an important role in maintaining bird species. Zoos and other public institutions numbering about 170 in the United States can reasonably maintain about 30,000 birds. Private aviculturists keep at least 10 times this number or 300,000.

Private aviculturists have done a particularly good job with two groups of birds, pheasants and waterfowl, and have without institutional help saved several from extinction. They are currently concentrating significant resources on psittacines and have made breakthroughs by breeding many of the rare forms.

However, some of the most abundant species are not well established in captivity even though they have been maintained for years. Other species that are abundant are next to impossible to keep alive under captive conditions for even a short period of time. Examples of the former include the Atlantic Brant and the Red-breasted Merganser, while the latter species include the old Squaw, the Stellars Eider and the Loon. We must learn what is required to propagate them while they are abundant and this is left up to the private aviculturist because the other institutions feel they must put their resources into threatened and endangered varieties.

The private aviculturist has one extremely important thing to offer and that is dedication. He works long hours to provide for his bird's needs and by living with his birds he is available 24 hours a day to observe their habits and to respond to any emergency. Zoos and other public institutions are staffed by many extremely dedicated and capable individuals who generally have experience and good technical background. These individuals are often hampered by lack of qualified support personnel and funds, their priorities are established by some commercial manager of the facility, facility maintenance is done under someone else's direction, and they are dependent on other personnel such as security to deal with emergencies that arise during off hours. As a result they often do not achieve the results obtained by the private aviculturist.

The permit process and the political aspects of obtaining rare species have always favored public institutions but capable private aviculturists are getting increased access to the birds. Private individuals are beginning to participate in the various SSPs and studbook programs. Once a zoo recognizes your capabilities and the extent of your dedication to a particular project, they will consider you an additional resource and will encourage your participation.

The bottom line is that without the private aviculturist there are not enough facilities, staff and funds available for maintenance of all the world's currently threatened or endangered birds.

Aviculture is currently under attack in this country and our very right to use this tool is in jeopardy. There is a lot of pressure being brought on the

ARCTIC AUDUBON SOCIETY

P.O. BOX 82098
COLLEGE, ALASKA 99708

February 28, 1989

To the Members of the House Resources Committee:

The Arctic Audubon Society is firmly opposed to HB38, which you will be considering in a Committee Hearing on Thursday, February 2. This bill relates to the farming of captive-bred grouse and ptarmigan, and it would allow people doing this farming to import exotic species of birds, among other things.

There are two serious problems with the proposed legislation. First is that it introduces risk of avian diseases to native bird populations. It is unlikely that such farming could go on very long without some individuals escaping and they could spread desease, hybridize, or compete for habitat with Alaska's natural gamebird populations.

Second, passing this legislation amounts to managing our wildlife by statute, whereas it should be done by regulation through the processes already established by the Department of Fish and Game and the Board of Game. These are the appropriate agencies, with the scientific and research background upon which to make game management decisions, to be deciding whether grouse can be farmed. By taking ADF&G out of the process totally in this case, who would monitor the grouse farmers to ensure that they are not undertaking commercial activity, and that their stocks are not posing a threat to native birds?

Perhaps a smaller point but still a definite curiosity about this bill is this question: ADF&G presently issues permits for people to raise native grouse for noncommercial purposes, i.e., research. Raising game for commercial purposes is illegal. So what is the purpose of this bill? Why add a license for an activity which is already well manageed by permits in the appropriate state agency?

This bill is ill-conceived and, if passed, potentially dangerous both to game populations and to the appropriate authority of the Alaska Department of Fish and Game. We urge you to oppose the bill.

Sincerely,

Anne Weinstock, Conservation Chairperson

POINT BLANK . . .

the pros and cons of resource issues

Importing non-native grouse for propagation — HB 38

by Wayne Regelin, Deputy Director
Division of Wildlife Conservation

The Division of Wildlife Conservation was asked to respond to an article printed in the last issue of this publication. In that article, Judi Rivard, representing the Alaska Gamebird Association (AGA), stated that the Department of Fish and Game has denied permission to work with captive-bred grouse and that this division opposes the propagation of captive-bred grouse in captivity for noncommercial purposes.

On the contrary, the Department has issued ten permits and permit amendments to Mr. and Mrs. Rivard during the past six years to collect and breed native grouse and ptarmigan for research in the propagation and husbandry of these birds. At present, the Rivards have permits to possess and propagate spruce grouse and all three species of native ptarmigan. They have been successful in recent years in hatching and raising both grouse and ptarmigan.

The Department has restricted the Rivards' permits in two ways. First, the permits do not allow the sale of gamebirds or their offspring because the sale of game is prohibited by law. Second, the Department has denied requests to import grouse into Alaska because the Board of Game specifically prohibits importation of grouse (except capercaillie) for avicultural purposes.

Ms. Rivard believes that the breeding of grouse for "noncommercial purposes" should allow purchase and sale of these gamebirds. The Department accepts Webster's definition of noncommercial, which means not connected with the buying or selling of goods.

The Constitution of the State of Alaska says that the state's native wildlife is a public resource reserved to the people for common use. Other than a few traditional exceptions—such as the trapping of furbearers—the sale of that public resource for private profit has been prohibited since statehood. This includes game animals harvested by hunters and all wildlife collected under authority of scientific or educational permits issued by the Department.

Privatization or commercialization of wildlife has important implications embracing ethical, biological, enforcement, and Constitutional considerations. The Department supports current statutes and regulations that prohibit private ownership or sale of wildlife and opposes any legislative action that would change those laws.

The Department of Law, through a series of formal and informal legal opinions, has indicated that the authority to allow the purchase and sale of Alaska's public wildlife resources rests not with the Department, but with the Board. Unilateral action by the Department authorizing any sale, therefore, would be both illegal and irresponsible.

Alaska's laws regulating the importation and use of wildlife are among the most stringent in the nation — and with good reason. Alaska is unique among the states and extremely fortunate to retain nearly all of its native fauna and flora in their natural diversity and abundance, relatively unaffected by species introduced from elsewhere. Contributing to this condition are conservative policies and regulations governing the introduction and importation of exotic animals.

The AGA contends that gamebird breeders should be allowed to import, buy and sell exotic birds (including grouse and ptarmigan), because the Department has not demonstrated that any adverse biological consequence would result.

Many species of birds can be imported, bought, and sold under state regulations. However, species that are closely related to native gamebirds and that could survive in the harsh Alaskan climate may not be imported. While the Department acknowledges that the risks of disease are small, they are not only real — but potentially devastating. **What we don't know about the existence, introduction, and transmission of disease is most likely to hurt us.**

We have only to examine the examples of the other 49 states to see the effects of a lack of caution. Accidental or intentional introductions of a host of plants, mammals, birds, fish and insects have had disastrous impacts on native plants and animals in virtually every state of the union and every country in the world. **Numerous examples exist of diseases that are relatively harmless to species with which they naturally evolved—but are lethal in populations of the same or similar species which never have been exposed to them.**

To help guard against the accidental introduction of an unknown or unsuspected disease, a long-standing regulation of the Board of Game prohibits the importation and possession of nonnative and exotic birds from arctic and temperate latitudes, including most species of grouse found outside Alaska.

Two additional points in Ms. Rivard's article deserve brief mention.

Aviculture permit guidelines were developed in consultation with the AGA and are not requirements. No one has ever been denied a permit for failing to meet all the recommended guidelines.

The Department stopped issuing permits for game bird shooting preserves in 1988 on the advice of the Department of Law. We have requested the Board to consider this issue at the earliest opportunity and will recommend that regulations be adopted that allow shooting preserves.

Although I have used considerable space in responding to the major points in Ms. Rivard's article, a more fundamental concern of the Department is with the Alaska Gamebird Association's continuing efforts to legislate the Board and the Department out of the management of gamebirds. Legislative intervention into the regulatory process could have profound implications for the management of wildlife in Alaska.

The Board of Game was created by the Legislature and delegated responsibility to formulate game regulations based on biology and outside of political pressures. The Board of Game responded to the AGA by creating an aviculture permit that allows import, export, purchase and sale of a wide variety of birds. After thoughtful consideration, the Board excepted grouse from the aviculture permits because of potential disease and hybridization risks and the implications of allowing sale of native species of wildlife.

Ms. Rivard disagrees with the Board's decision and now has taken her case to the Legislature. In my opinion, it is not in the best interests of the wildlife resource or the citizens of Alaska to ask the Legislature to countermand wildlife management decisions of the Board of Game in order to benefit a few individuals. Such actions circumvent a regulatory process that has worked effectively since statehood.

MEMBER

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———opposition to village sovereignty
———habitat conservation
———recreational access to public lan
———fish/game allocations
———subsistence priority
———fish/wildlife violations
———waterfowl population declines
———state land plans
———federal land plans
———conservation education
———hunter/trapper harassment
———appointments to fish and game b
———federal wilderness designations
———guide/outfitter legislation
———federal infringement on state ma
———hunter education
———other (please describe)

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Please check any committees on which
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Alaska State Legislature
HOUSE OF REPRESENTATIVES
COMMITTEE ON RESOURCES

POUCH V
JUNEAU, ALASKA 99811
(907) 465-3715

Letter of Intent
for
CS HB 55 (RES)

Letter of Intent

It is the intent of the legislature that the administration examine the possibilities of moving all or a portion of the responsibility for the underground injection control (UIC) program from the Alaska Oil and Gas Conservation Commission to the Department of Environmental Conservation by Executive Order or examine the possibility of accomplishing this function through an inter-agency agreement. It is the intent of the legislature that the agency/agencies with control over the program conduct sufficient inspections of the types of substances being injected and provide for adequate public participation during all phases of the UIC program. It is further the intent of the legislature that the agency/agencies assigned the responsibility be best suited to protect Alaska's ground water.

Representative Curt Menard
Co-Chairman

Representative Cliff Davidson
Co-Chairman

HOUSE COMMITTEE REPORT

(9)
Date Referred: January 9, 1989 FURTHER REFERRALS: JUDICIARY

Date of Committee Action: 4-14-89

The RESOURCES Committee recommends that:

HOUSE BILL NO. 55 [OIL & GAS CONSERVATION COMMISSION]
"An Act relating to the Alaska Oil and Gas Conservation Commission; changing a court rule; and providing for an effective date."

[X] be replaced with CS HB 55 (Res) [ ] the same title [X] a new title

[ ] have attached amendment(s)

[X] do pass
[ ] do not pass
[ ] no recommendation
[ ] individual recommendations
[ ] additional referral to the _____ Committee

ADOPTS: Hs. Resources w/ letter of intent

ATTACHES NEW FISCAL NOTE(s):

[ ] fiscal impact
[ ] zero fiscal note
[ ] zero with analysis

APPROVES PREVIOUS:

[ ] fiscal note(s) published:

_____

[X] zero fiscal notes(s) published:
2.00 - 1-9-89 ~~DEC~~ DEC, 1-9-89 DNR

SIGNING DO PASS:

Mike Navarre
Ctr. Mike Davis

SIGNING OTHER THAN DO PASS:
(Do Not Pass, No Recommendation, Amend)

Bill Hudson - DO Rec.
Richard Storey NO REC
Bert Sharp No Rec.

Chairman's signature

go0679hE

Original sponsor: Rules/Governor

IN THE HOUSE

CS FOR HOUSE BILL NO. 55 (Res)

IN THE LEGISLATURE OF THE STATE OF ALASKA

SIXTEENTH LEGISLATURE - FIRST SESSION

A BILL

For an Act entitled: "An Act relating to the Alaska Oil and Gas Conservation Commission; changing a court rule, Rule 732 of the Uniform Rules of Criminal Procedure, adopted by the Alaska Supreme Court under its constitutional rule-making authority; and providing for an effective date."

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF ALASKA:

* Section 1. AS 31.05.027 is amended to read:

Sec. 31.05.027. LAND SUBJECT TO COMMISSION'S AUTHORITY. The authority of the commission applies to all land in the state lawfully subject to its police powers, including [. IT APPLIES TO] land of the United States and [OR TO] land subject to the jurisdiction of the United States [ONLY TO THE EXTENT THAT CONTROL AND SUPERVISION OF CONSERVATION OF OIL AND GAS AND PREVENTION OF WASTE BY THE UNITED STATES ON ITS LAND FAILS TO CARRY OUT THE INTENT AND PURPOSES OF THIS CHAPTER, AND OTHERWISE APPLIES TO FEDERAL LAND SO FAR AS AN OFFICER OF THE UNITED STATES HAVING JURISDICTION, OR AN AUTHORIZED REPRESENTATIVE, SHALL APPROVE ANY OF THE PROVISIONS OF THIS CHAPTER OR ORDERS OF THE COMMISSION WHICH AFFECT LAND]. The authority of the commission further applies to all land included in a voluntary cooperative or unit plan of development or operation entered into in accordance with AS 38.05.180(p).

* Sec. 2. AS 31.05.070(a) is amended to read:

(a) The commission may summon witnesses, administer oaths, and

require the production of records, books, and documents for examination at a hearing or investigation conducted by it. [A PERSON MAY NOT BE EXCUSED FROM ATTENDING AND TESTIFYING, OR FROM PRODUCING BOOKS, PAPERS AND RECORDS BEFORE THE COMMISSION OR A COURT, OR FROM OBEDIENCE TO THE SUBPOENA OF THE COMMISSION OR A COURT, ON THE GROUND OR FOR THE REASON THAT THE TESTIMONY OR EVIDENCE, DOCUMENTARY OR OTHERWISE, REQUIRED OF THAT PERSON MAY TEND TO INCRIMINATE OR SUBJECT THAT PERSON TO A PENALTY OR FORFEITURE.] This section does not require a person to produce books, papers, or records, or to testify in response to an inquiry not pertinent to a [SOME] question lawfully before the commission or court for determination. If a witness claims the privilege against self-incrimination, the commission may request the attorney general to apply to the superior court under AS 12.50.101 for an order compelling testimony [A NATURAL PERSON IS NOT SUBJECT TO CRIMINAL PROSECUTION OR TO A PENALTY OR FORFEITURE FOR OR ON ACCOUNT OF ANY TRANSACTION, MATTER OR THING CONCERNING WHICH, IN SPITE OF OBJECTION, THAT PERSON MAY BE REQUIRED TO TESTIFY OR PRODUCE EVIDENCE, DOCUMENTARY OR OTHERWISE, BEFORE THE COMMISSION OR COURT, OR IN OBEDIENCE TO ITS SUBPOENA. HOWEVER, A PERSON TESTIFYING IS NOT EXEMPT FROM PROSECUTION AND PUNISHMENT FOR PERJURY COMMITTED IN SO TESTIFYING].

* Sec. 3. AS 31.05.150(a) is amended to read:

(a) A person who [WILFULLY] violates a provision of this chapter, or a regulation or order of the commission adopted under this chapter, is liable for [SUBJECT TO] a civil penalty of no [NOT] more than $5,000 a day [$1,000] for each day [ACT] of violation [AND FOR EACH DAY THAT THE VIOLATION CONTINUES], unless the penalty for violation is otherwise provided for and made exclusive in this chapter.

* Sec. 4. AS 31.05.150(b) is amended to read:

(b) A [IF A] person who, for the purpose of evading this chapter

[,] or any regulation or order of the commission adopted under this chapter, knowingly commits an act specified in AS 11.46.630(a) is guilty of a class A misdemeanor [WILFULLY MAKES OR HAS MADE A FALSE ENTRY IN A RECORD, ACCOUNT OR MEMORANDUM REQUIRED BY THIS CHAPTER, OR BY A REGULATION OR ORDER, OR WILFULLY OMITS, OR CAUSES TO BE OMITTED, FROM A RECORD, ACCOUNT OR MEMORANDUM, FULL, TRUE AND CORRECT ENTRIES AS REQUIRED BY THIS CHAPTER, OR BY A REGULATION OR ORDER, OR REMOVES FROM THE STATE OR DESTROYS, MUTILATES, ALTERS OR FALSIFIES SUCH RECORD, ACCOUNT OR MEMORANDUM, THE PERSON IS GUILTY OF A MISDEMEANOR, AND UPON CONVICTION IS PUNISHABLE BY A FINE OF NOT MORE THAN $5,000, OR BY IMPRISONMENT IN JAIL FOR NOT MORE THAN SIX MONTHS, OR BY BOTH].

* Sec. 5. AS 31.05.150 is amended by adding a new subsection to read:

(f) A person who knowingly violates a regulation or order of the commission is guilty of a misdemeanor punishable by a fine of no more than $5,000 a day for each day of violation.

* Sec. 6. Section 2 of this Act has the effect of changing Rule 732 of the Uniform Rules of Criminal Procedure, adopted by the Alaska Supreme Court in State v. Serdahely, 635 P.2d 1182 (Alaska 1981). It changes the immunity granted a witness for compelled testimony from "transactional" immunity to "use" immunity.

* Sec. 7. This Act takes effect immediately under AS 01.10.070(c).

go0679hE
Chenoweth
4/3/89

Original sponsor: Rules/Governor

IN THE HOUSE

CS FOR HOUSE BILL NO. 55 ( )

IN THE LEGISLATURE OF THE STATE OF ALASKA

SIXTEENTH LEGISLATURE - FIRST SESSION

A BILL

For an Act entitled: "An Act relating to the Alaska Oil and Gas Conservation Commission; changing a court rule, Rule 732 of the Uniform Rules of Criminal Procedure, adopted by the Alaska Supreme Court under its constitutional rule-making authority; and providing for an effective date."

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* Sec. 7. This Act takes effect immediately under AS 01.10.070(c).

A M E N D M E N T

OFFERED IN THE HOUSE BY MENARD

TO: DRAFT CSHB 55( )

Page 1, line 7, after "Commission":

Insert ", and transferring its responsibility for reinjected water to the Department of Environmental Conservation"

Page 3, following line 15:

Insert new bill sections to read:

"* Sec. 6. AS 46.03.100(d) is amended to read:

(d) This section does not apply to injection projects permitted under AS 46.03.055 [AS 31.05.030(h)].

* Sec. 7. AS 46.03 is amended by adding a new section to read:

Sec. 46.03.055. REINJECTED WATER. (a) The department may take all actions necessary to allow the state to acquire primary enforcement responsibility under 42 U.S.C. 300h-4 (Safe Drinking Water Act of 1974, as amended, 42 U.S.C. 300f-300j) for the control of underground injection related to the recovery and production of oil and natural gas.

(b) The commissioner may not deny public access to information that is required to be disclosed under 42 U.S.C. 300h-4.

* Sec. 8. AS 31.05.030(h) and 31.05.035(e) are repealed.

* Sec. 9. TRANSITION. All litigation, hearings, investigations, and other proceedings pending under a law amended or repealed by this Act, or

in connection with functions transferred by this Act, continue in effect and may be continued and completed notwithstanding a transfer or amendment or repeal provided for in this Act. Certificates, orders, and regulations issued or adopted under authority of a law amended or repealed by this Act remain in effect for the term issued, or until revoked, vacated, or otherwise modified under the provisions of this Act. All contracts, rights, liabilities, and obligations created by or under a law amended or repealed by this Act, and in effect on the effective date of this Act, remain in effect notwithstanding this Act's taking effect. Records and other property of the Oil and Gas Conservation Commission held for purposes of administration of AS 31.05.030(h) are transferred commensurate with the provisions of this Act to the Department of Environmental Conservation."

Renumber the following bill sections accordingly.

STATE OF ALASKA
1989 LEGISLATIVE SESSION

BILL VERSION: HB 55
PUBLISH DATE: HOUSE 1/9/89

FISCAL NOTE

REQUEST:

Revision Date: _____
Title: An Act relating to the Alaska Oil & Gas Cons. Comm., Changing Court Rule
Sponsor: Rules Committee
Requestor: Governer

Agency Affected: Oil & Gas Cons. Comm.
BRU: Oil & Gas Cons. Comm.
Components: Operations

EXPENDITURES/REVENUES: (Thousands of Dollars)

OPERATING	FY 89	FY 90	FY 91	FY 92	FY 93	FY 94
PERSONAL SERVICES						
TRAVEL						
CONTRACTUAL						
SUPPLIES						
EQUIPMENT						
LAND & STRUCTURES						
GRANTS, CLAIMS						
MISCELLANEOUS						
TOTAL OPERATING	0	0	0	0	0	0
CAPITAL	0	0	0	0	0	0
REVENUE	0	0	0	0	0	0

FUNDING: (Thousands of Dollars)

GENERAL FUND						
FEDERAL FUNDS						
OTHER						
TOTAL	0	0	0	0	0	0

POSITIONS:

FULL-TIME	0	0	0	0	0	0
PART-TIME						
TEMPORARY						

ANALYSIS: (Attach a separate page if necessary)

Prepared by: C. V. Chatterton
Phone: (907) 279-1433
Division: Oil & Gas Conservation Comm
Date: _____

Approved by Commissioner: Larry Merculieff (for Kurt Marshall)
Date: 11/23/88
Agency: Department of Commerce & Economic Development

Distribution (by preparer):
- Legislative Finance
- Legislative Sponsor
- Requestor
- Office of Management and Budget
- Impacted Agency(ies)

LW/dg13071D-2
112388a

STATE OF ALASKA
1989 LEGISLATIVE SESSION

BILL VERSION: HB 55
PUBLISH DATE: HOUSE 1/9/89

FISCAL NOTE

REQUEST:

Revision Date:
Title: Underground Injection Program

Agency Affected: Natural Resources
BRU: Petroleum Management

Sponsor: Rules Committee
Requestor: ~~Governor Cowper~~

Components:

EXPENDITURES/REVENUES: (Thousands of Dollars)

OPERATING	FY 89	FY 90	FY 91	FY 92	FY 93	FY 94
PERSONAL SERVICES						
TRAVEL						
CONTRACTUAL						
SUPPLIES						
EQUIPMENT						
LAND & STRUCTURES						
GRANTS, CLAIMS						
MISCELLANEOUS						
TOTAL OPERATING	-0-	-0-	-0-	-0-	-0-	-0-
CAPITAL	-0-	-0-	-0-	-0-	-0-	-0-
REVENUE						

FUNDING: (Thousands of Dollars)

GENERAL FUND						
FEDERAL FUNDS						
OTHER						
TOTAL	-0-	-0-	-0-	-0-	0	0

POSITIONS:

FULL-TIME						
PART-TIME						
TEMPORARY						

ANALYSIS: (Attach a separate page if necessary)

This bill does not affect the Department of Natural Resources. The Oil and Gas Conservation Commission is located within the Department of Commerce and Economic Development.

Prepared by: Carol Wilson
Phone: 465-2400
Division: Commissioner's Office
Date: 11/28/88

Approved by Commissioner: Samuel Gorsuch
Date: 11-28-88
Agency: Natural Resources

Distribution (by preparer):
Legislative Finance
Legislative Sponsor
Requestor
Office of Management and Budget
Impacted Agency(ies)

STEVE COWPER
GOVERNOR

STATE OF ALASKA
OFFICE OF THE GOVERNOR
JUNEAU

January 9, 1989

The Honorable Sam Cotten
Speaker of the House
Alaska State Legislature
P.O. Box V
Juneau, AK 99811

Dear Representative Cotten:

Under the authority of art. III, sec. 18, of the Alaska Constitution, I am transmitting a bill relating to the Alaska Oil and and Gas Conservation Commission (commission). This bill offers revisions to AS 31.05 to improve the state's underground injection control (UIC) program for injection wells related to the recovery and production of oil and natural gas (Class II wells). It also conforms certain sections of AS 31.05 to the revised criminal code, and removes unnecessary restrictions on the commission's authority to regulate oil and gas activities.

The primary reason for this bill is the need to improve the state's UIC program to ensure continued federal funding. In 1984, CSHB 680(L&C) was enacted (ch. 91, SLA 1984). It authorized the commission to "take all actions necessary to allow the state to acquire primary enforcement responsibility under 42 U.S.C. 300h-4 (Safe Drinking Water Act of 1974, as amended, 42 U.S.C. 300f -- 300j), for the control of underground injection related to the recovery and production of oil and natural gas." AS 31.05.030(h). The commission prepared an application for a state UIC program for Class II wells, which was approved by the U.S. Environmental Protection Agency (EPA) in June 1986.

In their review of the state's UIC application, EPA staff identified certain provisions in AS 31.05 which could be amended to improve the state's proposed program. This set of amendments is now proposed as required under the terms of a memorandum of agreement between the commission and EPA, Region 10. If the changes requested by the EPA are not made, continued federal funding for the UIC program would possibly be jeopardized. During its periodic audits of the state's UIC program, EPA inquires as to the status of these amendments.

Another set of amendments, to the criminal provisions of AS 31.05, is recommended by the criminal division of the Department of Law. When the comprehensive rewrite of AS 11 and AS 12 was undertaken in 1981 and 1982, it was determined to be too great a task to attempt amendment of the state's other criminal provisions, scattered throughout the Alaska statutes, at the same time. As this bill amends AS 31.05 for other reasons, I believe it appropriate to take advantage of this opportunity to clean up the criminal provisions of AS 31.05, to make them consistent with AS 11 and AS 12, as revised.

A third amendment removes unnecessary restrictions on the commission's jurisdiction over federal land. All of these amendments are recommended by the Alaska Oil and Gas Conservation Commission and are discussed in more detail below.

The amendments of AS 31.05 in the bill are as follows:

Section 1. AS 31.05.027 is amended to eliminate state statutory limitations on the commission's jurisdiction over land of the United States.

Federal law requires that state UIC programs apply to underground injection occurring on property leased or owned by the United States. 42 U.S.C. 300h(b)(1)(D) and 300j-6. However, AS 31.05.027 presently provides in part:

> The authority of the commission . . . applies to land of the United States or to land subject to the jurisdiction of the United States only to the extent that control and supervision of conservation of oil and gas and prevention of waste by the United States on its land fails to carry out the intent and purposes of AS 31.05.005 -- 31.05.170, and otherwise applies to federal land so far as an officer of the United States having jurisdiction, or an authorized representative, shall approve any of the provisions of AS 31.05.005 -- 31.05.170 or orders of the commission which affect land.

The jurisdictional limitations of AS 31.05.027 first appeared as territorial legislation enacted in 1955, when Alaska's relationship to the federal government was far more subservient than after Alaska's acceptance into the Union. As a state, Alaska's potential jurisdiction over oil and gas activities on federal land is limited only by constitutional restrictions on the exercise of state police powers. See Myers, The Law of Pooling and Unitization, sec. 11.04 (2d Ed. 1985). AS 31.05.027 asserts less jurisdiction than is now constitutionally permissible. It would be amended by this bill to remove this potential impediment to the commission's regulation of oil and gas activities on federal land.

Section 2. AS 31.05.070(a) is amended to eliminate "transactional" immunity when a person is being compelled to testify or produce documents before the commission or a court, and to make its provisions consistent with the revised Alaska criminal code.

As it now reads, AS 31.05.070(a) affords a person transactional immunity if compelled to appear as a witness under that statute. This provision could preclude effective enforcement of the state's UIC requirements by foreclosing subsequent prosecution of that witness for violating a requirement of the state's UIC program. The provision is also inconsistent with the immunity provision of AS 12.50.-101. The amendments eliminate the immunity provision. Under the proposed language to be added to AS 31.05.070(a), a witness who asserts his or her privilege against self incrimination may be granted immunity and compelled by a court, under AS 12.50.101, to testify. The immunity will be immunity from the use of his or her testimony and any evidence derived from it. Language that disallows self-incrimination as a ground for excusing attendance, testimony, or production of books and records, is also deleted. That current language is potentially unconstitutional, and is unnecessary.

AS 31.05.070(a) also currently provides that a compelled witness is not exempt from prosecution and punishment for perjury committed while testifying. This provision would also be repealed because it duplicates provisions of the criminal code.

Sections 3 and 4. AS 31.05.150(a) and (b) are amended to eliminate the "wilful" standard from consideration in the imposition and recovery of civil penalties; to increase the civil penalties that may be imposed; to make sec. 150's provisions consistent with the provisions of the revised criminal code; and to establish criminal liability for violations of the commission's regulations and orders.

AS 31.05.150(a) currently imposes civil penalties for wilful violations of AS 31.05 or regulations or orders of the commission. However, there is no indication of the type of wilfulness required.

Use of the term "wilfully" in criminal statutes has traditionally required a showing of bad intent. Although evidence of bad intent is generally not required to impose civil penalties, amendment of the statute to eliminate the term would remove any doubt as to the ability of the state to impose civil penalties in the absence of evidence of bad intent.

The amendments would increase the amount of civil penalties imposable under AS 31.05.150(a) from "not more than $1,000" to "no more than $5,000 a day for each day of violation." The $1,000 amount, which was first established in 1955, might now be inadequate to deter violations. The increased penalty would more effectively accomplish deterrence.

Section 4 amends AS 31.50.150(b), which imposes criminal liability for falsifying records and committing similar offenses, to make the description of those offenses consistent with AS 11.46.630(a)(1) -- (4). The class A misdemeanor penalty classification raises the possible maximum term of imprisonment to one year but the amount of the fine is unaffected.

Section 5. AS 31.05.150 is amended by adding a new subsection (f), imposing criminal liability on a person who knowingly violates a regulation or order of the commission.

Section 6. Section 2 of this bill, providing for "use" immunity rather than "transactional" immunity, amends a court rule that was adopted in a somewhat unusual manner. This section takes a cautious approach, to assure compliance with art. IV, sec. 15, of the Alaska Constitution, regarding legislative change of a court rule.

Section 2 would, for commission sanctions, amend Rule 732 of the Uniform Rules of Criminal Procedure (promulgated by the National Conference of Commissioners on Uniform State Laws in 1984). This rule does not appear in the publication of Alaska Court Rules, but rather was adopted by the Alaska Supreme Court in a decision, State v. Serdahley, 635 P.2d 1182 (Alaska 1981). A Superior Court judge has held that a legislative change of the substance of that rule requires the same procedures as for a legislative change of any other court rule.

Thus, sec. 6 cites the court rule and describes the change, as required by Rule 39(e), Uniform Rules of the Alaska State Legislature. Also, in compliance with that legislative rule, the title of the bill mentions the court-rule change. If this bill passes but the section making that change does not receive a two-thirds vote in favor of it, and if the amended statute is challenged in court, the Alaska Supreme Court will, of course, have the final word on whether these legislative procedures were necessary.

I urge your prompt action on this measure to strengthen the state's UIC program and to update AS 31.05.

Sincerely,

Steve Cowper
Governor

April 14, 1989

Testimony on HB 55
before the House Resources Committee

The Safe Drinking Water Act sets forth procedures for use of deep wells for disposal of various wastes. Underground injection is a method of disposal where wastes are pumped into a geologic formation that is supposed to be first evaluated for its compatibility with the wastes, and capacity to hold the wastes in place. Pressure is critical since fluids must have sufficient pressure to displace native fluids yet not so much pressure that formation is fractured or waste migrates.

The Environmental Protection Agency issues permits and regulates these wells, by five classes, depending on waste type. As with many environmental laws, EPA delegates parts to the state. In Alaska's case, EPA delegated the Class II portion of the program to the Alaska Oil and Gas Conservation Commission in 1986.

Alaska Center for the Environment opposed this transference at that time because we saw inherent conflict in having the same agency that regulates oil and gas production also attempt to enforce environmental protection laws. Since evaluating AOGCC's performance since it has had authority over the injection program, we feel even more strongly that it is unable to adequately manage the injection program, thus seriously jeopardizing both the Alaskan environment and the future of Alaskans health.

Some of the problems are:

1. Class II wastes are defined as nonhazardous and strictly related to oil and gas production, such as produced waters, which are fluids that are brought to the surface with oil and gas. These wastes can be dangerous because of corrosivity, chemical additives, and presence of carcinogens, such as benzene. The wastes are far from benign and warrant careful handling and disposal.

2. Once injected, there is a high degree of uncertainty as to what happens to the wastes. It is a classsic OUT OF SIGHT, OUT OF MIND disposal method. Wastes can travel miles to resurface in other wells, contaminate groundwater, or cause drastic changes in the environment including inducement of earthquakes.

3. Full containment of the wastes is not always assured. Of 18 permit applications submitted to and approved by AOGCC, at least 8 failed to test for compatibility of wastes with the confining layer, which is the geologic strata meant to hold the waste in place. Four applications failed to even discuss or describe the confining layers.

3. AOGCC's loose attitude toward regulation is typically based on agreement with the industry's presumption that the groundwater in the area is not usable as drinking water. In fact, in 100% of the well permits issued that were not already in aquifers defined as not usable for drinking, AOGCC granted exemptions, resulting in far less measures taken for environmental protection. AOGCC allows exemptions anytime they are requested, despite the fact that waters even more "salty" are treated and used. Industry is not required by AOGCC to actually measure the "salt" content of the water, but is allowed to use an estimation, contrary to federal requirements.

4. AOGCC has allowed and looked the other way when illegal disposal of wastes not classified as Class II.

5. Though an EPA Audit states that "widespread public involvement" has been a part of the AOGCC program, this is far from the truth. AOGCC has been hostile towards requests for information from the public and has showed ineptness in trying to follow federal requirements for public participation.

6. AOGCC has granted waivers to allow continued injection despite failed safety tests.

SUMMARY

While HB55 is needed in the short-term in order to make AOGCC's authority for penalties consistent with federal requriements and so we encourage its passage; we also strongly urge you to consider working with the administration or developing legislation that would tranfer injection well authority to DEC.

by Kristine Benson
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STANDARD ALASKA PRODUCTION COMPANY

STATEMENT ON HB 186 - March 17, 1988

HB 186, in Section 2, seeks to (i) amend AS 31.05.035(c) to limit its application to all exploratory wells, and (ii) exclude wells drilled on private lands from the benefits of extended confidentiality, while providing these benefits to wells drilled on State lands. Standard believes no legitimate public interest is served by this discriminatory treatment of wells drilled on private lands.

In Alaska's unique frontier environment, years may elapse between the drilling of an exploratory well and the disposition of unleased acreage nearby. Almost any well yields significant information about nearby lands, both State and private, and has considerable commercial value. Alaska exploratory wells are extremely expensive. The capital investment required to drill a well is simply not justified unless the information obtained thereby is maintained in a confidential status until nearby lands are leased. Therefore, Standard believes the proposed language on lines 2 and 3 on page 2 of HB 186 should be eliminated.

Standard has consistently objected to the removal of provisions providing protection for exploratory wells, delineation wells or development wells which are deepened to new horizons. However, Standard has no objection to the immediate release of information from wells drilled strictly in a development setting. Accordingly, Standard would support provisions relieving the Alaska Oil and Gas Conservation Commission from this administrative burden.

Standard believes the encouragement of the drilling of exploratory wells on all lands is in the overall best interest of the State and is the key to continued development of the oil and gas industry in Alaska. Unless provisions are made for protection of information obtained from this activity, no incentive will exist to engage in exploration in areas where development could require decades.

TESTIMONY OFFERED ON MARCH 17, 1988
BEFORE THE ALASKA HOUSE OF REPRESENTATIVES
RESOURCES COMMITTEE
REGARDING HOUSE BILL 186

By J. R. Carson

Thank you, Mr. Chairman. My name is John Carson. I am the Chief Geologist for Chevron U.S.A.'s Western Region. I have been a petroleum geologist for 32 years and have spent nearly two-thirds of that time working on Alaska exploration. I speak today on behalf of Chevron. I appreciate the opportunity to testify on this matter of importance to both the State and the petroleum industry. My remarks will be brief. I will be glad to answer questions.

Chevron opposes Section 2 of House Bill (HB) 186 which amends AS 31.05.035(c). The issue is extended confidentiality of well data. HB 186 proposes restricting eligibility for extended confidentiality to exploratory wells only and to further restrict eligibility to only those wells drilled on state lands.

As we stated in testimony during last year's session with reference to HB 41, Chevron believes the current law is fair, well-intended, and in the best interest of the State as well as the industry. I will not repeat that total testimony here today, but will sum it up by saying we feel that the opportunity to apply for extended confidentiality encourages operators to expend risk capital in the search for oil and gas; they can count on their sensitive data being held from other operators while waiting for a sale to be scheduled and held. Further, the surrounding landowners will receive higher sale bids and leasing bonuses if the data are held confidential. The benefit to all will be increased drilling over a long period of time which should lead to discovery of more reserves. For your further information, we have attached a copy of Chevron's testimony on HB 41 offered last April.

Chevron's objections to Sec. 2 of HB 186 are twofold: first, the limitation of extended confidentiality to exploratory wells, and second, the elimination of extended confidentiality provision for wells drilled on lands other than those owned by the State.

Chevron has no objection to routine development wells being excluded from eligibility; however, problems arise when delineation or development wells drilled below the producing zones are not afforded confidential status. Such wells may not fall in the State's definition of exploratory wells. Often, the data from these wells is highly critical. Provisions should be made to cover these wells as well as stratigraphic tests which are drilled solely to gain information about the rocks in the subsurface.

In discussing the limitation of extended confidentiality to wells drilled on state lands, I would like to make three points: 1) oil knows no political boundaries, 2) the AOGCC's obligation is to protect all landowners, and 3) the makeup of landownership in Alaska, which confirms the need for the current law.

Oil and gas accumulations and their accompanying rock formations have no coincidence with or regard for political boundaries. Consequently, enacting legislation that discriminates as to ownership is futile. Oil is where you find it and accumulations are rarely on one landowner's domain. Prudhoe Bay is a notable exception.

The AOGCC is empowered to subject its policing authority to all lands of the state regardless of ownership (Sec. 1 of HB 186 clarifies this authority). This authority should carry with it an obligation to protect, as well as police, all of the

landowners of the state. Surely, the federal government and private landowners, whether they be Alaska natives or individuals, deserve the same protection as the State. If HB 186 is enacted, operators would tend to drill on state lands to the detriment of the private landowner and the federal government.

An argument for relaxation of extended confidentiality is that the law was enacted for a special situation — the Beaufort Sea Sale of 1979 — and is no longer needed. We believe the policy considerations which gave rise to the law remain wholly applicable today. There are too many variables in the Alaska political scene to assure sales coming off as scheduled. In addition, the 6,640-mile long coast line of Alaska has the same multiple landownership at every mile that was responsible for sale delays in the Beaufort in 1979. The 1979 sale may have been unique in that the two government agencies were able to work out a joint sale. Typically state and federal agencies hold sales at different times in the same area while private landowners lease when the demand exists. This complication of various leasing dates is the reason that extended confidentiality eligibility on <u>all</u> lands is so important.

HB 186 acknowledges that extended confidentiality for exploratory well data is appropriate, but unfairly limits its effect to wells drilled on state lands.

As presently drafted, HB 186 would apply to well data presently on file with the State. We have previously expressed our grave concern with this type of retroactive legislation. The present version of HB 41 recognizes these concerns. That bill has been amended to prevent retroactive consideration. A similar amendment should be made to HB 186.

In summary, AS 31.05.035(c) currently provides protection for all parties concerned; the state, the landowners, and the operators. Continuation of this law unchanged will, in the long run, encourage drilling for oil and gas and, hopefully, in finding new reserves which will offset foreign oil dependency and strengthen Alaska's economy.

Thank you. I will be glad to answer any questions you may have.