Approved April 5, 1990
Date

MINUTES OF THE HOUSE COMMITTEE ON ENERGY AND NATURAL RESOURCES.

The meeting was called to order by Representative Dennis Spaniol at
Chairperson

3:30 ~~a.m.~~/p.m. on March 27, 1990 in room 526-S of the Capitol.

All members were present except:

Committee staff present:
Raney Gilliland, Principal Analyst, Legislative Research
Mary Torrence, Revisor of Statutes' Office
Maggie French, Committee Secretary

Conferees appearing before the committee:
Senator Gerald Karr, Seventeenth District
Mr. Charles H. Nicolay, Kansas Oil Marketers Association
Mr. David M. Traster, Assistant Secretary and General Counsel, Department of Health and Environment
Mr. Byron Ulery, Farmway Co-op, Inc., Beloit, Kansas
Mr. Joe Lieber, Executive Vice President, Kansas Cooperative Council
Ms. Cynthia Lutz Kelly, Deputy General Counsel, Kansas Association of School Boards
Ms. Nancy E. Kantola, Legislative Agent, Committee of Kansas Farm Organizations
Mr. Howard Tice, Executive Director, Kansas Association of Wheat Growers
Ms. Chris Wilson, Director of Governmental Relations, Kansas Grain and Feed Association
Mr. Tom Whitaker, Governmental Relations Director, Kansas Motor Carriers Association
Mr. Bob Johnson, Jr., Independent Insurance Agents of Kansas
Mr. Theop Inslee, Ada, Oklahoma
Mr. Verl Stevens, Biosponge Aquaculture Products Company
Mr. Mark L. Hajek, President, Kansas Commercial Fish Growers Association
Mr. Gary Bruch, Past President, Kansas Commercial Fish Growers
Mr. Charles W. Wallace, Secretary-Treasurer, Kansas Commercial Fish Growers Association
Mr. Sidney Corbin, Towanda, Kansas
Mr. Robert L. Meinen, Secretary, Kansas Department of Wildlife and Parks
Ms. Joyce Wolf, Kansas Audubon Council
Dr. Frank B. Cross, Division of Fishes, Museum of Natural History, University of Kansas
Mr. Jerry Hazlett, Kansas Wildlife Federation, Inc.
Mr. Gerald Lauber, Topeka, Kansas

Chairman Dennis Spaniol called the meeting to order.

Senate Bill No. 554 -- An act amending the Kansas storage tank act; providing for the administration and disbursement of moneys from the petroleum storage tank release trust fund.

Chairman Spaniol announced the Environmental Protection Agency has postponed for one year compliance with new environmental rules for leaking underground storage tanks. He recommended adoption of a balloon amendment to Senate Bill No. 554 which was distributed to the committee, stating it was the result of many hours of negotiation. He commented the balloon amendment would be a standard reference point on which the conferees could present testimony and assured the committee that when final action is taken on the bill they will be given full opportunity

to amend and debate any aspect of the balloon amendment (Attachment 1). Representative Roenbaugh moved to adopt the balloon amendment to Senate Bill No. 554 and Representative Sughrue seconded the motion. Motion passed. Chairman Spaniol advised conferees copies of the balloon amendment are available on request.

The chairman recognized Mr. Charles H. Nicolay, Kansas Oil Marketers Association. Mr. Nicolay presented testimony on Senate Bill No. 554, stating he urged the committee to act favorably on the bill; however, he commented there are sections of the bill he cannot support and outlined his objections. Chairman Spaniol said one area which remains unresolved is the threshold on the size of business and the committee would have an up or down policy vote on that particular measure. He stated he understood Representative McClure would be offering an amendment on this section of the bill. Discussion by the committee included the ten million dollar cap; raising the cap to a much higher threshold, pollution problems, etc.

Chairman Spaniol announced copies of a letter requesting an amendment to Senate Bill No. 554 had been made available to all committee members from Mr. T. L. Green, Attorney at Law, Topeka, Kansas (Attachment 2).

Mr. David M. Traster, Assistant Secretary and General Counsel, Department of Health and Environment, was requested by the chairman to present an overview of Senate Bill No. 554. Mr. Traster indicated the amendments to the Kansas Storage Tank Act and the House subcommittee revisions are methods for addressing the issues of third party liability coverage and retroactive coverage for underground storage tanks. The committee discussed limit on coverage; the provision of two million dollars worth of coverage if voluntary insurance is purchased; one million dollars for clean up only and no coverage for third party liability if voluntary insurance is not purchased. (Attachment 3)

Written testimony supporting Senate Bill No. 554 from Ray J. and Janet S. Renz, Renz Oil, Rush Center, Kansas (Attachment 4) and from Harley and Rosalie Renz, Rush Center Oil Company, Inc., Rush Center, Kansas (Attachment 5), was distributed to the committee at the request of the chairman although no oral testimony was given.

Mr. Joe Lieber, Kansas Cooperative Council, was called on by the chair. Mr. Lieber introduced Mr. Byron Ulery, Farmway Co-op, Inc., Beloit, Kansas, who testified as a proponent on Senate Bill No. 554 expressing concern about the lack of third party liability provisions (Attachment 6). Mr. Ulery mentioned written testimony had been distributed to the committee from Mr. Darrel Schroeder, Tipton, Kansas (Attachment 7) who was also present.

The chairman recognized Mr. Joe Lieber, Executive Vice President, Kansas Cooperative Council. Mr. Lieber testified in support of Senate Bill No. 554; however, he recommended amendments to the bill and commented that small firms should be able to use the clean-up fund (Attachment 8).

Ms. Cynthia Lutz Kelly, Deputy General Counsel, Kansas Association of School Boards, testified in favor of Senate Bill No. 554 when called on by the chairman. She furnished the committee with copies of a survey performed by the school district and encouraged at least partial reimbursement of clean up costs (Attachments 9 and 10). During discussion by the committee, the chairman advised more suitable language will be addressed to clarify inability to procure insurance.

The chairman recognized Ms. Nancy E. Kantola, Legislative Agent, Committee of Kansas Farm Organizations. Ms. Kantola urged support of Senate Bill No. 554 because of the potential effect on suppliers of petroleum products in small towns and rural areas (Attachment 11).

Mr. Howard Tice, Executive Director, Kansas Association of Wheat Growers, was called on by the chairman and testified in favor of Senate Bill No. 554. He read the resolution passed by the Kansas Association of Wheat Growers at their annual convention on December 11, 1989 (Attachment 12).

Chairman Spaniol requested Ms. Chris Wilson, Director of Governmental Relations, Kansas Grain and Feed Association to present her testimony. Ms. Wilson testified as a proponent on Senate Bill No. 554 requesting the bill be amended to make all owners and operators of storage tanks eligible for accessing the trust fund (Attachment 13).

Mr. Tom Whitaker, Governmental Relations Director, Kansas Motor Carriers Association, was recognized by the chairman and testified as a proponent on Senate Bill No. 554. Kansas Motor Carriers Association requested the ten million dollar cap be removed from the bill (Attachment 14).

Mr. Bob Johnson, Jr., Independent Insurance Agents of Kansas, was the next conferee recognized by the chair. Mr. Johnson requested the committee to support Senate Bill No. 554.

Discussion following included questions from the committee regarding sale of gasoline as a service at a loss by cooperatives; percentage of cooperatives exempt under the law; reasons why some cooperatives do sell fuel at a loss; if there is a profit on petroleum sales by cooperatives; and if there are any plans to close some of the stations if Senate Bill No. 554 is not passed.

The chairman concluded the hearing on Senate Bill No. 554.

Chairman Spaniol advised the committee there would be a meeting on March 28, 1990, at a time and location to be announced.

Senate Bill No. 158 -- An act concerning wildlife; relating to prohibition of certain fish from waters of the state.

Chairman Spaniol welcomed Senator Gerald Karr, Seventeenth District, to the House Energy and Natural Resources Committee meeting. Senator Karr presented an overview of Senate Bill No. 158 and distributed a proposed balloon amendment to the committee (Attachment 15).

Mr. Theop Inslee, Ada, Oklahoma, was recognized by the chairman. Mr. Inslee testified in favor of Senate Bill No. 158 furnishing information on the history, range, and advantages of bighead carp. He commented the fish groups recommending passage of this bill are vitally concerned about the environment (Attachment 16).

The chairman called on Mr. Verl Stevens, Biosponge Aquaculture Products Company, who recommended that bighead carp be approved for use in Kansas in his testimony supporting Senate Bill No. 158 (Attachment 17).

Chairman Spaniol recognized Mr. Mark L. Hajek, President, Kansas Commercial Fish Growers Association, who urged the committee to consider legalizing the bighead carp in Kansas as an excellent and environmentally safe way to maintain good water quality in productions ponds (Attachment 18).

Mr. Gary Bruch, Past President, Kansas Commercial Fish Growers, was called on by the chairman and presented testimony as a proponent on Senate Bill No. 158, stating the bighead carp is recognized throughout the world because of its versatility in aquaculture operations (Attachment 19).

Mr. Charles Wallace, Secretary-Treasurer, Kansas Commercial Fish Growers Association, responded to the chairman's request for his testimony and testified in favor of Senate Bill No. 158. Mr. Wallace stated his association feels they are being discriminated against by the Kansas Department of Wildlife and Parks because bighead carp are not permitted in Kansas (Attachment 20).

The chair requested Mr. Sidney Corbin, Towanda, Kansas, to present his testimony. Mr. Corbin testified in support of Senate Bill No. 158, stating fish farmers can be in competition with other states and improve business if the bill is passed. Mr. Corbin removed a live bighead carp from a cooler to show to the committee and discussed the advantages of having this fish in farm ponds, etc. (Attachment 21).

Mr. Robert L. Meinen, Secretary, Kansas Department of Wildlife and Parks, was recognized by the chair. Mr. Meinen testified as an opponent to Senate Bill No. 158, encouraging the committee to review the attachments to his testimony. He stated Mr. Sidney Corbin may be cited for having a bighead carp in Kansas since it is an illegal fish. Mr. Meinen commented the Kansas Department of Wildlife and Parks is willing to further discuss the issue and referred the committee to the Carp Task Force report which is attached to his testimony (Attachment 22). He urged the committee to vote this bill down and to work with the Kansas Department of Wildlife and Parks to come up with a realistic bill.

Ms. Joyce Wolf, Kansas Audubon Council, was the next conferee called on by the chairman. She presented testimony as an opponent to Senate Bill No. 158, stating there are profound adverse effects on native species that can result from the introduction of non-native species (Attachment 23).

The chairman recognized Dr. Frank Cross, Division of Fishes, Museum of Natural History, University of Kansas, who urged rejection of Senate Bill No. 158, commenting it will trade a little bit of economic gain for an awful lot of long-term loss if it passes (Attachment 24).

Mr. Jerry Hazlett, Kansas Wildlife Federation, Inc., was called on by the chairman. He presented testimony in opposition to Senate Bill No. 158, urging the committee not to gamble with the state's recreational facilities (Attachment 25).

Mr. Gerald Lauber, a concerned sportsman from Topeka, Kansas, presented his testimony at the request of the chairman. Mr. Lauber testified as an opponent to Senate Bill No. 158, stating the danger of proliferation is obvious (Attachment 26).

The chairman offered apologies from the committee to two conferees who were present but would be unable to give oral testimony due to time limitation. He informed Mr. Scott Andrews, Kansas Chapter of the Sierra Club (Attachment 27) and Mr. Randy Schademann, President-elect, Kansas Chapter of the American Fisheries Society (Attachment 28), their testimony had been distributed to the committee.

Chairman Spaniol advised the committee the next meeting would be held during House recess on March 28, 1990.

The meeting adjourned at 5:03 p.m.

Date: 3-27-90

GUEST REGISTER

HOUSE

COMMITTEE ON ENERGY AND NATURAL RESOURCES

NAME	ORGANIZATION	ADDRESS	PHONE
Tom Whitaker	Ks Motor Carriers Assn	Topeka	
Nancy Fontana	Com of Kansas Farm Orgs	Topeka	
Diane Gruver	KS Co-op Council	Topeka	
Joe Lieber	Ks Co-op Council	Topeka	
Byron Ulery	Farmway Coop	Beloit	
Darrell Schroeder	Farmer	Tipton	
Melvin L Jordan	Farmway Coop	Beloit	
Emerson L. Botts	Farmway Coop	Lincoln	
Robert Eaton	Mid Cont Oil Assn	Ottawa	
Kathy Taylor	KS Bankers Assn	Topeka	
DAN STEVENS	TEXACO INC.	TULSA, OK	
Bob Hartman	KS Wildlife & Parks Dept.	Pratt, KS	
Scott Andrews	KS Chapt Sierra Club	Topeka, KS	
Joyce Wolf	Ks. Audubon Council	Lawrence	
Beverly Stephenson	Corporation Commission	Topeka	
[illegible]	Intern-Rep Lynch	Lawrence	
EMILY WILLIAMS	KAC	TOPEKA	
Bob Totten Jr	IIAK -	Lawrence	
Brenda Street	Fish Growers	Shawnee City	
Larry Kruche	KDHE	Topeka	
ART BROWN	KS Lumber dealers	K.C. Mo	
Jaliey Renz	The Renzoil	Russell, Ks	

Date: 3-27-90

GUEST REGISTER

HOUSE

COMMITTEE ON ENERGY AND NATURAL RESOURCES

NAME	ORGANIZATION	ADDRESS	PHONE
H. W. Rowe	Rush Center Coil Inc	Rush Center Ks	913 372 4376
Ray Pathert	Kans. Insurance Dept.	Topeka, Ks	296-7845
Cathy Holderman	City of Wichita	Wichita	268-4351
Prof. Malcolm Jenkins	Fish Game	Manhattan	539-4819
Howard W. Tice	Ks Assn of Water Districts	Hutchinson	316-662-2367
T. L. Green	Mid States Port Authority	Topeka	273-0727
Gerald Lauber	Sportsman	Topeka	2340419
Charles Nicolay	KOMA	Topeka	233-9655
DAN BAILEY	KOMA	Topeka	232-0753
STEVE KEARNEY	COASTAL	"	233-4512
CINDY KELLY	KASB	TOPEKA	273-3600
Bob Meinen	KDW&P	Top	2281
DARRELL MONTEI	KDW&P	PRATT	"
Ron Hammerschmidt	KDHE	Topeka	6170
STAN GRANT	KDHE	TOPEKA	1522
DAVID M. TRASTER	"	"	1522
CHUCK STUART	United Telephone	Topeka	232-6586
Charlene Stinard	Ks Natural Resource Council	Topeka	233-6707

BILL NO. SB 554

BILL TITLE: An act amending the Kansas storage tank act; providing for the administration and dis- HEARING DATE 3-27-90
bursement of moneys from the petroleum storage tank release trust fund

CONFEREES	PROPONENT ~~OPPONENT~~	NOTIFIED	ADDRESS	PHONE
Janet Renz	Proponent	3-23-90	Renz Oil Rush Center, Kansas	913 222-2704
Harley Renz	Proponent	3-23-90	Rush Center, Kansas	913 372-4378
Joe Lieber	Proponent	3-23-90	Kansas Cooperative Council	233-4085
Byron Ulery	Proponent	3-23-90	Beloit, Kansas	
Cindy Kelly	Proponent	3-23-90	Kansas Association of School Boards	273-3600
Nancy Kantola	Proponent	3-23-90	Committee of Kansas Farm Organizations	273-5340
Charles H. Nicolay	Proponent	3-26-90	Kansas Oil Marketers Association	
David M. Traster	Proponent	3-27-90	General Counsel, Kansas Department of Health and Environment	
Thomas A. Whitaker	Proponent	3-27-90	Governmental Relations Director Kansas Motor Carriers Association	
Howard W. Tice	Proponent	3-27-90	Kansas Association of Wheat Growers	
Chris Wilson	Proponent	3-27-90	Kansas Grain and Feed Association	
Bob Johnson, Jr.	Proponent	3-26-90	Member, Independent Insurance Agents of Kansas	

NO OPPONENTS TESTIFIED.

BILL NO. SB 158

BILL TITLE: An act concerning wildlife; relating to prohibition of certain fish from waters of the state

HEARING DATE 3-27-90

CONFEREES	PROPONENT XXXXXXXXX	NOTIFIED	ADDRESS	PHONE
Senator Gerald Karr	Proponent	3-21-90	State Capitol	
Theop Inslee	Proponent	3-22-90	Ada, Oklahoma	
Verl Stevens	Proponent	3-22-90	Pratt, Kansas	
Mark Hajek	Proponent	3-22-90	President, Kansas Commercial Fish Growers Association	
Gary Bruch	Proponent	3-22-90	Member, Kansas Commercial Fish Growers Association	316 273-6481
Charles Wallace	Proponent	3-22-90	Secretary, Kansas Commercial Fish Growers Association	316 443-5528
Sidney Corbin	Proponent	3-22-90	Owner of fish growing operation, Towanda, Kansas	316 775-2631
	OPPONENT			
Dr. Frank Cross	Opponent	3-21-90	Kansas Museum of Natural History	913 864-4920
Joyce Wolf	Opponent	3-22-90	Kansas Audubon Council	
Jerry Hazlett	Opponent	3-26-90	Kansas Wildlife Federation	
Gerald Lauber	Opponent	3-26-90	Topeka, Kansas	
Robert L. Meinen	Opponent	3-27-90	Secretary, Kansas Department of Wildlife and Parks	
Scott Andrews	Opponent	3-27-90	Sierra Club Kansas Chapter	
Randy Schademann	Opponent	3-27-90	Kansas Chapter of the American Fisheries Society	

As Amended by Senate Committee

Session of 1990

SENATE BILL No. 554

By Committee on Energy and Natural Resources

1-25

AN ACT ~~amending the Kansas storage tank act; providing for the administration and disbursement of moneys from the petroleum storage tank release trust fund; amending K.S.A. 1989 Supp. 65-34,105,~~ 65-34,114, 65-34,115, *65-34,117,* 65-34,119 and ~~65-34,120~~ and repealing the existing sections. relating to underground petroleum storage tanks; concerning certain releases therefrom and payment of certain costs and compensation relating thereto; amending K.S.A. 1989 Supp. 65-34,114 and 65-34,119

Be it enacted by the Legislature of the State of Kansas:

~~Section 1. K.S.A. 1989 Supp. 65-34,105 is hereby amended to read as follows: 65-34,105. (a) The secretary is authorized and directed to adopt rules and regulations necessary to administer and enforce the provisions of this act. Any rules and regulations so adopted shall be reasonably necessary to preserve, protect and maintain the waters and other natural resources of this state, and reasonably necessary to provide for the prompt investigation and cleanup of sites contaminated by a release from a storage tank. In addition, any rules and regulations or portions thereof which pertain to underground storage tanks or the owners and operators thereof shall be adopted for the purpose of enabling the secretary and the department to implement the federal act, and such rules and regulations so adopted shall be consistent with the federal act. Consistent with these purposes, the secretary shall adopt rules and regulations:~~

~~(1) Establishing performance standards for underground storage tanks first brought into use on or after the effective date of this act. The performance standards for new underground storage tanks shall include, but are not limited to, design, construction, installation, release detection and product compatibility standards;~~

~~(2) establishing performance standards for above ground storage tanks brought into use after the effective date of this act. The performance standards for new above ground storage tanks shall include, but are not limited to, design, construction, installation, release detection and product compatibility~~

H ENERGY AND NR 3-27-90 ATTACHMENT 1

~~inspections. The total amount of fees shall not exceed the amount of revenue required for the proper administration of the provisions of this act. All fees shall be deposited in the state general fund;~~

~~(11) for determining the qualifications, adequacy of performance and financial responsibility of persons desiring to be licensed as underground storage tank installers or contractors. In adopting rules and regulations, the secretary may specify classes of specialized activities, such as the installation of corrosion protection devices or inground relining of underground storage tanks, and may require persons wishing to engage in such activities to demonstrate additional qualifications to perform these services;~~

~~(12) prescribing fees for the issuance of licenses to underground storage tank installers and contractors. The fees shall not exceed the amount of revenue determined by the secretary to be required for administration of the provisions of K.S.A. 1989 Supp. 65-34,110; and~~

~~(13) adopting schedules requiring the retrofitting of underground storage tanks in existence on the effective date of this act and for the retirement from service of underground storage tanks placed in service prior to the effective date of this act. Such schedules shall be based on the age and location of the storage tank and the type of substance stored. Such retrofitting shall include secondary containment, corrosion protection, linings, leak detection equipment and spill and overfill equipment.~~

~~(b) In adopting rules and regulations under this section, the secretary shall take notice of rules and regulations pertaining to fire prevention and safety adopted by the state fire marshal pursuant to subsection (a)(1) of K.S.A. 31-133, and amendments thereto.~~

~~(c) Nothing in this section shall interfere with the right of a city or county having authority to adopt a building or fire code from imposing requirements more stringent than those adopted by the secretary pursuant to subsections (a)(1), (2), (3), (7) and (13), or affect the exercise of powers by cities, counties and townships regarding the location of storage tanks and the visual compatibility of above ground storage tanks with surrounding property.~~

~~Sec. 2.~~ *Section 1.* K.S.A. 1989 Supp. 65-34,114 is hereby amended to read as follows: 65-34,114. (a) There is hereby established as a segregated fund in the state treasury the petroleum storage tank

release trust fund, to be administered by the secretary. Revenue from the following sources shall be deposited in the state treasury and credited to the fund:

(1) The proceeds of the environmental assurance fee imposed by this act;

(2) any moneys recovered by the state under the provisions of this act, including administrative expenses, civil penalties and moneys paid under an agreement, stipulation or settlement;

(3) interest attributable to investment of moneys in the fund; and

(4) moneys received by the secretary in the form of gifts, grants, reimbursements or appropriations from any source intended to be used for the purposes of the fund, but excluding federal grants and cooperative agreements; and

(5) amounts transferred to the fund by the plan adopted pursuant to section 4, as provided by section 4

(b) The fund shall be administered so as to assist owners and operators of underground petroleum storage tanks in providing evidence of financial responsibility for corrective action required by a release from any such tank. Moneys deposited in the fund may be expended for the purpose of reimbursing owners and operators for the costs of corrective action *and for indemnifying owners and operators for* ~~the costs of compensating~~ *any liability third parties for bodily injury or property damage caused by a release from an underground storage tank* subject to the conditions and limitations prescribed by this act, but moneys in the fund shall not be used otherwise for compensating third parties for bodily injury or property damage caused by a release from an underground petroleum storage tank, other than property damage included in a corrective action plan approved by the secretary. In addition, moneys deposited in the fund may be expended for the following purposes:

transfers to the plan adopted pursuant to section 4, as provided by section 4

(1) To permit the secretary to take whatever emergency action is necessary or appropriate to assure that the public health or safety is not threatened whenever there is a release from an underground petroleum storage tank;

(2) to permit the secretary to take corrective action where the release presents an actual or potential threat to human health or the environment, if the owner or operator has not been identified or is unable or unwilling to perform corrective action, including but not limited to, providing for alternative water supplies;

(3) payment of the state's share of the federal leaking underground storage tank trust fund cleanup costs, as required by the resource conservation and recovery act, 42 U.S.C. § 6991b(h)(7)(B); and

(4) payment of the administrative, technical and legal costs incurred by the secretary in carrying out the provisions of sections 15

through 25, including the cost of any additional employees or increased general operating costs of the department attributable thereto, which costs shall not be payable from any moneys other than those credited to the fund.

(c) The petroleum storage tank release trust fund shall be used for the purposes set forth in this act and for no other governmental purposes. It is the intent of the legislature that the fund shall remain intact and inviolate for the purposes set forth in this act, and moneys in the fund shall not be subject to the provisions of K.S.A. 75-3722, 75-3725a and 75-3726a, and amendments thereto.

(d) Neither the state of Kansas nor the petroleum storage tank release trust fund shall be liable to an owner or operator for the loss of business, damages or taking of property associated with any corrective or enforcement action taken pursuant to this act.

(e) The pooled money investment board may invest and reinvest moneys in the fund established under this section in obligations of the United States or obligations the principal and interest of which are guaranteed by the United States or in interest-bearing time deposits in any commercial bank or trust company located in Kansas or, if the board determines that it is impossible to deposit such moneys in such time deposits, in repurchase agreements of less than 30 days' duration with a Kansas bank or with a primary government securities dealer which reports to the market reports division of the federal reserve bank of New York for direct obligations of, or obligations that are insured as to principal and interest by, the United States government or any agency thereof. Any income or interest earned by such investments shall be credited to the fund.

(f) All expenditures from the fund shall be made in accordance with appropriation acts upon warrants of the director of accounts and reports issued pursuant to vouchers approved by the secretary for the purposes set forth in this section.

Sec. 3 2. K.S.A. 1989 Supp. 65-34,115 is hereby amended to read as follows: 65-34,115. Except as otherwise provided in this act, an owner or operator of an underground petroleum storage tank, or both, shall be liable for: *(a)* All costs of corrective action taken in response to a release from such petroleum storage tank; *and (b)* ~~*compensating*~~ *any liability to third parties for bodily injury or property damage caused by a release from such petroleum storage tank*. Eligibility to participate in the petroleum storage tank release trust fund may be submitted as evidence of financial responsibility required of owners and operators of underground petroleum storage tanks.

strike bracketed language

Sec. 4 2. K.S.A. 1989 Supp. 65-34,119 is hereby amended to

K.S.A. 1989 Supp. 65-34,114 through 65-34,124, and amendments thereto

read as follows: 65-34,119. (a) An owner or operator of an underground petroleum storage tank, other than the United States government or any of its agencies, who is in substantial compliance, as provided in subsections (d) and (e), and who undertakes corrective action, either through personnel of the owner or operator or through response action contractors or subcontractors, is entitled to reimbursement of reasonable corrective action costs from the fund, subject to the following provisions:

(1) An owner or operator who is not a petroleum marketer and who owns or operates not more than four underground petroleum storage tanks shall be liable for the first $5,000 of costs of corrective action taken in response to a release from any such petroleum storage tank, provided all petroleum or petroleum products are not stored for purposes of resale.

(2) Except as otherwise provided by subsection (a)(1), the owner or operator of not more than 12 underground petroleum storage tanks shall be liable for the first $10,000 of costs of corrective action taken in response to a release from any such petroleum storage tank;

(3) the owner or operator of at least 13 and not more than 99 underground petroleum storage tanks shall be liable for the first $20,000 of costs of corrective action taken in response to a release from any such petroleum storage tank;

(4) the owner or operator of more than 99 underground petroleum storage tanks shall be liable for the first $60,000 of costs of corrective action taken in response to a release from any such petroleum storage tank;

(5) the owner or operator shall be liable for all costs of corrective action related to a release if the secretary determines that such owner or operator allowed, failed to report or failed to take corrective action in response to such release, knowing or having reason to know of such release;

(6) the owner or operator must submit to and receive from the secretary approval of the proposed corrective action plan, together with projected costs of the corrective action;

(7) the owner or operator or any agents thereof shall keep and preserve suitable records demonstrating compliance with the approved corrective action plan and all invoices and financial records associated with costs for which reimbursement will be requested;

~~(8)~~ within 30 days of receipt of a complete corrective action plan, *or as soon as practicable thereafter,* the secretary shall make a determination and provide written notice as to whether the owner or operator responsible for corrective action is eligible or ineligible for reimbursement of corrective action costs, and should the secretary

the secretary may, in the secretary's discretion, determine those costs which are allowable as corrective action costs and those which are attributable or ancillary to removal, replacement or retrofitting of underground storage tanks;

(8)

(9)

determine the owner or operator is ineligible, the secretary shall include in the written notice an explanation setting forth in detail the reasons for the determination; (10)

~~(9)~~ the owner or operator shall submit to the secretary a written notice that corrective action has been completed within 30 days of completing corrective action; (11)

~~(10)~~ no later than 30 days from the submission of the notice as required by subsection ~~(a)(9)~~, the owner or operator must submit an application for reimbursement of corrective action costs in accordance with criteria established by the secretary, and the application for reimbursement must include the total amount of the corrective action costs and the amount of reimbursement sought. In no case shall the total amount of reimbursement exceed the lesser of the actual costs of the corrective action or the amount of the lowest bid submitted pursuant to K.S.A. 1989 Supp. 65-34,118 less the appropriate deductible amount; (a) (10) and amendments thereto (12)

~~(11)~~ interim payments shall be made to an owner or operator in accordance with the plan approved by the secretary pursuant to K.S.A. 1989 Supp. 65-34,118, except that the secretary, for good cause shown, may refuse to make interim payments or withhold the final payment until completion of the corrective action; and amendments thereto (13)

~~(12)~~ the owner or operator shall be fully responsible for removal, replacement or retrofitting of underground petroleum storage tanks and the cost thereof shall not be reimbursable from the fund; , and costs attributable or ancillary thereto, (14)

~~(13)~~ the owner or operator shall provide evidence satisfactory to the secretary that corrective action costs equal to the appropriate deductible amount have been paid by the owner or operator, and such costs shall not be reimbursed to the owner or operator; [and] strike

~~(14) the owner or operator submits to the secretary proof, satisfactory to the secretary, that such owner or operator is unable to satisfy the criteria for self-insurance under the federal act; and~~ (15) the owner or operator submits to the secretary proof, satisfactory to the secretary, that such owner or operator is unable to satisfy the criteria for self-insurance under the federal act; and (16)

~~(15)~~ ~~(14)~~ the owner or operator shall be liable for all costs which are paid by or for which the owner or operator is entitled to reimbursement from insurance coverage, warranty coverage or any other source.

(b) For the purpose of determining an owner's or operator's eligibility for reimbursement pursuant to subsection (a) and the applicable deductible of such owner or operator, the secretary shall consider all owners and operators owned or controlled by the same interests to be a single owner or operator.

(c) Notwithstanding the provisions of subsection (c) of K.S.A. 1989 Supp. 65-34,118, should the secretary find that any of the and amendments thereto

following situations exist, the owner or operator, or both, [may] shall, in the discretion of the secretary, be liable for 100% of costs associated with corrective action necessary to protect health or the environment, if:

(1) The release was due to willful or wanton actions by the owner or operator;

(2) the owner or operator is in arrears for moneys owed, other than environmental assurance fees, to the petroleum storage tank release trust fund;

(3) the release was from a tank not registered with the department;

(4) the owner or operator fails to comply with any provision of the agreement specified in subsection (c) of K.S.A. 1989 Supp. 65-34,118; and amendments thereto

(5) the owner or operator moves in any way to obstruct the efforts of the department or its contractors to investigate the presence or effects of a release or to effectuate corrective action; or

(6) the owner or operator is not in substantial compliance with any provision of this act or rules and regulations promulgated hereunder.

(d) Except as otherwise provided in [subsection ~~(d)~~ (e)] subsections (e) and (f), an owner or operator of an underground petroleum storage tank is in substantial compliance with this act and the rules and regulations adopted hereunder, if:

(1) On and after January 1, 1990, each petroleum storage tank owned or operated by such owner or operator has been registered with the secretary, in accordance with the applicable laws of this state and any rules and regulations adopted thereunder;

(2) the owner or operator has entered into an agreement with the secretary, as provided in subsection (c) of K.S.A. 1989 Supp. 65-34,118; and amendments thereto

(3) the owner or operator has complied with any applicable financial responsibility requirements imposed by the Kansas storage tank act and the rules and regulations adopted thereunder; and

(4) the owner or operator has otherwise made a good faith effort to comply with the federal act, this act, any other law of this state regulating petroleum storage tanks and all applicable rules and regulations adopted under any of them.

(e) Prior to July 1, 1990, an owner or operator of any of the following underground petroleum storage tanks shall be deemed to be in substantial compliance with this act:

(1) Any farm or residential tank of 1,100 gallons or less capacity used for storing motor fuel for noncommercial purposes; and

(2) any tank used for storing heating oil for consumptive use on

the single family residential premise where stored.

On and after July 1, 1990, an owner or operator of any petroleum storage tanks specified above shall be deemed to be in substantial compliance with this act, if each such tank has been registered with the secretary in accordance with the applicable laws of this state and any rules and regulations adopted thereunder.

(f) [Notwithstanding ~~any other provision of the Kansas storage tank act~~ subsection (d) (1),] any owner of an underground petroleum storage tank who at no time has placed petroleum in such tank or withdrawn petroleum from such tank shall be eligible for reimbursement from the fund of all costs of any necessary corrective action and shall not be subject to the provisions of subsections (a)(1), (2), (3) and (4) if such owner submits a corrective action plan prior to July 1, 1990.

strike bracketed language

not be required to register such tank to

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~~(g) Notwithstanding any other provision of the Kansas storage tank act, any owner or operator of an underground petroleum storage tank who at no time on or after April 1, 1989, has placed petroleum in such tank or withdrawn petroleum from such tank shall be eligible for reimbursement from the fund of all costs of any necessary corrective action in response to a release from such tank, except that:~~

~~(1) The owner or operator must submit a corrective action plan to the secretary prior to July 1, 1990; and~~

~~(2) the owner or operator shall be subject to the applicable provisions of subsections (a)(1), (2), (3) and (4).~~

~~(h) Notwithstanding any other provision of the Kansas storage tank act, an owner or operator of a petroleum storage tank who has undertaken corrective action prior to April 1, 1990, pursuant to a corrective action plan approved by the secretary on or after January 1, 1989, shall be eligible for reimbursement from the fund for costs incurred in conjunction with such corrective action performed subsequent to plan approval by the secretary.~~

~~(i) An owner or operator of a petroleum storage tank, other than the United States government or any of its agencies or the owner or operator of any above ground storage tank specified in subsection (g) or (i) of K.S.A. 1989 Supp. 65-34,103, and amendments thereto, who is in substantial compliance, as provided in subsections (c) and (d), shall be indemnified by the fund for the costs of compensating third parties for bodily injury or property damage caused by a release from such petroleum storage tank, subject to the following provisions:~~

~~(1) An owner or operator who is not a petroleum marketer~~

~~and who owns or operates not more than four underground petroleum storage tanks shall be liable for the first $5,000 of such costs, provided all petroleum or petroleum products are not stored for purposes of resale;~~

~~(2) the owner or operator of not more than 12 underground petroleum storage tanks shall be liable for the first $10,000 of such costs;~~

~~(3) the owner or operator of at least 13 and not more than 99 underground petroleum storage tanks shall be liable for the first $20,000 of such costs;~~

~~(4) the owner or operator of more than 99 underground petroleum storage tanks shall be liable for the first $60,000 of such costs;~~

~~(5) the owner or operator otherwise satisfies the criteria established by the Kansas storage tank act for the eligibility of an owner or operator to be reimbursed from the fund for costs of any corrective action in response to a release from an underground petroleum storage tank;~~

~~(6) the owner or operator shall submit to the secretary a certified copy of a final judgment of a court of competent jurisdiction establishing the owner's or operator's liability for such costs, or the secretary shall approve of a settlement of a claim against the owner or operator for such costs;~~

~~(7) the costs for which an owner or operator may be indemnified shall not include punitive damages; and~~

~~(8) in any event, the fund's liability for such costs shall not exceed the limits specified in K.S.A. 1989 Supp. 65-34,120, and amendments thereto.~~

~~(g)~~ *An owner or operator of an underground petroleum storage tank who is in substantial compliance, as provided in subsection (d), shall be entitled to reimbursement from the fund for the costs of corrective action taken in response to a release from such tank discovered on or after January 1, 1989, and for which written approval of any corrective action taken prior to April 1, 1990, has been granted by the secretary.*

New Sec. 4. (a) As used in this section, "compensable claim" means any liability of an owner or operator to a third party for bodily injury or property damage caused by a release from an underground petroleum storage tank, as provided by the Kansas storage tank act. This section shall be a part of and supplemental to the Kansas storage tank act.

(b) No person shall have any right of action against the fund. Any person alleging a compensable claim must seek recovery from

the owner or operator. An owner or operator of an underground petroleum storage tank, other than the United States government or any of its agencies, who is in substantial compliance, as provided in subsection (d) or (e) of K.S.A. 1989 Supp. 65-34,119, and amendments thereto, shall be indemnified by the fund for any compensable claim, subject to the following conditions:

(1) The owner or operator must cause written notice to be mailed to the secretary within 10 days after receipt of a written demand alleging a compensable claim or within 10 days after receipt of service of summons and petition naming the owner or operator as defendant in an action which alleges a compensable claim. The notice shall be sent to the secretary by restricted mail, as defined in K.S.A. 60-103, and amendments thereto, and a copy of the written claim or copies of the summons and petition served on the owner or operator shall be sent to the secretary with the notice.

(2) Upon receipt of a timely notice, as provided in subsection (b)(1), the secretary shall defend against the alleged compensable claim or action to recover damages for an alleged compensable claim, if the amount claimed in either event exceeds the applicable deductible of the owner or operator, as prescribed by subsection (b)(5). The owner or operator shall cooperate fully with the secretary in the defense of the claim or action, and shall attend hearings and trials, as necessary, and give evidence therein. If the secretary is not given timely notice, as provided in subsection (b)(1), the secretary shall have no duty to defend the claim or action, and the owner or operator shall not be eligible for indemnification by the fund for any liability to the third party making the claim or commencing the action.

(3) The secretary shall have the right to enter into negotiations on behalf of an owner or operator for the settlement of any such claim or action. Where the secretary and the claimant in any such action agree to settle the action, the secretary or claimant shall file a motion with the court for an order approving the settlement. If the secretary and a claimant agree to settle a compensable claim prior to the commencement of an action, the secretary and the claimant shall file a joint petition and stipulation with a court of competent jurisdiction and proper venue, seeking an order of the court approving the proposed settlement.

The court shall set such motion or joint petition for hearing as soon as the court's calendar permits, and notice of the time, date and place of hearing shall be given to the claimant, the owner or operator and the secretary. At the hearing, the court shall approve the proposed settlement, if the court finds it to be valid, just and

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equitable.

If the court does not approve the settlement of a pending action, the action shall be conducted in all respects as if the secretary and claimant had not agreed to a settlement, but the parties shall not be precluded from submitting subsequent settlement agreements for approval by the court. If the court does not approve a proposed settlement submitted by joint petition and stipulation, such fact by itself shall not prejudice the claimant from commencing an action against the owner or operator to recover damages for the alleged compensable claim.

If an owner or operator objects to a settlement approved by the court, the secretary shall no longer have the duty to defend the claim or action, and the amount by which the owner or operator shall be indemnified by the fund shall not exceed the amount agreed to in the settlement agreement, less the appropriate deductible amount specified in subsection (b)(5).

(4) In any such action against an owner or operator, evidence that a portion of any verdict would be payable from insurance or by the fund shall be inadmissible. Any costs incurred by the secretary in defending against any such claim or action shall be paid from the fund. An owner or operator shall not be indemnified for any sum which is paid by or for which the owner or operator is entitled to payment from insurance coverage, warranty coverage or any other source.

(5) An owner or operator may be indemnified for a compensable claim in an amount not to exceed the limits specified in K.S.A. 1989 Supp. 65-34,120, and amendments thereto, less the following deductible amounts:

(A) An owner or operator who is not a petroleum marketer and who owns or operates not more than four underground petroleum storage tanks shall be liable for the first $5,000 of such costs, provided all petroleum or petroleum products are not stored for purposes of resale;

(B) the owner or operator of not more than 12 underground petroleum storage tanks shall be liable for the first $10,000 of such costs;

(C) the owner or operator of at least 13 and not more than 99 underground petroleum storage tanks shall be liable for the first $20,000 of such costs; and

(D) the owner or operator of more than 99 underground petroleum storage tanks shall be liable for the first $60,000 of such costs.

(6) For the purpose of determining an owner's or operator's eligibility for indemnification pursuant to this section, including de-

termination of the applicable deductible of the owner or operator, the secretary shall consider all owners and operators owned or controlled by the same interests to be a single owner or operator.

(7) Notwithstanding the foregoing provisions of this section, an owner or operator, or both, may be liable for 100% of the costs of a compensable claim upon the same basis as provided in subsection (c) of K.S.A. 1989 Supp. 65-34,119, and amendments thereto.

Sec. 5. K.S.A. 1989 Supp. 65-34,117 is hereby amended to read as follows:65-34,117. (a) There is hereby established an environmental assurance fee of $.01 on each gallon of petroleum product, other than commercial aviation jet fuel, manufactured in or imported into this state. The environmental assurance fee shall be paid by the manufacturer, importer or distributor first selling, offering for sale, using or delivering petroleum products within this state. The environmental assurance fee shall be paid to the department of revenue at the same time and in the same manner as the inspection fee established pursuant to K.S.A. 55-426, and amendments thereto, is paid. The secretary of revenue shall remit daily the environmental assurance fees paid hereunder to the state treasurer, who shall deposit the same in the state treasury to the credit of the petroleum storage tank release trust fund. Exchanges of petroleum products on a gallon-for-gallon basis within a terminal and petroleum product which is subsequently exported from this state shall be exempt from this fee.

(b) Environmental assurance fees as specified in subsection (a) shall be paid until the unobligated principal balance of the fund equals or exceeds $5,000,000, at which time no environmental assurance fees shall be levied unless and until such time as the balance in the fund is less than or equal to an unobligated balance of $2,000,000, in which case the collection of the environmental assurance fee will resume within 90 days following the end of the month in which such unobligated balance occurs. The director of accounts and reports shall notify the secretary of revenue whenever the unobligated balance in the fund is $2,000,000, and the secretary of revenue shall then give notice to each person subject to the environmental assurance fee as to the imposition of the fee and the duration thereof.

(c) Every manufacturer, importer or distributor of any petroleum product liable for the payment of environmental assurance fees as provided in this act, shall report in full and detail before the 25th day of every month to the secretary of revenue, on forms prepared and furnished by the secretary of revenue, and at the time of forwarding such report, shall compute and pay to the secretary of

revenue the amount of fees due on all petroleum products subject to such fee during the preceding month.

(d) All fees imposed under the provisions of this section and not paid on or before the 25th day of the month succeeding the calendar month in which such petroleum products were subject to such fee shall be deemed delinquent and shall bear interest at the rate of 1% per month, or fraction thereof, from such due date until paid. In addition thereto, there is hereby imposed upon all amounts of such fees remaining due and unpaid after such due date a penalty in the amount of 5% thereof. Such penalty shall be added to and collected as a part of such fees by the secretary of revenue.

(e) The secretary of revenue is hereby authorized to adopt such rules and regulations as may be necessary to carry out the responsibilities of the secretary of revenue under this section.

Sec. ~~5~~ 6. K.S.A. 1989 Supp. 65-34,120 is hereby amended to read as follows: 65-34,120. (a) Nothing in this act shall establish or create any liability or responsibility on the part of the board, the secretary, the department or its agents or employees, or the state of Kansas to pay any corrective action costs *or to indemnify any owner or operator for ~~the costs of compensating~~ any liability to third parties for bodily injury or property damage* from any source other than the *total payment from the* fund created by this act. In no event shall the fund be ~~liable for the payment of corrective action costs or the indemnification of an owner or operator for costs of compensating third parties~~ in an amount in excess of the following, less any applicable deductible amounts of the owner or operator:

(1) For costs incurred in response to any one release from an underground petroleum storage tank, $1,000,000;

(2) for an owner or operator of 100 or fewer underground petroleum storage tanks, an annual aggregate of $1,000,000; and

(3) for an owner or operator of more than 100 underground petroleum storage tanks, an annual aggregate of $2,000,000.

In no event shall an owner or operator be indemnified by the fund for liability to third parties for bodily injury or property damage until the entire allowable corrective action costs have been determined and the fund has been encumbered for their payment.

(b) This act is intended to assist an owner or operator only to the extent provided for in this act, and it is in no way intended to relieve the owner or operator of any liability that cannot be satisfied by the provisions of this act.

(c) Neither the secretary nor the state of Kansas shall have any liability or responsibility to make any payments for corrective action

~~or~~ *to indemnify an owner or operator for the costs of compensating third parties,* if the fund created herein is insufficient to do so. In the event the fund is insufficient to make the payments at the time the claim is filed, such claims shall be paid in the order of filing at such time as moneys are paid into the fund.

(d) No common law liability, and no statutory liability which is provided in a statute other than in this act, for damages resulting from a release from an underground petroleum storage tank is affected by this act. The authority, power and remedies provided in this act are in addition to any authority, power or remedy provided in any statute other than a section of this act or provided at common law.

(e) If a person conducts a corrective action activity in response to a release from an underground petroleum storage tank, whether or not the person files a claim against the fund under this act, the claim and corrective action activity conducted are not evidence of liability or an admission of liability for any potential or actual environmental pollution or third party claim.

Sec. ~~6~~ 7. K.S.A. 1989 Supp. ~~65-34,105,~~ 65-34,114, 65-34,115, ~~65-34,117,~~ 65-34,119 ~~and 65-34,120 are hereby repealed.~~ Insert sections 3 to 6, attached

Sec. ~~7-8.~~ This act shall take effect and be in force from and after its publication in the Kansas register. 7,

New Sec. 3. (a) An owner or operator of an underground petroleum storage tank shall be entitled to reimbursement from the fund for the costs of corrective action taken in response to a release from such tank which was discovered on or after December 22, 1988, and for which written approval of any corrective action taken prior to April 1, 1990, has been granted by the secretary, subject to the following:

(1) Such owner or operator shall be entitled to reimbursement pursuant to this section only to the extent that such owner or operator would be entitled to reimbursement if the release had been discovered on or after April 1, 1990, including application of all applicable deductibles and conditions of reimbursement imposed by K.S.A. 1989 Supp. 65-34,119 and amendments thereto;

(2) the aggregate of all reimbursement paid pursuant to this section shall not exceed $2,500,000;

(3) the aggregate of all reimbursement paid to an owner or operator pursuant to this section shall not exceed $100,000, after all applicable deductibles; and

(4) any claim for reimbursement pursuant to this section must be submitted to the secretary not later than September 30, 1990;

(b) If the aggregate of all reimbursement to which owners and operators would be otherwise entitled pursuant to this section exceeds $2,500,000, reimbursement shall be paid from the fund as follows:

(1) Any owner or operator who owns or operates not more than 12 underground petroleum storage tanks and whose aggregate claims for reimbursement pursuant to this section do not exceed $20,000, before applicable deductibles, shall receive full payment of the reimbursement to which such owner or operator is entitled unless the aggregate of all reimbursement to which all such owners and operators are entitled exceeds $2,500,000. In that case, such owners and operators shall be paid on a pro rata basis and no

payments shall be paid to other owners or operators.

(2) If the aggregate of all reimbursement paid pursuant to subsection (b)(1) is less than $2,500,000, owners and operators other than those described in subsection (b)(1) shall receive full payment of the reimbursement to which they are entitled unless the aggregate of all reimbursement to which all such owners and operators are entitled, when added to the amount paid pursuant to subsection (b)(1), exceeds $2,500,000. In that case, such owners and operators shall be paid on a pro rata basis.

(c) All reimbursement payable pursuant to this section shall be paid by the secretary prior to February 1, 1991.

(d) This section shall be part of and supplemental to the Kansas storage tank act.

New Sec. 4. (a) The commissioner of insurance shall adopt and implement a plan for applicants for insurance who are in good faith entitled to, but who are unable to procure through ordinary methods, insurance necessary to achieve compliance with the financial responsibility requirements for third party liability imposed by 40 CFR part 280, subpart H, and part 281 adopted by the federal environmental protection agency. Insurers undertaking to transact the kinds of insurance specified in subsection (b) or (c) of K.S.A. 40-1102 and amendments thereto and rating organizations which file rates for such insurance shall cooperate in the preparation and submission to the commissioner of insurance of a plan or plans for the insurance specified in this section. Such plan shall provide:

(1) Insurance necessary to achieve compliance with the financial responsibility requirements for third party liability imposed by 40 CFR part 280, subpart H, and part 281;

(2) for the appointment by the plan of a servicing carrier which shall be: (A) An insurance company authorized to transact business in this state; (B) an insurance company which is listed with the commissioner pursuant to K.S.A. 40-246e and amendments thereto; or (C) a risk retention group, as defined by K.S.A. 40-4101 and amendments thereto, which meets the requirements

established under the federal liability risk retention act of 1986; (15 U.S.C. 3901 et seq.) and has registered with the commissioner pursuant to K.S.A. 40-4103 and amendments thereto;

(3) reasonable rules governing the plan, including provisions requiring, at the request of the applicant, an immediate assumption of the risk by an insurer or insurers upon completion of an application, payment of the specified premium and deposit of the application and the premium in the United States mail, postage prepaid and addressed to the plan's office;

(4) rates and rate modifications applicable to such risks, which rates shall be established as provided by subsections (b) and (c);

(5) the limits of liability which the insurer shall be required to assume;

(6) coverage for only underground storage tanks located within this state;

(7) coverage for at least 12 months from the date of the original application with respect to any underground storage tank without requiring tank integrity tests, soil tests or other tests for insurability if, within six months immediately preceding application for insurance, the tank has been made to comply with all provisions of federal and state law, and all applicable rules and regulations adopted pursuant thereto, but may provide for renewal or continuation of such coverage to be contingent upon satisfactory evidence that the tank or tanks to be insured continue to be in compliance with such laws and rules and regulations;

(8) exclusion from coverage of any damages for noneconomic loss and any damages resulting from intentional acts of the insured or agents of the insured;

(9) to the extent allowed by law, subrogation of the insurer to all rights of recovery from other sources for damages covered by the plan or plans;

(10) an optional deductible of the first $2,500, $5,000 or $10,000 of liability per occurrence at any one location for

compensation of third parties for bodily injury and property damage caused by either gradual or sudden and accidental releases from underground petroleum storage tanks, but no such deductible shall apply to reasonable and necessary attorney fees and other reasonable and necessary expenses incurred in defending a claim for such compensation;

(11) coverage only of claims for occurrences that commenced during the term of the policy and that are discovered and reported to the insurer during the policy period or within six months after the effective date of the cancellation or termination of the policy;

(12) a method whereby applicants for insurance, insureds and insurers may have a hearing on grievances and the right of appeal to the commissioner;

(13) a method whereby adequate reserves are established for open claims and claims incurred but not reported based on advice from an independent actuary retained by the plan at least annually, the cost of which shall be borne by the plan;

(14) a method whereby the plan shall compare the premiums earned to the losses and expenses sustained by the plan for the preceding fiscal year and if, for that year: (A) There is any excess of losses and expenses over premiums earned, plus amounts transferred pursuant to subsection (a)(15), an amount equal to such excess losses and expenses shall be transferred from the petroleum storage tank release fund established by K.S.A. 1989 Supp. 65-34,114 and amendments thereto to the plan or; or (B) there is any surplus of premiums earned, plus amounts transferred pursuant to subsection (a)(15), over losses and expenses sustained, an amount equal to such surplus shall be transferred to such fund from the plan; and

(15) a method whereby, during any fiscal year, whenever the losses and expenses sustained by the plan exceed premiums earned, an amount equal to the excess of losses and expenses shall be transferred from the petroleum storage tank release fund established by K.S.A. 1989 Supp. 65-34,114 and amendments thereto

to the plan upon receipt by the secretary of health and environment of evidence, satisfactory to the secretary, of the amount of the excess losses and expenses.

(b) The commissioner of insurance shall establish rates, effective January 1 of each year, for coverage provided under the plan adopted pursuant to this section. Such rates shall be reasonable, adequate and not unfairly discriminatory. Such rates shall be based on loss and expense experience developed by risks insured by the plan and shall be in an amount deemed sufficient by the commissioner to fund anticipated claims based upon reasonably prudent actuarial principles, except that:

(1) Due consideration shall be given to the loss and expense experience developed by similar plans operating or trust funds offering third party liability coverage in other states and the voluntary market; and

(2) before January 1, 1992, the annual rate shall be not more than $500 for each tank for which coverage is provided under the plan with selection of a $10,000 deductible.

In establishing rates pursuant to this subsection, the commissioner shall establish, as appropriate, lower rates for tanks complying with all federal standards, including design, construction, installation, operation and release detection standards, with which such tanks are or will be required to comply by 40 C.F.R part 280 as in effect on the effective date of this act.

(c) Any moneys transferred from the petroleum storage tank release fund to the plan pursuant to subsection (a)(14) or (a)(15) shall be considered a loan and shall be repaid to the petroleum storage tank release fund by the plan with interest not later than 24 months from the date of the transfer. Any moneys transferred from the plan to the petroleum storage tank release fund pursuant to subsection (a)(14) shall be considered a payment on such loan. Such loan shall bear interest at a rate equal to the rate prescribed by K.S.A. 75-4210 and amendments thereto for inactive accounts of the state effective on the first day of the

month during which the transfer is made.

(d) The commissioner of insurance shall appoint a governing board for the plan. The governing board shall meet at least annually to review and prescribe operating rules of the plan. Such board shall consist of five members appointed as follows: One representing domestic or foreign insurance companies, one representing independent insurance agents, one representing underground storage tank owners and operators and two representing the general public. No member representing the general public shall be, or be affiliated with, an insurance company, independent insurance agent or underground storage tank operator. Members shall be appointed for terms of three years, except that the initial appointment shall include two members appointed for two-year terms and one member appointed for a one-year term, as designated by the commissioner.

(e) Before adoption of a plan pursuant to this section, the commissioner of insurance shall hold a hearing thereon.

(f) An insurer participating in the plan adopted by the commissioner of insurance pursuant to this section may pay a commission with respect to insurance assigned under the plan to an agent licensed for any other insurer participating in the plan or to any insurer participating in the plan.

(g) The commissioner of insurance may adopt such rules and regulations as necessary to administer the provisions of this section.

(h) The department of health and environment and the plan shall provide to each other such information as necessary to implement and administer the provisions of this section. Any such information which is confidential while in the possession of the department or plan shall remain confidential after being provided to the other pursuant to this subsection.

New Sec. 5. If any provisions of this act or the application thereof to any person or circumstances is held invalid the invalidity does not affect other provisions or applications of this act which can be given effect without the invalid provisions

or application and to this end the provisions of this act are severable.

Sec. 6. K.S.A. 1989 Supp. 65-34,114 and 65-34,119 are hereby repealed.

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March 27, 1990

Honorable Dennis Spaniol
Chairman House Energy and
Natural Resources Committee
State House
Topeka, Kansas 66612

RE: SB 5544

Dear Dennis:

I am the general counsel for Mid States Port Authority. The Authority is a creation of Kansas Statutes, K.S.A. 12-3401 et seq. The Authority is the owner of part of the old Rock Island railroad in Kansas, Colorado and Nebraska. The Authority's success can be credited to the Kansas Legislature's willingness to become involved with the Authority by guaranteeing its various financings.

When the Authority acquired its railroad from the Rock Island it also inherited a number of underground fuel storage tanks. The Authority began a program of identifying any storage tank which it might be liable for shortly after acquiring the railroad. Those tanks which were not being used by one of the Authority's leasing carriers was programed for removal. Several tanks were removed prior to the enactment of the Kansas fuel storage tank act. The removal was performed by an experienced contractor.

The Authority and its leasing carriers have made every effort to identify the location of underground storage tanks. However, recent experience in Nebraska would suggest that those efforts need to be reviewed once again. The Authority is concerned that it has not identified all tanks on its property. Of special concern are those tanks which might have been abandoned by previous tenants, such as gas station operators who are no longer in business.

As an owner who has never placed petroleum in nor withdrawn petroleum from an underground storage tank, the Authority would qualify under K.S.A. 65-34,119(f) for reimbursement for the cost of any corrective plan. What the Authority needs is to have the definition of "corrective plan" changed to include the cost of removal or abandonment inplace of any tanks which it discovers.

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ATTACHMENT 2

This change would be sound public policy. The state would be well served if any owner who has never used a tank is allowed access to the fund for the purpose of removing or abandoning the tank in place. Currently there is no economic incentive for such an owner to do anything until there is a spill or discharge. I seems the state would benefit from the removal of as many old abandoned tanks as possible before they cause damage to the environment.

The Authority's goal could be accomplished by the insertion of the following language at the end of line 11, page 9 of SB 554:

> ", including cost of an approved plan of removal or abandonment in place, "

The Authority would ask the Energy and Natural Resources Committee to make the amendment as suggested.

Respectfully submitted,

T.L. Green

State of Kansas
Mike Hayden, Governor

Department of Health and Environment
Office of the Secretary

Stanley C. Grant, Ph.D., Secretary
Landon State Office Bldg., Topeka, KS 66612-1290
(913) 296-1522
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Testimony Presented to
House Committee on Energy and Natural Resources

by

The Kansas Department of Health and Environment

Senate Bill 554

My name is David M. Traster, the Assistant Secretary and General Counsel for the Kansas Department of Health and Environment. I am here this afternoon to testify on Senate Bill 554 which amends the Storage Tank Act passed by the 1989 Legislature.

Bill Review

Senate Bill 554 has provisions that address two major issues:

1) Third party liability coverage.

2) Retroactive application of the Petroleum Storage Tank Release Trust Fund.

Third Party Liability

Current federal regulations require underground petroleum storage tank owners and operators to have $1 million of coverage for corrective action and for third party liability. This coverage is now required for owners and operators with 100 tanks or more.

The original federal timetable required marketers with 13 tanks or more to meet this requirement on April 26, 1990. Other underground storage tank owners, including local units of government, were to comply with the federal financial responsibility requirements by October 26, 1990. Last week the Environmental Protection Agency announced a one-year moratorium of these requirements for owners of less than 100 tanks.

This moratorium will allow the states, the regulated community and the insurance industry an opportunity to develop mechanisms for addressing the financial responsibility requirements. The moratorium does not delay the technical requirements for release detection, corrosion protection and spill and overfill protection.

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Charles Konigsberg, Jr., M.D., M.P.H., Director of Health (913) 296-1343
James Power, P.E., Director of Environment (913) 296-1535
Lorne Phillips, Ph.D., Director of Information Systems (913) 296-1415
Roger Carlson, Ph.D., Director of the Kansas Health and Environmental Laboratory (913) 296-1619

ATTACHMENT 3

The state trust fund to be established on April 1 of this year will provide corrective action coverage for some underground petroleum storage tank owners and operators but not third party liability coverage under the existing provisions of the Storage Tank Act. Owners and operators must rely on self-insurance or purchase of liability coverage from private insurance companies for the required $1 million or $2 million coverage depending upon the number of tanks owned. This insurance may not be available for many underground storage tank facilities because of the age or condition of the tanks. Senate Bill 554 as amended by the House Energy and Natural Resources Subcommittee addresses these problems by creating a plan for providing insurance coverage for third party liability.

KDHE is committed to the concept that the fund created last year should be used first for environmental cleanup and only secondarily for payment of third party liability. The current draft of the bill allows a transfer from the trust fund to the plan without regard to whether there are adequate funds for remediation. We believe that the language placed in the bill today which mandates that the plan reimburse the fund for payments made to it mitigates this problem but it does not solve it. This places the cart before the horse. Language should be placed in the bill which will allow a transfer from the fund only when a balance is left in the fund sufficient to meet all the obligations the fund will incur for remediation.

Retroactive Eligibility

The Federal regulations on Underground Storage Tanks established a compliance schedule for release detection based on the age of the tank. These regulations have required tanks over 25 years to provide release detection prior to December 23, 1989. Many tank owners have discovered environmental problems associated with these tanks while meeting release detection requirements. The Department has identified a large number of problem sites across the state. Currently remediation is underway or needed at approximately 350 sites. Under the existing provisions of the Storage Tank Act, none of these sites are eligible for Trust Fund reimbursement. In some cases the cleanup costs will result in the bankruptcy of the owner or operator.

The Department of Health and Environment has consistently supported the enactment of retroactive trust fund coverage for corrective action. We believe that parties who have discovered problems while meeting their regulatory responsibilities should not be penalized. We do not believe that persons who have failed to meet the regulatory requirements should be rewarded. Therefore, the Department recommends that the Secretary have the option to pay for corrective actions performed in the past by tank owners and operators who have worked with the Department to meet the regulatory deadlines and other criteria. The Secretary should have the option to deny payment to any non-cooperative owner or

operators, or to those who are not in compliance with regulatory requirements.

Senate Bill 554 as amended by a subcommittee addresses the concern about retroactive coverage under a plan as follows:

1. The dates for retroactive coverage are December 22, 1988, through April 1, 1990. This is the date on which the Federal UST regulations were effective to the date that the Petroleum Storage Tank Release Trust Fund becomes effective.

2. Applications for payment of retroactive claims must be made in the 90 day period after the bill becomes law.

3. KDHE would have an extended period of time to evaluate these claims. All payments would be made prior to February 1, 1991.

4. The actual claims to be paid for retroactive coverage were discussed in some detail. A cap of $2.5 million has been proposed by Representative Spaniol and members of the House subcommittee. In addition, no tank owner or operator could receive payment for all claims of more than $100,000. The plan for disbursing these funds is as follows:

   Step A. All claims received will be reviewed and adjustments made if necessary for "reasonable costs" in parallel with the provisions for corrective action under the existing statutes. If the total of all claims does not exceed $2,500,000, all of them would be paid. If the total exceeds $2,500,000, the following process would apply.

   Step B. All claims with a total claim of $20,000 or less would be processed. The amount paid would be the amount of the claim less any deductible. For example, if a claim was made for $19,000 by an owner with 3 tanks, the payment would be $19,000 - $5,000 = $14,000. No payment would be made if the deductible for the owner/operator exceeds $20,000.

   Step C. The remaining claims would be examined and the total amount of reimbursable costs for each owner/operator would be determined. Only $100,000 in reimbursable costs would be allowed for any owner/operator.

   Step D. The claims costs would be added. If the amount of reimbursable costs from Step C is less than or equal to the funds remaining after the claims in Step B are paid, all claims would be paid in full. For example, if the claims for payments from Step B are $500,000, up to

$2 million in reimbursable costs from Step C could be paid. In the event that the reimbursable costs from Step C exceed the funds remaining after payment of claims from Step B, the remaining claims would be paid on a pro rata basis. For example, if the claims from Step B are $500,000 and the claims from Step C are $4 million, the pro rata share would be $2 million / $4 million = 50%. In the event that an owner/operator has claims greater than $100,000, the $100,000 figure would be used in determining the pro rata share.

The amendments to the Kansas Storage Tank Act contained in Senate Bill 554 and the House subcommittee revisions are methods for addressing the issues of third party liability coverage and retroactive coverage for underground storage tanks. This bill offers you the opportunity to take action on both issues.

Testimony Presented By:

David M. Traster
Assistant Secretary
and General Counsel

March 27, 1990

March 27, 1990

Representative Dennis Spaniol
Chairperson
House Energy & Natural Resources Committee
State Capitol
Topeka, Kansas

Thank you for allowing me to appear before your committee.

We own a small gas service station in Rush Center, Kansas, population of 250. This station was started in 1928, and we purchased the station in 1985.

In the summer of 1989, we started to replace our underground storage tanks with above-ground storage. It was then we first learned of contamination on the property.

We immediately hired a consultant to clean-up the site. We acted promptly because we did not want to run the risk of contaminating a municipal water supply nearby.

Our consultants indicate the contamination probably occurred long before we became the owners of the property.

We hope Senate Bill 554 becomes law to allow us some reimbursement for the expenses we incur in the clean-up, now estimated at $75,000.00 to $100,000.00.

It seems unfair to penalize us simply because our problem was discovered before April 1, 1990. It also seems unfair that we will be contributing to the trust fund to clean-up other stations, but these funds cannot be used to help us.

We have a very small operation, and it will take us years to pay for this clean-up.

It is also important that present law be amended to allow the trust fund to pay 3rd party claims in compliance with the requirement of federal statutes.

Respectfully,

Ray J. Renz
Ray Renz.

Janet S. Renz
Janet S. Renz.

H ENERGY AND NR
3-27-90
ATTACHMENT 4

March 1990

We, Harley and Rosalie Renz owner and operator of Rush Center Oil Co. Inc. of Rush Center Ks, junction K-96 and U.S. 183, in business for 43 yrs. request your full support of ammended bill #554.

Without the enactment of senate ammended bill #554 it will guarantee our inability to survive. There are several reasons. As the bill stands today with the total responsibilty of contamination clean-up levied against the property owner it wil force many small operators and ourselves included into bankrupcy. Thus leaving the total cost of the clean-up to the state of Ks.

The mandatory insurance policies are not available or affordable.

The new reappraisal tax law has added 100 plus % additonal tax burden. Also what we hear out of Topeka the inventory tax will propably be added back on at a future date.

Respectfully,

Harley and Rosalie Renz

P.S. On attached sheet copy of from our Banker President W.R. Robbins, Farmer's Bank and Trust N.A La Crosse Ks. It is self-explanatory.

H Energy and NR
3-27-90
Attachment 5

January 4, 1990

Mr. Harley Renz
Rush Center, KS 67575

Dear Mr. Renz:

Thank you very much for offering Farmers Bank & Trust the opportunity to help in funding the monies for you on your service station in Rush Center.

Because of so many environmental problems and possible bank losses, our institution prefers to withdraw from consideration on this loan. There are numerous lawsuits of record indicating that banks, while loaning on high risk environmental properties, can become liable for compliance with the EPA.

Once again, thanks for contacting us on this loan.

Respectfully,

W. R. Robbins
President

WRR:jmp

TESTIMONY ON SB 554

HOUSE COMMITTEE ON ENERGY & NATURAL RESOURCES

MARCH 27, 1990

PREPARED BY
BYRON ULERY
FARMWAY CO-OP, INC.
BELOIT, KANSAS

MR. CHAIRMAN AND MEMBERS OF THE COMMITTEE, MY NAME IS BYRON ULERY AND I AM GENERAL MANAGER FOR FARMWAY CO-OP, INC. FARMWAY IS A GRAIN MARKETING AND FARM SUPPLY COOPERATIVE SERVING APPROXIMATELY 4,400 MEMBERS. FARMWAY CO-OP'S GENERAL OFFICE IS LOCATED IN BELOIT. THE COOPERATIVE IS OWNED BY AND SERVES A MEMBERSHIP MADE UP OF TWELVE COMMUNITIES IN MITCHELL, LINCOLN AND SURROUNDING COUNTIES.

FARMWAY CO-OP IS DRIVEN BY THE RATHER DIRECT MISSION OF ENHANCING THE ECONOMIC WELL BEING OF ITS MEMBERS. THIS MISSION IS ACCOMPLISHED PRIMARILY THROUGH MARKETING MEMBERS GRAIN; AND BY PROVIDING FEED, FERTILIZER, CHEMICALS, FARM SUPPLY AND PETROLEUM PRODUCTS AND SERVICES.

ALTHOUGH FARMWAY CO-OP UTILIZES REGIONAL COOPERATIVES SUCH AS FARMLAND INDUSTRIES, AND UNION EQUITY FOR ITS MARKETING AND FARM SUPPLY NEEDS, THE ORGANIZATION IS AN INDEPENDENT COMPANY, OWNED AND CONTROLLED BY THE 4,400 MEMBERS IT SERVES IN NORTH CENTRAL KANSAS.

H ENERGY AND NR
3-27-90

ATTACHMENT 6

FARMWAY CO-OP HAS HISTORICALLY MAINTAINED A POLICY OF COMPLIANCE WITH STATE AND FEDERAL REGULATIONS AND LAWS. WE HAVE NO QUARREL WITH ANY OF THE UNDERGROUND STORAGE TANK REGULATIONS. OBVIOUSLY, THE CONTAMINATION OF OUR WATER SUPPLY AND ITS IMPACT ON OUR FAMILIES IS UNACCEPTABLE.

LIKEWISE, WE AGREE WITH THE BASIC PREMISE OF THE PETROLEUM STORAGE TANK RELEASE TRUST FUND PROVISIONS OF S.B. 554.

WE ARE CONCERNED WITH THE CURRENT LACK OF THIRD PARTY LIABILITY PROVISIONS. THE THIRD PARTY PROVISION OF S.B. 554 WOULD BRING KANSAS LEGISLATION INTO COMPLIANCE WITH EPA REQUIREMENTS, NOW SET FOR APRIL 26 AND OCTOBER 26, 1991.

ANOTHER AREA OF CONCERN TO ALL MARKETERS AND ENVIRONMENTALLY CONCERNED CITIZENS IS THE CURRENT LACK OF A RETROACTIVE CLEANUP DATE. THIS WOULD ENCOURAGE MANY ABANDONED AND CLOSING FACILITIES TO BE CLEANED UP THROUGH THE USE OF THE STATE FUND. SINCE CLEANING UP AND KEEPING THE ENVIRONMENT CLEAN ARE PRIMARY PURPOSES OF THE LEGISLATION, THIS CHANGE WOULD SEEM NECESSARY. IF IT IS NOT INCLUDED, THE STATE WILL PROBABLY WIND UP ABSORBING CLEANUP COSTS AS OWNERS OF MANY CLOSED OR ABANDONED SITES WOULD LIKELY SEEK RELIEF THROUGH BANKRUPTCY.

THE MOST CRITICAL PROBLEM WE HAVE WITH CURRENT UST LEGISLATION IS THE TANGIBLE NET WORTH EXEMPTION OF $10 MILLION. THIS EXEMPTS THE BELOIT, DODGE CITY AND GARDEN CITY COOPERATIVES. THESE COMPANIES ARE EXEMPTED BECAUSE THEY HAVE HIGH DOLLAR ASSETS WHICH ARE NEEDED TO BE IN THE GRAIN HANDLING BUSINESS. FEED AND FERTILIZER OPERATIONS ARE ALSO LARGE CONTRIBUTORS TO THE NET WORTH OF THESE COOPERATIVES.

IT HARDLY SEEMS FAIR TO ASK OUR ORGANIZATION TO CONTRIBUTE $50,000.00 PER YEAR TO A CLEANUP FUND WHICH WE ARE INELIGIBLE TO USE.

FARMWAY CO-OP WAS ORGANIZED IN 1911 BY THE FARMERS IN MITCHELL COUNTY. SINCE THAT TIME, THEY HAVE BEEN JOINED BY AGRICULTURAL PRODUCERS IN LINCOLN AND SURROUNDING COUNTIES. THESE PEOPLE HAVE BUILT A MARKETING AND SUPPLY ORGANIZATION WITH A NET WORTH IN EXCESS OF $16.5 MILLION. HOWEVER, THE NET FIXED ASSETS OF THE PETROLEUM DEPARTMENT, AMOUNTS TO ONLY 11.44% OF FARMWAY CO-OP'S OVERALL NET FIXED ASSETS. DURING THE 1989 FISCAL YEAR, THE PETROLEUM DEPARTMENT CONTRIBUTED 6% TO FARMWAY'S BOTTOM LINE. THE RISK OF A MILLION DOLLAR CLEANUP IS HARDLY COMMENSURATE WITH THE OPPORTUNITIES IN THIS CASE.

IN SEPTEMBER 1989, WE CONTACTED KANSAS FARMERS SERVICE ASSOCIATION, OUR INSURANCE CARRIER, ABOUT THE POSSIBILITY OF OBTAINING POLLUTION INSURANCE COVERAGE. OUR AGENT, REX BLOOD,

SAID "AT THE CURRENT TIME, THERE ARE ONLY EIGHT COMPANIES THAT ARE OFFERING ANY TYPE OF TANK INSURANCE. THEY ARE NOT INTERESTED IN THE RURAL MARKETS. THEIR COST WOULD BE IN THE RANGE OF $150,000.00 ENGINEERING FEE AND ANNUAL PREMIUMS OF $200,000.00 FOR FARMWAY CO-OP. HOWEVER, NONE OF THE CARRIERS WOULD PROBABLY BE AVAILABLE UNTIL URBAN MARKETS ARE INSURED. IN ALL OF THE FARMLAND TERRITORY WHERE STATE FUNDS HAVE BEEN SET UP, THESE FUNDS ARE QUALIFYING COOPERATIVES. KANSAS FARMERS SERVICE WILL NOT BE OFFERING ANY TANK OR POLLUTION COVERAGE AND IT IS PROBABLY NOT AVAILABLE AT ANY PRICE TO FARMWAY CO-OP."

IN DECEMBER 1989, WE SUBMITTED APPLICATION TO AGRICULTURAL EXCESS AND SURPLUS INSURANCE COMPANY OF CINCINNATI, OHIO FOR AN UNDERGROUND STORAGE TANK POLLUTION LIABILITY POLICY. THIS COMPANY REFERRED US TO AN EXCLUSIVE TERRITORIAL AGENT AND THE SITUATION REMAINS UNRESOLVED. ON FEBRUARY 8, 1990, THE PETROMARK COMPANY ANNOUNCED IT "CANNOT CONTINUE TO ISSUE NEW OR RENEWAL COVERAGE" ON PETROLEUM POLLUTION LIABILITY. A SURVEY OF THE NATIONAL PETROLEUM MARKETERS ASSOCIATION INDICATES THAT PETROMARK PROVIDES 29% EXISTING COVERAGE.

OUR BOARD OF DIRECTORS HAS A FEELING OF COMMITMENT TO OUR SMALLER, RURAL COMMUNITIES TO OFFER NEEDED SERVICES RELATED TO FUEL, TIRES AND ACCESSORY SERVICES. WE CURRENTLY OFFER SUCH SERVICES IN 7 COMMUNITIES. THIS PAST FISCAL YEAR, 72% OF OUR

PETROLEUM DEPARTMENT NET EARNINGS WERE GENERATED AT ONE STATION.

WE HAVE THREE OPERATIONS WHOSE FUTURE IS NOT CLEAR. THEY ARE IN COMMUNITIES WHERE NO OTHER FUEL SERVICE IS AVAILABLE. THEY AVERAGE 15 MILES DISTANCE FROM THE NEXT RETAIL FACILITY. IF FARMWAY CO-OP IS EXEMPTED FROM PROTECTION UNDER THE STATE FUND, IT IS CERTAIN THAT THESE OPERATIONS WILL NEED TO BE CLOSED. IN ADDITION, TWO OTHER SITES WOULD HAVE TO BE EXAMINED VERY CLOSELY. IF WE ARE BURDENED WITH AN ADDITIONAL $50,000.00 EXPENSE LIABILITY RISK AND DENIED ACCESS TO THE CLEANUP FUND, WE SEE LITTLE CHOICE, BUT TO EXIT THESE HIGH RISK OPERATIONS.

IT IS OUR HOPE THAT CURRENT LEGISLATION CAN BE ALTERED IN ORDER TO ALLOW INDUSTRY FUNDS TO BE UTILIZED TO PROVIDE A BUSINESS CLIMATE CONDUCIVE TO KEEPING THESE AND OTHER RURAL PETROLEUM OPERATIONS OPEN. THIS WOULD ALLOW THOUSANDS OF RURAL KANSANS FUEL AND RELATED SERVICES IN THEIR COMMUNITY.

WE SUPPORT S.B. 554 AND FEEL IT WILL PROVIDE SUCH A CLIMATE.

TESTIMONY ON SB 554

HOUSE COMMITTEE ON ENERGY & NATURAL RESOURCES

MARCH 20, 1990

PREPARED BY
DARREL SCHROEDER
FARMER
TIPTON, KANSAS

MR. CHAIRMAN AND MEMBERS OF THE COMMITTEE, MY NAME IS DARREL SCHROEDER. I FARM IN PARTNERSHIP WITH MY BROTHER AND LIVE 2 MILES NORTHWEST OF TIPTON. I AM A DIRECTOR ON THE MITCHELL WATER DISTRICT, THEREFORE, I SEE BOTH SIDES OF THE CLEAN WATER ISSUE. I USE THE FUELING, LUBRICANT AND MERCHANDISE SALES, SHOP SERVICE AND TIRE AND BATTERY SALES AND SERVICE OFFERED AT THE TIPTON FARMWAY CO-OP SERVICE STATION. I FEEL THESE SERVICES ARE VERY IMPORTANT TO THE PROFITABILITY OF MY FARMING OPERATION, AND BECAUSE THIS STATION IS THE ONLY SUCH OPERATION IN TIPTON, I BELIEVE IT IS VERY IMPORTANT TO THE SURVIVAL OF OUR SMALL RURAL COMMUNITY.

TIPTON HAS A POPULATION OF 321. WE HAVE A SMALL GRADE SCHOOL AND HIGH SCHOOL. A SMALL MACHINERY MANUFACTURING PLANT AND A METAL BUILDING CONSTRUCTION COMPANY ARE THE MAJOR NON FARM BUSINESSES. WE HAVE ONE CAFE AND ONE SMALL GROCERY STORE, AND A SMALL HARDWARE STORE. THESE SERVICE BUSINESSES AND THE COOP SERVICE STATION ARE OFTEN THE ONLY SOURCE OF THE PARTICULAR TYPE OF SERVICE OR PRODUCTS THEY OFFER. THEIR SERVICES, ALTHOUGH NEEDED MAINLY SURVIVE ON THE LOW VOLUME BUSINESS ACTIVITY AVAILABLE IN OUR SMALL COMMUNITY.

THE NEAREST COMMUNITIES TO TIPTON WHICH OFFER PETROLEUM SERVICES WHICH I NEED ARE AT: HUNTER WHICH HAS ONE SERVICE STATION,. FARMWAY'S, AND A POPULATION OF ABOUT 135. HUNTER IS 11 MILES TO THE SOUTHEAST. CAWKER CITY IS LOCATED 16 MILES TO THE NORTHEAST AND HAS TWO SERVICE STATIONS. DOWNS IS 16 MILES TO THE NORTHWEST AND HAS 4 SERVICE STATIONS. ALL OTHER TOWNS ARE AT LEAST 32 MILES AWAY.

AS A FATHER, RURAL WATER DISTRICT DIRECTOR AND A FARMER I WANT A CLEAN ENVIRONMENT AND A HEALTHY RURAL COMMUNITY. I SUPPORT THE NEED FOR THE UST CLEANUP LEGISLATION. IF FEEL CURRENT LEGISLATION IS EFFECTIVELY ADDRESSING THE CLEANUP ISSUE. HOWEVER, IT IS NOT ADDRESSING THE THREE KEY ISSUES OF THIRD PARTY LIABILITY, RETROACTIVE CLEANUP ISSUES, AND COOPERATIVE NET WORTH EXEMPTION. THE CHANGES PROPOSED IN SB 554 RESOLVE THESE ISSUES IN A MANNER THAT IS ACCEPTABLE TO ME AS A FATHER, FARMER AND A TAXPAYER.

Testimony on SB 554
House Committee on Energy and Natural Resources
March 27, 1990
Prepared by Joe Lieber
Kansas Cooperative Council

Mr. Chairman and members of the Committee, I'm Joe Lieber, Executive Vice President of the Kansas Cooperative Council. The Council has a membership of nearly 200 cooperatives which have a combined membership of nearly 200,000 Kansas farmers and ranchers.

The current law states that if a firm has $10 million net worth they are self-insured, so they cannot use the Cleanup Fund, even though they are paying into it.

We feel this is unfair, if not unconstitutional.

We know that clean up of spills and leaks has the potential to cost several million dollars. Is it fair to ask a company to take 10 or 20 percent of their assets for cleanup when there is already a fund for that purpose?

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Attachment 8

What if these firms are not even in the petroleum business, or what if their petroleum assets are a small percentage of their assets? Three of our members are in that category:

	Net Worth	Fixed Assets After Deprec.	Petro.Assets After Deprec.
Farmway Co-op, Beloit	$16,549,589	$6,279,033	$600,632
Dodge City Co-op	12,029,000	4,991,000	402,040
Garden City Co-op	11,326,752	5,431,087	1,045,863

These cooperatives are in the grain business and the farm supply business, which includes petroleum sales. Many cooperatives are in the petroleum business mainly to provide a service for their member/owners. See attached.

I'm sure that these cooperatives are not the only businesses that fall into this category. Think of all the different types of businesses that would have underground storage for various reasons, who have net worth of over $10 million, which means they could not qualify for the fund.

It seems that we're telling the firms that have been successful and that have increased their net worth that we're going to punish them for that success.

You may say that these firms can afford cleanup insurance. There is no insurance available in most cases, and if you find it, your

premium might run as high as $1,500 per tank per year. That is one of the reasons why we have the Cleanup Fund - and remember, these are firms that are already paying into the Fund.

If small firms such as the cooperatives cannot use the Fund, they may not be willing to expose themselves to the risk of a cleanup, so they will probably close down the marginal stations. The net result of this would be that people in some small communities and their surrounding areas will be forced to drive 30 to 40 miles for gas. See attached.

Mr. Chairman and members of the Committee, some firms may have to close down their marginal stations and possibly get out of the petroleum business altogether. If that happens, it would probably mean that more and more people would decide to install their own storage tank.

I'm sure this isn't what the legislature had in mind when it passed the Storage Tank Bill last session.

We support SB 554.

Thank you for your time and I will attempt to answer any questions.

The following questions were asked by phone to 50 cooperatives selected from random from our cooperative directory. This is approximately 25% of our members.

1. How many underground storage tanks do you have?

2. Do you have any communities in your trade area that your cooperative is the only place to purchase fuel at a pump?

3. Are there any other communities in your trade area that have only one non-cooperative place to buy fuel at the pump?

4. Would you say that your cooperative provides fuel in these small communities because 1)Provides service for your owners/members
   2)It is profitable

Co-op #	#1	Co-op #2	Non-co-op #3	#4 Service	Profit
1	0	1	0	1	
2	3	1	0	1	
3	4	0	0		1
4	3	0	0	1	
5	0	1	0		1
6	0	1	1	1	
7	6	2	1	1	
8	3	0	0	1	
9	8	0	0		1
10	15	1	0	1	
11	9	0	4	1	
12	0	0	1	1	
13	9	1	0		
14	0	0	0	1	
15	6	0	0		1
16	0	0	2		
17	6	1	0		1
18	0	0	1	1	
19	6	0	1	1	
20	8	1	1	1	
21	2	2	1	1	
22	7	0	0	1	
23	4	1	0	1	
24	4	0	2	1	
25	11	0	0	1	

Co-op #	#1	Co-op #2	Non-co-op #3	#4 Service	Profit
26	0	0	1		
27	11	0	0	1	
28	20	1	1	1	
29	5	0	0	1	
30	3	0	0	1	
31	5	1	0	1	
32	5	1	0	1	
33	2	1	0		1
34	3	0	0		1
35	10	2	1	1	
36	6	1	0	1	
37	11	0	0		1
38	5	0	0	1	
39	2	1	1	1	
40	3	0	0	1	
41	4	0	0	1	
42	10	0	0		1
43	4	0	0	1	
44	3	1	1	1	
45	7	1	0	1	
46	3	1	1	1	
47	6	2	0	1	
48	8	1	0		
49	19	3	0	1	
50	3	0	0	1	
	272	30	21	37	9
	Tanks	Co-op	Non-co-op	Service	Profit

KANSAS ASSOCIATION OF SCHOOL BOARDS

5401 S. W. 7th Avenue Topeka, Kansas 66606
913-273-3600

TESTIMONY ON SENATE BILL 554
BEFORE THE HOUSE ENERGY AND NATURAL RESOURCES COMMITTEE

by

Cynthia Lutz Kelly, Deputy General Counsel
Kansas Association of School Boards

March 27, 1990

Mr. Chairman, members of the committee, thank you for the opportunity to appear before you today on behalf of our member school districts, to speak in support of Senate Bill 554. In addition U.S.D. Nos. 229 and 512 have requested that I also speak on their behalf.

The amendments to the Kansas Storage Tank Act contained in Senate Bill 554 allowed school district tank owners, and other tank owners, the necessary coverage to meet the federal financial responsibility requirements by including third party liability under the fund. School districts, like independent tank owners, must comply with these federal requirements, and although the date for securing such coverage has been extended, the third party liability aspects must be addressed. Although we prefer the approach originally taken in SB554, the modified assigned risk concept contained in New Section 4 may be successful in meeting the needs of tank owners, and merits consideration. Whatever method the committee adopts, it is clear that a method to ensure that third party liability coverage is available at reasonable costs must be

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ATTACHMENT 9

KANSAS ASSOCIATION OF SCHOOL BOARDS
3401 S.W. 7th Avenue Topeka, Kansas 66606
913-273-3600

found before the effective date of the regulations. To achieve this end, we would ask the committee to further clarify what is meant by the language concerning the inability to procure insurance through ordinary methods in New Section 4 (a).

Further, we agree that those who have commenced clean up activities should not be denied participation in the fund simply because they have acted in a prudent manner by commencing clean up activities immediately. We understand the concern of the committee for limiting the liability of the State, and believe that even partial reimbursement will benefit those districts who have incurred clean up costs.

We urge you to recommend Senate Bill 554 favorably for passage.

KASB Informal Survey of School Districts

on

Underground Storage Tanks

The information contained herein is based on an informal survey of those school districts attending the KASB governmental relations seminar (30 districts); those districts on the KDHE list (5 districts); and a random telephone survey of an additional 69 districts. In total, 104 districts (34.2%) were surveyed.

Of the 104 districts surveyed, 62 districts (59.6%) have (or had) 270 underground storage tanks. (For purposes of the survey tanks which have been removed in the past year with no replacements were included in the count.) Within the past year, 9 school districts have totally removed all of their tanks, and do not intend to replace them, bringing the number of districts who still have tanks down to 53 (51%).

Of those districts with tanks, the vast majority had only one or two tanks.

Number of tanks	Number of districts	Percentage of districts
1	29	46.8%
2	16	25.8%
3	8	12.9%
5	3	4.8%
6	2	3.2%
7	1	1.6%
9	1	1.6%
48	1	1.6%
94	1	1.6%

Of the 270 tanks:

76 have been removed

15 are in the process of being removed

95 are scheduled to be removed

17 are upgraded

41 will be upgraded

26 have a "yet to be determined" fate

To date 76 tanks have been removed, 17 tanks have been upgraded, and 16 additional tanks have been tightness tested. From these 109 tanks (40%) we begin to get a picture of the amount and extent of ground contamination related to school district underground storage tanks.

Of the 109 tanks, 35 had ground contamination (32%). However, 31 reported only minor contamination (i.e., the cost of clean-up was less than

$5000 and would not reach the fund). Only 4 tanks (3.7%) had more extensive clean up costs:

One district has completed clean up at a cost of $32,000;

One district estimates clean up at $10,000;

One district estimates clean up at $50,000;

One district is still testing to determine the extent of the contamination.

Because the two districts with 48 and 94 tanks tend to skew the results of the survey, it is helpful to look at the results of the survey with only at the 102 remaining districts who have between 1 and 9 tanks per district.

Of the 102 districts, 60 districts have 128 tanks (2.15 tanks per district with tanks).

Fifty-one (39.8%) of these tanks have been removed (40 tanks), upgraded (15 tanks), or tightness tested (16 tanks). Fourteen (27.5%) have reported contamination. Of these, 11 (21.5%) report only minor contamination. Three (5.9%) report contamination with clean up costs, or estimated costs of $10,000, $32,000, and $50,000.

No district has had a third-party injury claim filed against it.

COMMITTEE OF ...
KANSAS FARM ORGANIZATIONS

Nancy E. Kantola
Legislative Agent
3604 Skyline Parkway
Topeka, KS 66614
(913) 273-5340

STATEMENT OF POSITION OF THE

COMMITTEE OF KANSAS FARM ORGANIZATIONS

RE: S.B. 554

House Committee on Energy and Natural Resources

March 27, 1990

Mister Chairman, Members of the Committee: I am Nancy Kantola, Legislative Agent for the Committee of Kansas Farm Organizations.

The attached list of our members confirms that our Committee is composed of the majority of the agricultural organizations and associations of agribusinesses in our State. We require a unanimous vote before we take a position on pending legislation.

Our members expressed strong support for this bill because of the potential effect on suppliers of petroleum products in small towns and rural areas. The majority of businesses providing the products we who live in cities expect to find on a corner of every major intersection, own few tanks, and provide gasoline as a service. This service is not only for farmers, but for the school busses, rural law enforcement officers, business people and often the tractor trailers delivering to the businesses. In fact, 95 percent of underground tanks are owned by businesses which own 12 or fewer tanks. If they are liable for leaking tanks, possibly a problem inherited from a previous owner, and cannot participate in the fund to which they contribute, the best solution for them will be to remove the tanks they have and close down that aspect of their business.

The purpose of the Kansas Storage Tank Act was to assure prompt clean up of any problem areas. To exempt businesses which may have assets exceeding the current limit will at best work a hardship on the citizens it was intended to protect, and at worst may work against the cleanup effort.

We ask your support for the proposed amendments as described in S.B. 554. Thank you for the opportunity to tell you our concerns.

Nancy E. Kantola

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ATTACHMENT 11

MEMBERSHIP LIST

COMMITTEE OF KANSAS FARM ORGANIZATIONS

1990

KANSAS AGRI-WOMEN

KANSAS ASSOCIATION OF SOIL CONSERVATION DISTRICTS

KANSAS ASSOCIATION OF WHEAT GROWERS

KANSAS COOPERATIVE COUNCIL

KANSAS CORN GROWERS ASSOCIATION

KANSAS ELECTRIC COOPERATIVES

KANSAS ETHANOL ASSOCIATION

KANSAS FARM BUREAU

KANSAS FERTILIZER AND CHEMICAL ASSOCIATION

KANSAS GRAIN AND FEED DEALERS ASSOCIATION

KANSAS LIVESTOCK ASSOCIATION

KANSAS MEAT PROCESSORS ASSOCIATION

KANSAS MILK PRODUCERS ASSOCIATION

KANSAS PORK PRODUCERS COUNCIL

KANSAS RURAL WATER DISTRICTS ASSOCIATION

KANSAS SEED DEALERS ASSOCIATION

KANSAS SOYBEAN ASSOCIATION

KANSAS STATE GRANGE

KANSAS VETERINARY MEDICAL ASSOCIATION

KANSAS WATER WELL ASSOCIATION

MID AMERICA DAIRYMEN, INC.

WESTERN RETAIL IMPLEMENT AND HARDWARE ASSOCIATION

Kansas Association Of Wheat Growers

"ONE STRONG VOICE FOR WHEAT"

TESTIMONY

HOUSE COMMITTEE ON ENERGY AND NATURAL RESOURCES

Chairman: Representative Dennis Spaniol

SB-554

Mr. Chairman and members of the committee, I am **Howard Tice, Executive Director** or the **Kansas Association of Wheat Growers.** On behalf of our members, I appreciate this opportunity to testify today in favor of **Senate Bill 554.**

I believe the wording of the resolution passed at our annual convention, **December 11, 1989,** expresses our position quite clearly. It reads as follows:

> The 1989 Kansas Legislature passed a bill (SB 398) in response to EPA regulations for Leaking Underground Storage Tanks. The bill established a trust fund for cleanup of environmental damage, to be financed by a 1 cent per gallon tax, collected by all petroleum marketers.
>
> The KAWG recognizes the potential for environmental damage from leaking underground storage tanks, and applauds the Kansas Legislature for taking steps to protect our water supply.
>
> However, the bill had some shortcomings which still need to be addressed. First, the bill excludes, from the trust fund, businesses with a tangible net worth of $10 million or more. Three Kansas cooperatives, headquartered in Beloit, Dodge City and Garden City, have assets exceeding the tangible net worth limit, and are exempt from using the trust fund, even though the petroleum assets of these cooperatives make up a very small part of their total operation. In addition, private insurance is not available at this time.
>
> Other problems include the lack of third party liability provisions, which exempts the Kansas law from meeting EPA requirements, and the lack of a retroactive cleanup date which would encourage many abandoned and closing facilities to be cleaned up, using the trust fund, instead of becoming the responsibility of the state.
>
> RESOLUTION: **The KAWG will work for amendments to KSA 65-34,100 - KSA 65-34,125 to:**
>
> 1. **either exempt agricultural cooperatives or apply the tangible net worth clause to petroleum assets only,**
> 2. **establish a retroactive cleanup date of January 1, 1989 and**
> 3. **establish third party liability provisions which would be in compliance with EPA requirements.**

SB-554 does meet out objectives, and we urge this committee to recommend it favorably for passage.

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KANSAS GRAIN AND FEED ASSOCIATION

STATEMENT OF THE KANSAS GRAIN AND FEED ASSOCIATION

TO THE HOUSE ENERGY AND NATURAL RESOURCES COMMITTEE

REPRESENTATIVE DENNIS SPANIOL, CHAIRMAN

REGARDING S.B. 554

MARCH 27, 1990

Mr. Chairman and Members of the Committee, I am Chris Wilson, Director of Governmental Relations of the Kansas Grain and Feed Association (KGFA). KGFA's more than 1300 members constitute the state's grain handling, storage and processing industry.

We appreciate the opportunity to comment today in support of S.B. 554, amending the Kansas storage tank act. This bill would provide some very much needed changes to the act passed last year. One of the amendments needed is to enable those with detected contamination after January 1, 1989, access to the trust fund. If this change is not made, those who complied with the law during 1989, by testing or removing their tanks, and who in the process of compliance discovered contamination, will be penalized.

Another change needed is in making all owners or operators of storage tanks eligible for accessing the trust fund. Without this amendment, firms which have net worths of $10,000,000, will pay into the fund but not be eligible to access it. Several grain firms, have net worths of that amount, but their assets are in grain elevators and facilities. Clean-up expenses can have a

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very detrimental effect on those companies, despite their net worths. More importantly, it's simply fair to not exclude firms paying into the fund from accessing it.

We urge your support for S.B. 554. Mr. Chairman, I would be happy to respond to any questions.

STATEMENT

By The

KANSAS MOTOR CARRIERS ASSOCIATION

Presented to the House Energy and Natural Resources Committee; Rep. Dennis Spaniol, Chairman; Statehouse, Topeka, Tuesday, March 20, 1990.

Concerning S.B. 554 and the Kansas Storage Tank Act.

MR. CHAIRMAN AND MEMBERS OF THE COMMITTEE:

I am Tom Whitaker, Governmental Relations Director of the Kansas Motor Carriers Association with offices in Topeka. I appear here this afternoon representing our 1,525 member-firms and the highway transportation industry to express our support for Senate Bill 554.

The Kansas Storage Tank Act, adopted during the 1989 session of the Legislature, provided statutory authority to the Kansas Department of Health and Environment to implement the Environmental Protection Agency's regulations governing the installation and operation of underground storage tanks.

Additionally, the petroleum storage tank release trust fund was created to assist tank owners in meeting stringent financial responsibility requirements. The revenue for the fund will be generated by increasing the tax on motor fuel one cent per gallon on April 1, 1990. The increase in the fuel tax will remain in effect until the fund reaches $5,000,000. All petroleum fuel users will

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pay this increase in motor fuel taxes but, under current statutes, not all will have access to the release fund.

The Kansas Motor Carriers Association supports the elimination of the $10,000,000 net asset cap governing those who may access the release fund as provided in S.B. 554.

Senate Bill 554 also provides for third party liability coverage for tank owners. This additional coverage is necessary to bring the Kansas petroleum storage tank release trust fund into compliance with EPA and assure tank owners that the coverage provided by the trust fund will meet EPA requirements for financial responsibility.

The Kansas Motor Carriers Association supports the protection of our state's ground water from leaking underground storage tanks. We believe that the amendments to the Kansas Storage Tank Act will have a positive effect on efforts to protect Kansas ground water. We ask your support of Senate Bill 554.

We thank you for the opportunity to appear before you this afternoon. We would be pleased to respond to any questions you may have.

#####

exemptions concerning the use of such wildlife for an experimental, scientific or display purpose and for the issuance of wildlife importation permits therefor. Such rules and regulations shall not prohibit ~~*bighead carp (Aristichthys nobilis) from the waters of this state.*~~ *A fee may be prescribed for such permits pursuant to K.S.A. 1989 Supp. 32-988.*

Sec. 2. K.S.A. 1989 Supp. 32-956 is hereby repealed.

Sec. 3. This act shall take effect and be in force from and after its publication in the statute book.

out

issuance of a wildlife importation permit for bighead carp (Aristichthys nobilis) when possessed or used by a commercial fish grower under conditions established by the secretary. The bighead carp (Aristichthys nobilis) shall otherwise be prohibited from the waters of this state.

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BIG HEAD CARP

HISTORY AND RANGE

Natural range: China; five river syatems Introduced into 32 countries from 1913 to the present, mainly 1960-1970; into the U.S. in 1972

Uses in fisheries:
a. hybridization
b. polyculture to reduce plankton population
c. as a food fish

Spawning: almost identical to white amur; fast water for for spawning, a length of river to carry eggs for one to two days, pro-larvae for three days, then the fry migrate to still weed-choked areas to grow

Development of successful reproduction: in a very few instances reports from Russia, Japan, and Europe with no heavy populations reported

No reproduction in U.S., reasons are: no habitat fits requirements; spawning temperaturs are 22-25 degrees centigrade, after most of our indigenous species spawn, the result thereof: if successful spawning predation of floating eggs and larvae by bass, sunfish, and catfish will eleminate reproductive products of bighead carp and white amur

ADVANTAGES IN FISH CULTURE

Stockings: 100 to 400/s.a. in CC production produces up to 1000 lbs. of carp; aids water quality by reduction of plankton blooms; 50 to 300 carp/s.a. in fingerling pond

No successful natural reproduction in ponds, even after hormone injections

Now working with Big-Head in advanced LMB production

Competition statement: Kansas is marginal for opt. CC culture. The polyculture of B.H. in other states puts at disadvantage those who cannot use this species

Closing statement:
a. Kansas Fish Farmers Association
b. State Fish & Game departments
c. Newspaper article on Big-Head
d. Some method of cooperation to legalize the use of species that increase production

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Kansas House of Representatives
Energy and Natural Resources Committee
Senate Bill 158--Bighead Carp
March 27, 1990

Testimony by:
Verl Stevens
Biosponge Aquaculture Products Co.
Rt 2 Country Club Road
Pratt, Kansas 67124

My testimony on Bighead Carp is based on conversations with channel catfish producers from Alabama, Arkansas, and Missouri. Due to my activity in sales of fish food to commercial producers, I am interested in the total fish population and the interaction of the all species in the ponds. Having previously been a state fish hatchery biologist for 25 years, I am also obviously interested in the biological characteristics of the bighead carp.

The principal reason bighead carp are stocked in channel catfish ponds is for water quality management benefits. Large quantities of fish feed are added to catfish ponds and due to minimum or no water flows through the ponds, large quantities of organic matter can accumulate. These accumulations can through various biological processes produce "off flavor" in the catfish. The bighead carp are stocked to filter out and utilize as food the plankton and algae populations which result form the decomposition of the feed and waste products.

Many growers have indicated to me that the bighead have appeared to solve the "off flavor" problem. Mr. Paul Jones of Poplar Bluff, Missouri indicated he did not have a flavor problem last season after stocking bighead carp. He cannot say that the lack of "off flavor" was due totally to activities of the bighead carp, however he plans to utilize them in all his food fish ponds this season.

Other producers in Alabama and Arkansas had much the same reaction as Mr. Jones when asked about the effect of bigheads. They are being utilized in a large percentage of the ponds with the growers confident they are a benefit to production.

A few years ago, bigheads were worth about a $1.00 per pound live weight. The price has eroded to $.25 a pound now due to the large supply available to the market. Most producers plan to harvest up to 1,000 pounds per acre/year, thus currently still providing an extra income of $250.00 per acre. Some producers feel the culture of bigheads with channel catfish does not reduce their catfish crop while others feel there may be a possible reduction in channel catfish pounds.

I have not talked to any producers who have had bighead spawn in their ponds. The growers buy their stock from dealers who

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specifically spawn the fish artificially and sell the fry or fingerlings.

In my opinion, I would recommend that bighead carp be approved for use in Kansas. In pond situations where they would be utilized, bighead carp do not appear to spawn. Obviously, if the growers have to purchase fingerlings, they would attempt to prevent the fish from leaving their ponds. As sewage pond effluent guidelines become more strict, bighead carp may also provide a biological benefit to water quality.

Respectfully submitted,

Verl Stevens

March 27, 1990

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TESTIMONY IN SUPPORT OF SENATE BILL 458

LEGALIZATION OF BIGHEAD CARP

With the recent controversy concerning the use of chemicals in farming, the use of the Bighead Carp is an ideal alternative to improve the quality of the water in fish farming. Chemicals are one means by which to control algae bloom in ponds, but the use of Bighead Carp would be, by far, a better and environmentally safer way to improve the water quality of our ponds.

The Bighead Carp is currently legal in 11 states and in some states (Arkansas for example) has been there for 18 years. None of these states have reported any problems with the Bighead.

The Bighead Carp is in the same family as the grass carp (White Amur) and has a similar reproductive system. There has not been any evidence that the grass carp is reproducing in the wild in any Kansas waters (as stated by Bob Hartman, Fisheries Biologist for the Kansas Wildlife and Parks Department). Therefore there is no evidence that the Bighead Carp will reproduce in the wild.

The KDWP has said that the grass carp is causing problems in some waters, but at the same time they admit that the grass carp was overstocked causing an imbalance in the water habitat (poor management). Furthermore, according to the KDWP, the overstocking of the grass carp has only occurred in private waters.

We do not want to stock the Bighead carp in public waters but instead want to use this fish as a tool in our fish produc-

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tion. The main purpose the fish producers became interested in the Bighead carp was to increase water quality in our production ponds. Currently chemicals have to be used to kill the green algae that forms in catfish production ponds during heavy feeding. This alga if left untreated will render a production pond unusable.

I believe you would agree with me that if you had your choice to use a chemical or an environmentally safe alternative, you would want to use the safer of the two methods to achieve the same outcome. This is just one more step towards a chemically free environment.

1) chemicals are dangerous to handle.
2) chemicals are expensive.
3) chemicals are not environmentally safe.

Don't let the KDWP only tell you the what if's, make them show you evidence that the bighead carp has caused a problem in other states, they can't, there is no evidence. Get the facts and then make up your own mind. We have information to back up our claims while the KDWP are just saying " what if".

With the backing of National government and President Bush's efforts to reduce the applications of chemical use, along with Governor Hayden's support of aquaculture as a rapidly expanding industry, I urge you to consider legalizing the bighead carp in Kansas as an excellent and environmentally safe way to maintain good water quality in our productions ponds.

Thank You

Mark L. Hajek, President
Kansas Commercial Fish
Growers Association

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BIG HEAD CARP - (Hypophthalmichthys Nobilis)

Gary Bruch, Past President, Kansas Commercial Fish Growers

The Big Head Carp is recognized throughout the world primarily because of its versatility in aquaculture operations. It is native to Eastern China, and has been introduced worldwide as an important food fish, to improve water quality and increase fish production, both in culture facilities and natural systems.

It has been promoted for use in aquaculture in at least 32 countries world wide, and is now being used for production and water quality improvement in many natural water ways and water storage lakes.

Spawning and reproduction are explained in detail on the hand out sheets. Their reproduction is basically the same as the grass carp which are legal in Kansas and problems have not arisen from them. They don't reproduce in our conditions

Big Head have gill rakers which are very fine. They filter zooplankton, phytoplankton, and detritus out of the water. don't eat other fish

In our catfish ponds where we feed heavily, the water has a tendency to take on a heavy bloon or becomes dark green with algae. When this algae dies, we have an oxygen depletion which is the greatest cause of fish motality that we are faced with. The Big Head eats this green soup and improves our water quality.

Jeff Racy, representing Ozark Hatchery of Missouri, spoke at our 1989 Fish Convention. He stated he doesn't know how they help "scientifically", but they get the job done for them and in the long run, that is what they want. They save the expense of costly chemicals and are much safer to use in our environment.

This fish enables the fish farmer to have better water quality, and at the same time, produce a marketable product at virtually no added cost.

As you will see, here is a fish that is in 32 foreign countries, has been successfully used in the U.S. since 1972, has been throughly researched, and is a useful and profitable tool that can be used by the Kansas Fish Farmer. We ask your sincerest efforts in legalizing the Bighead for the Kansas fish farmers to use in their polyculture production.

The duplicated sheets I have included were taken from the study done by Dawn P. Jennings, U. S. Fish and Wildlife Service, National Fisheries Research Center, Gainesville, FL, 32606, Biological Report 88(29), 9/1988. Published by the U.S. Department of the Interior, Washington, DC.

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Table 4. *Introductions of bighead carp.*

Country	Origin	Date	Purpose	Reference
Brazil	China	1979	Assessment for culture	Welcomme 1984
Bulgaria	–	1964	Culture	Krupauer 1971; Anon. 1974
Costa Rica	Taiwan	1976	Culture	Welcomme 1981
Cuba	–	–	–	Welcomme 1981
Czechoslovakia	Hungary	1963	Inadvertent	Holcick and Geczo 1973
England	Austria	1975	Inadvertent	Stott and Buckley 1978
Figi	Malaysia	1968	Culture/ weed control	Mastrarrigo 1971
Germany FR.	Hungary	1964	Culture	Welcomme 1981
Hong Kong	–	–	–	Chaudhuri 1968; Man and Hodgkiss 1977
Hungary	China Soviet Union	1963–1964 1968	Culture	Molnar 1979 Pinter 1980
India	–	–	Culture	Alikunhi et al. 1963; Tubb 1966
Indonesia	Japan	1964	Culture	Welcomme 1981
Israel	Germany	1972 1973	Culture Culture	Rothbard 1981 Tal and Ziv 1978
Japan	China	1915–1945	Culture	Kuronuma 1954
Korea	Taiwan	1963	Culture	Welcomme 1981
Laos	Japan	1968	Culture	Chanthepha 1969
Maylaysia	China	1800's	Culture	Welcomme 1981
Mexico	Cuba	1975	Culture	Welcomme 1981
Nepal	Hungary	1972	Culture	Anon. 1973
Panama	Taiwan	1978	Culture	Welcomme 1981
Peru	Israel	1979	Culture	Welcomme 1981
Philippines	Taiwan	1968	Culture	Welcomme 1981
Poland	Soviet Union	1964	Culture	Opuszynski 1979
Rumania	–	1959	Culture	Chanthepha 1969; Huet 1970
Singapore	–	–	Culture	Tubb 1966
Taiwan	China	–	Culture	Tang 1960

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Table 4. *Continued.*

Country	Origin	Date	Purpose	Reference
Thailand	China	1913	Culture	Welcomme 1981; Chaudhuri 1968
Turkey	Rumania	1972	Culture	Anon. 1973
United States	Taiwan	1972	Culture/ research	Henderson 1979; Cremer and Smitherman 1980
Soviet Union	China	1949 +	Culture/ water quality improvement	Bardach et al. 1972; Huet 1970
Vietnam	China	–	Culture	Chaudhuri 1968; Welcomme 1981
Yugoslavia	Rumania, Hungary, Soviet Union	1963 +	Culture	Welcomme 1981

Japan imported bighead carp fry from Shanghai between 1915 and 1945 (Kuronuma 1954). In 1930, young bighead carp were identified in the River Tone, and later in Lake Kasumi. The bighead carp is believed to be established in these waters (Tsuchiya 1979).

In the Philippines, the bighead carp reportedly reproduces in the Pampanga River (Datingaling 1976); however, there is no record of its permanent establishment there.

Tang (1960) collected bighead carp fry from the Ah Kung Tian Reservoir in Taiwan, suggesting natural reproduction; however, this incident could have been caused by unusual hydrological and climatic conditions.

Bighead carp have been introduced into several countries in central and eastern Europe (Table 4). In these countries it is used for food production and water quality control (Krupauer 1971).

Bighead carp were introduced into England with a consignment of grass carp imported from Austria in 1975, which was found to contain both bighead and silver carp (*H. molitrix*). These species are being studied for use in cultivation and nutrient removal from eutrophic waters in the United Kingdom (Krupauer 1971; Stott and Buckley 1978).

Bighead carp also were introduced inadvertently into Hungary in 1963, mixed with a purchase of grass carp and silver carp. Since 1964, this species has been intentionally introduced from the Soviet Union. It is now the most popular fish used in pond farming practice and the second most important fish species (after the common carp, *Cyprinus carpio*) in Hungarian fish farming (Pinter 1980).

The bighead carp was first introduced into the United States in 1972 (Henderson 1979). It was brought into Arkansas by a private fish farmer in an attempt to improve water quality in fish production ponds (Henderson 1976, 1978, 1983). In 1974, the Arkansas Game and Fish Commission began evaluating the bighead carp and other Chinese carps to determine their potential impact on the environment and to assess their beneficial characteristics. Restrictions were enforced to prevent the fish from being stocked into public waters from private sources, and methods to control accidental populations were investigated (Henderson 1975; Marking and Bills 1981). Fisheries personnel from Auburn University, AL, also obtained stocks of bighead carp in 1974 to assess their potential in polyculture systems with existing cultured species in the United States (Cremer and Smitherman 1980).

There are records of bighead carp from open waters in the United States. In 1981, a single specimen was caught in the Ohio River at mile marker 919, below the Smithland Dam, Kentucky (Freeze and Henderson 1982); it was assumed that the fish escaped from an aquaculture facility. Other reports include one adult from Chain Lake, Schuzler County, IL, in September 1986, and two adults from the Mississippi River in Illinois – one at mile marker 364 in Hancock County, December 1986, and the other 4.5 miles NNW of Gadstone in Henderson County in January 1987.

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rematodes reported to parasitize bighead carp include *Dactylogyrus* sp., which infects the gill filaments; *Diplostomum* sp., the metacercariae of which parasitize the eyes; and *Posthodiplostomum* sp., in which the larva infects the skin and subcutaneous tissue, depositing a black pigment around the cyst it forms in the skin. This infection is termed black-spot disease (Bauer et al. 1973; Musselius 1979).

The bighead carp also may be parasitized by cestodes, including *Ligula intestinalis* and *Diagrama interrupta*, which occur in the body cavity. Diagrammosis is reported in culture situations in the Soviet Union (Bauer et al. 1973). In China, the bighead carp is reported to be a carrier of *Bothriocephalis gowkongensis*, an intestinal parasite that causes mass mortalities of numerous pond cultured species (Bauer et al. 1973).

Several species of crustaceans parasitize fish in culture situations, causing disease outbreaks and mortalities. The bighead carp is parasitized by the copepod *Lernaea*, which attaches to the body surface, musculature, or gills, forming a deep ulcer, abscess, or fistula at the point of attachment. Harding (1950) first described this infection in bighead carp from Singapore, and Shariff (1981) reported its occurrence in the eyes and on the body surface of bighead carp in Malaysia. The copepod *Sinergasilus lieni* parasitized the gill filaments of bighead carp, compressing and rupturing the gill tissue and resulting in embolism and necrosis (Bauer et al. 1973).

One abnormality reported in bighead carp is "pugheadedness" (Shariff et al. 1986). This condition is characterized by a shortened upper jaw resulting in incomplete closure of the mouth and therefore decreased feeding efficiency. Its cause may be related to genetic factors, abnormal embryonic development, or environmentally induced larval abnormalities.

3.4 *Nutrition and Growth*

3.4.1 Feeding

The bighead carp is very efficient at using the food it ingests. Because of its gill raker size (section 1.3.2), it can filter plankton organisms from the upper and middle water layers it inhabits (Chen 1934; Verigin and Makeeva 1972; Cremer and Smitherman 1980). Aldridge et al. (personal communication), documented the presence of a translucent mucous coating on the gill rakers, allowing bighead carp to collect food particles as small as 20 μm in diameter. This mucous aggregation mechanism apparently serves a size selective function; large food particles (50 μm) such as zooplankton, large colonial algae, and large detrital particles, have sufficient bulk to pass over the top of the gill raker coat directly to the gullet. Smaller food particles become embedded in the mucus, and form aggregates that increase in size toward the distal end of the raker assembly, and then pass to the gullet. Pharyngeal teeth grind plankton to allow for the more efficient digestion of usable protein (Chen 1934; Nikol'skii 1954; Henderson 1976).

Feeding levels of 13-d-old larval bighead carp in the Soviet Union were highest at 1800 h and lowest at 0400 to 0600 h (Lazareva et al. 1977). In underyearling bighead carp (68 d old), feeding was highest at 1000 h and 1600 h and lowest at 1800 h and between 0400 and 0600 h. According to Sifa et al. (1980), the rhythm of feeding may be influenced by the intensity of illumination, dissolved oxygen, and water temperature. In China, bighead carp fed most intensely during July and August, for about 18 h each day; diurnal feeding peaked between 1200 and 2000 h. The daily ration (relation of total weight of food taken in one d to the weight of the fish) for bighead carp was 6.6%.

Moskul (1977) found that the feeding rate of 2-yr-old bighead carp in the Soviet Union increased toward evening, peaked at 2000 h, and was lowest at 0600 h.

3.4.2 Food

3.4.2.1 Larvae

The food particle size calculated as most suitable for larval bighead carp starting to feed is 150–200 μg (Dabrowski and Bartega 1984). Larvae 7–9 mm long eat primarily protozoa and zooplankton, including rotifers and nauplii, copepodites, *Bosmina*, and young *Moina* (Chang 1966; Bardach et al. 1972; Marciak and Bogdan 1979). At 10–17 mm, the larvae include Cladocera in their diet. At lengths between 18 and 23 mm, they begin to eat phytoplankton and at 24–30 mm they readily consume both zooplankton and phytoplankton (Ling 1967).

Korniyenko (1971) reported that larvae in Soviet Union culture fed on infusoria for 3–4 d after their transition to exogenous feeding, and then fed mainly on phytoplankton and zooplankton.

Lazareva et al. (1977) found that early larval stages of bighead carp in the Soviet Union ate phytoplankton (Protococcaceae), diatoms, blue-green algae, and infusoria. Between 0.009 and 0.015 g body weight, the larvae ate about 100% zooplankton (Rotatoria and Cyclopoida nauplii). Phytoplankton (diatoms) accounted for less than 0.1%. Between 0.010 and 0.047 g, zooplankton represented 69% of the food consumed and included copepodite stages of Cyclopoida, small Cladocera, and small chironomid larvae. Phytoplankton represented only 2% to 18% of the food and was composed mainly of diatoms. As the larvae increased in size, there was a gradual shifting of the food eaten from zooplankton to phytoplankton. Larvae between 0.014 and 0.125 g body weight ate only 39% zooplankton, mainly *Cyclops* and *Moina*. In ponds with low zooplankton biomass, blue-green and euglenoid algae accounted for most of the stomach contents.

4.6 *The Population in the Community and the Ecosystem*

In its native range, the bighead carp is associated with other phytophagous species such as the silver carp, grass carp, common carp, mud carp (*Cirrhina molitorella*), and black carp. Selected combinations of these fishes have been used internationally in natural waters and aquaculture facilities to increase total fish production and improve water quality.

Due to their diverse food habits, the bighead carp, silver carp, and grass carp have been used extensively in the management of inland waters of the Soviet Union (Aliev 1976; Vinogradov 1979). In the Khauz Khan reservoir, the bighead carp and silver carp have been responsible for preventing intensive blooms of phytoplankton, particularly blue-green algae, and in combination with grass carp have had an appreciable effect in increasing the biomass of zoobenthos, particularly Chironomidae (Nikol'skii and Aliyev 1974; Aliev 1976). These fish also were responsible for increasing the total fish productivity of this reservoir to 54.6 kg/ha in 1973. Similar increases in productivity due to the introduction of these fishes was reported in Turkmenistan, Soviet Union (Aliev 1976). Galinskiy et al. (1973) suggested using bighead carp to provide more effective use of available food resources in the Dneprodzerzhinsk Reservoir, Soviet Union.

In pond culture in the Soviet Union, production increases from 170 kg/ha in 1965 to 490 kg/ha in 1969 and 700 kg/ha in 1973 were directly related to the introduction of the combined species of phytophagous fish bighead carp, silver carp, and grass carp (Nikol'skii and Aliyev 1974).

There are reports in pond situations of competition for food between bighead carp and common carp (Woynarovich 1968; Anon. 1970; Opuszynski 1981), and bighead carp and silver carp when zooplankton biomass is reduced (Moskul 1977; Buck et al. 1978a). Negonovskaya (1980), however, reported that in reservoirs in the Soviet Union, bighead carp generally utilize food that does not result in competition with native species.

Water quality improvement by bighead carp and silver carp also has been documented under experimental conditions. Henderson (1978, 1983), who reared bighead carp and silver carp in wastewater treatment lagoons in the United States to evaluate their effect on water quality, reported that the addition of these fish stimulated 'controlled' phytoplankton growth, increased oxygen demand due to photosynthesis, and decreased biological oxygen demand (BOD) by preventing plankton die-offs and decay. The increase in algae production caused by these fish created a subsequent increase in pH, which in turn is believed to have caused a reduction of coliform bacteria in the system.

Germany is also using the bighead carp in combination with grass carp and silver carp for biological control of undesirable aquatic vegetation in management ponds (Bohl 1971).

5. EXPLOITATION

5.1 *Fishing Equipment*

In China, before the advent of induced spawning (section 7), traps were placed along river embankments to collect drifting bighead carp fry (Lin 1949). The most popular devices used were long, conical, fine-mesh bag nets fastened to bamboo or China fir poles (Lin 1949; Dah-Shu 1957; Bardach et al. 1972). Adult bighead carp, generally brood stock, were captured by trolling with bait, or in gill nets, or in triangular nets hung from fishing vessels (Chang 1966). There are also reports of fishermen using tamed otters and cormorants to capture fish.

5.2 *Fishing Areas*

5.2.1 General geographic distribution

In China, bighead carp fry and fingerlings are collected downstream from their major spawning grounds, including the middle and lower reaches of the Yangtze River (Dah-Shu 1957; Chang 1966), as well as the West, Hwai, and Chientang rivers (Chang 1966). Adult bighead carp are distributed in rivers in the North China Plain and South China (section 2.1.1). Welcomme (1981) reported that the bighead carp is caught by angling in the basin of the Danube River in Europe.

5.2.2 Geographic range

In the Soviet Union the bighead carp has been successfully acclimatized in waters located at a latitude of 45 °N and further south. North of this latitude the commercial catch is small or non-existent (Negonovakaya 1980).

5.2.3 Depth ranges

Bighead carp fry and fingerlings are captured in conical nets at the surface of the water. Adults are generally taken with nets at a depth of about 2 m or by trolling with bait at slightly lower depths (Dah-Shu 1957; Chang 1966).

5.3 *Fishing Seasons*

In China, bighead carp fry, fingerlings and adults are generally collected during the reproductive season, from May to June (Chang 1966).

5.4 *Fishing Operations and Results*

5.4.1 Effort and intensity

No available information.

5.4.2 Selectivity

No available information.

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Henderson (1979) found that a combined polyculture system of bighead carp, silver carp, and channel catfish in Arkansas (Table 15,F) resulted in the same yield of channel catfish as in monoculture systems, and water quality of the ponds was improved. Newton et al. (1978), who compared a low-density polyculture system (bighead carp, silver carp, grass carp, largemouth bass, and channel catfish) to a channel catfish monoculture system, reported significantly greater net production from the polyculture ponds (Table 15,F). In a study to evaluate Chinese carp production methods for recycling swine manure, Buck et al. (1978b) combined bighead carp, silver carp, common carp, and grass carp with largemouth bass, channel catfish, and hybrid buffalo (bigmouth buffalo × black buffalo) in ponds receiving a constant supply of swine manure from pens placed directly above the ponds (Table 15,F). After 173 d, bighead carp gained an average of 6.5 to 6.9 g/d. The total biomass gained was 429–439 kg/ha, an average of 2.48–2.54 kg/ha per day. Henderson (1978) stocked 12,764 silver carp fingerlings/ha and 255 bighead fingerlings/ha, in a sewage treatment lagoon. After 16 mo, bighead carp production totaled 175 kg/ha; the average weight of the fish was 726.4 g.

7.9 *Harvest and Transport*

7.9.1 Harvest

In traditional culture of mixed-age fish, bighead carp are generally harvested three times a year. Fingerlings stocked in September of the previous years are cropped three times within 50 d, starting in June. Those stocked from February to March of the same year are cropped three times starting in August, and fingerlings stocked in June are cropped starting in October (Anon. 1978). The fish are harvested by gradually lowering the pond and using a seine or cast net, or by using dividing fish traps installed in the outlet structure to capture and aid in sorting the fish (Anon. 1970; Bardach et al. 1972; Tapiador et al. 1977; Green and Smitherman 1984). In polyculture ponds, the fish must be sorted to species. When the pond is lowered gradually, the species separate naturally. Bighead carp and silver carp concentrate at the surface; the bighead carp ascending after the silver carp. Grass carp and black carp concentrate at the bottom, and are the last to ascend (Lin 1949; Dah-Shu 1957; Vinogradov 1979).

7.9.2 Transportation

One of the most commonly used materials for transporting bighead carp is the hermetically sealed polyethylene bag, filled with water and oxygen in equal proportions. Density of fry placed in each bag depends on the length of transport. For shipments lasting up to 5 h, 100,000 larvae can be placed in a 40-L bag. Up to 50,000 fry can be placed in a 40-L bag for transportation between 5–24 h (Anon. 1970; Vinogradov 1979). Chen (1976) suggested that a bag 40 × 30 × 120 cm (144 L) can hold 500 fingerlings 7 cm long, 1,000 fingerlings 5 cm long, or 8,000 to 10,000 fry 2.5 cm long in 10 L of water for less than 10 h.

Before transport, the fish should be conditioned to crowding to reduce injury and mortality, and given no food so their guts will be empty (Chen 1976). Adults should be transported in well-oxygenated water (5 to 8 mg/L) at the lowest feasible temperature. At a temperature of 1 ° to 6 °C, the fish are semidormant, but above 10 °C they become very excitable. If fish must be transported at high temperatures, anesthesia may be used. Bardach et al. (1972) recommended 6.7 to 7.7 µg/L solution of sodium barbital or 1 to 4 g/L solution of urethane as effective at temperatures of 25.5 ° to 32 °C.

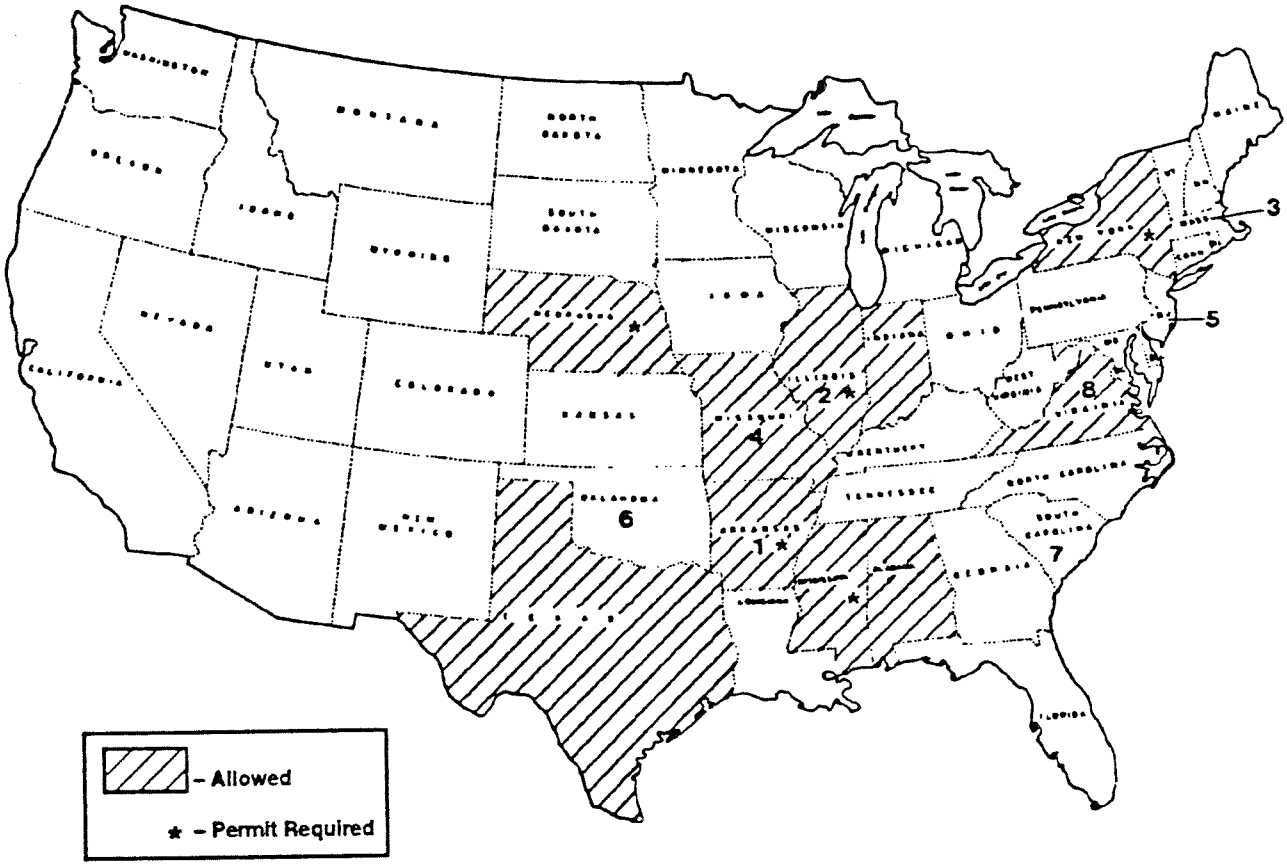
8. UTILITY

Henderson (1978, 1983) evaluated the potential of bighead carp and silver carp in improving the water quality of a sewage treatment lagoon in Arkansas. Results indicated that these fish have the ability to effect plankton removal, stimulate nutrient uptake, and generally improve the treatment efficiency of a conventional lagoon system, while simultaneously providing an annual production of more than 7,200 kg of fish/ha to offset water treatment costs. He suggested that further investigation should be conducted for finding ways of using these fishes. Examples include using them as biological filters for general water quality enhancement and in water supply reservoirs where plankton produces taste and odor problems, and as an additional source of protein produced from an unused resource.

The desirability of bighead carp as a marketable food fish was evaluated in the United States (Crawford et al. 1978). Fish raised at Auburn University, Alabama, yielded wholesale prices (live weight basis) of $0.55 to $0.99/kg to fish wholesalers and $1.10/kg to other persons. The wholesale price of completely dressed fish at supermarkets was $1.65/kg. Retail prices ranged from $2.18 to $3.06/kg at supermarkets and $3.04 to $5.26/kg from fish wholesalers. The bighead carp was marketed under the names "fish," "carp," "speckled amur," and "Chinese bass." Results from supermarket sales indicated that bighead carp weighing 3.6 to 5.4 kg could be successfully marketed at retail.

In Arkansas, marketability tests revealed that the palatability of bighead carp flesh was comparable to or better than that of channel catfish or bigmouth buffalo (Henderson 1976). The bighead carp has potential value in the United States as either a food fish for human consumption, for use in organic fertilizer or as a fish meal by-product. The market value for this fish could be profitable for any of the described uses because production costs are low.

Bighead Carp
Status



1 **Arkansas** - cannot place into any body of water where ingress into public waters is not entirely blocked.
2 **Illinois** - importation by aquaculturists is allowed. Their sale is allowed also, but not by aquaculturists. They are sold dead as food by commercial fishermen.
3 **Massachusetts** - permits issued where fish are used in closed cycle aquaculture ventures.
4 **Missouri** - it is illegal to liberate into natural waters.
5 **New Jersey** - no law against importation and sale, but there is law against stocking.
6 **Oklahoma** - may be permitted for research only.
7 **South Carolina** - may be permitted for research only.
8 **Virginia** - anticipate requiring permit.

Figure 7

BIGHEAD CARP
Status

ATE	IMPORTATION ALLOWED	SALE ALLOWED	RESTRICTIONS AND COMMENTS
abama	Yes	Yes	No restriction.
izona	No	No	
ansas	Yes	Yes	Permit required; certain criteria of waterbody must be met; can not place into any waterbody where ingress into public waters is not entirely blocked. Must register as vendor in order to rear and sell. Currently reassessing regulations.
lifornia	No	No	Although not specifically prohibited, proposals for introduction have been disapproved.
lorado	No	No	
nnecticut	No	No	
laware			No position.
orida	No	No	Plan to reassess regulations.
orgia	No	No	Would consider permits under certain conditions (did not specify conditions).
aho	No	No	
linois	Yes	Yes	Importation by aquaculturists is allowed by current regulation. Their sale is allowed also, but not by aquaculturists. They are sold dead as food by commercial fishermen.
diana	Yes	Yes	No restrictions.
wa	No	No	No permits will be issued until research proves that they would not be detrimental to native fish species.
nsas	No	No	(Plan to reassess status if necessary.)
ntucky	No	No	
ine	No	No	
ryland	No	No	
ssachusetts	Yes	Yes	Permits are issued where fish are used in closed cycle aquaculture ventures.
chigan	No	No	

19-8

	IMPORTATION ALLOWED	SALE ALLOWED	RESTRICTIONS AND COMMENTS
sota	No	No	Cannot import, transport or stock any fish without permit from Commissioner. Have surveillance for eradication.
ssippi	Yes	Yes	Permit required, certain criteria of water-body must be met.
uri	Yes	Yes	It is illegal to liberate into wild waters. Grass carp were banned in Missouri for several years following importation to U.S. The ban was totally ineffective in controlling use by private aquaculturists and the fish were introduced into the wild in surrounding states. A ban in Mississippi River drainage is academic at this time.
na	No	No	
ska	Yes	Yes	Permit required. In process of developing new guidelines.
a	No	No	
ampshire	No	No	
ersey	Yes	Yes	There is no law against importation or sale but there is law prohibiting the stocking of any kind of carp.
exico	No	No	
ork	Yes	Yes	Stocking permit required to place in any water except aquaria.
Carolina	No		
Dakota	No	No	
	No	No	
oma	No	No	May get permit from Director for research purposes.
ı	No	No	
lvania	No	No	
Island	No	No	
Carolina	No	No	Have issued permit for research only.
Dakota	No	No	
see	No	No	
	Yes	Yes	No restrictions.
	No	No	

'ATE	IMPORTATION ALLOWED	SALE ALLOWED	RESTRICTIONS AND COMMENTS
rmont	No	No	
rginia	Yes		Anticipate requiring permit.
shington	No	No	
st Virginia	No	No	
sconsin	No	No	Have not and do not intend to approve importation permits or Private Fish Hatchery License.
oming	No	No	

19-10

DOCUMENTATION PAGE	1. REPORT NO. Biological Report 88(29)	2.	3. Recipient's Accession No.

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5. Report Date

6.

7. Author(s)

Jennings, D.P.

8. Performing Organization Rept. No.

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National Fisheries Research Center-Gainesville
U.S. Fish and Wildlife Service
Gainesville, FL 32606

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National Fisheries Research Center-Gainesville
U.S. Fish and Wildlife Service
Gainesville, FL 32606

13. Type of Report & Period Covered

14.

15. Supplementary Notes

16. Abstract (Limit: 200 words)

The bighead carp is recognized throughout the world because of its versatility in aquaculture operations. Although endemic to eastern China, it has been introduced throughout the world as an important food fish. It has also been use with other fish to improve water quality and to increase fish production, both in culture and natural systems. This literature summary follows the Food and Agricultural Organization of the United Nations (FAO) species synopsis format.

17. Document Analysis a. Descriptors

Bighead carp, Hypophthalmichthys nobilis, Cyprinidae, aquaculture, exotic, food fish, water quality

b. Identifiers/Open-Ended Terms

Region 8, Research and Development

c. COSATI Field/Group

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19-11

Kansas Commercial Fish Growers Association

March 27, 1990

MEMO

TO: Kansas House of Representatives

FROM: Charles W. Wallace
Sec-Tres. Kansas Commercial Fish Growers Association

SUBJECT: Legislative action regarding bighead carp

As one of the representatives of the KCFGA testifying in favor of this bill last session I would like to reaffirm our position on this matter. We as an organization are definitely united on this matter.

We feel that the Kansas Department of Wildlife and Parks' position of denying us the use of this fish is unjustified. I do not know how much more evidence is necessary to prove our position that the use of this fish is not only beneficial to fish growers, but safe from an ecological standpoint. Within the available literature lies a tremendous volume of evidence reinforcing this point.

The bighead carp is presently legal in eleven (11) states. A few of these states include Missouri, Arkansas, Alabama, Mississippi and Iowa. A permit system is in practice in a number of others. With the exception of Colorado all other states bordering Kansas allow bighead carp in some capacity. I would suggest to those who cannot tolerate the introduction of this fish into Kansas to realize that the fish will end up here anyway regardless of any legislative action by Kansas. Granted, aquaculture is big business in many of these states, but I might add that these states also furnish recreational sport fisheries second to none.

The introduction of the German carp in the 1800's was a mistake that created such a phobia that the very work "carp" is looked upon with negativity. The bighead carp is not the German carp however, and like the grass carp has met with the same that occurred over the grass carp some twenty years ago. Now the grass carp is widely used with great benefit.

I would also like to point out that various Fish and Wildlife agencies across this country are directly responsible for the introduction of such "exotics" as the walleye, northern pike, striped bass, white bass, crappie, and treadfin shad. I wonder if the introduction of any of these fish drew the level of scrutiny that our organization is experiencing in our endeavor to legalize the bighead carp. The Dept. of Wildlife and Parks are playing the role of the hypocrite in trying to stall the KCFGA off with a lot of unnecessary busy work.

H ENERGY AND NR
3-27-90

ATTACHMENT 20

Consider that aquaculture is the fastest growing segment of agriculture today. The possibilities for growth of this industry are staggering. In no area of agriculture will you find the absence of exotics. We feel we are being discriminated against. In addition we feel that we are being denied the use of this fish not because there is evidence to suggest detriment of the existing ecosystem, but merely because the KDWP simply has the power to do so.

If these fish were going to be proven a threat to the environment, I should think that this proof would have surface by now. In the state of Arkansas the bighead carp has been in use in commercial fish operations since 1973.

Society today is suffering now from the affects of being a chemically and drug oriented society. As our focus turns to more biologically sound practices to work with our environment the bighead carp are but another means by which biological controls are used in place of chemicals. We should take a lesson from certain Asian and Middle East countries. These countries accomplish many things through the use of biological controls. In a system know as 'polyculture' each fish controls a specific aspect of the environment. What has been effective for literally centuries in these foreign countries, can also be effective in our county.

I urge your support of this bill. The commercial fish growers that make up the body of the KCFGA need and deserve the use of this fish if aquaculture is to continue to grow in Kansas.

Honorable Representatives:

I am Sidney Corbin and have been in the fish farming business for 26 years. My father-in-law was the first commercial fish farmer in Kansas starting in 1929. During this time we have both operated under unusual and restrictive laws. During the last 20 years we have been able to get several laws changed by legislation which has been beneficial to the fish farmer.

Last year we imported 7.5 billion dollars worth of fishery products, while U.S. raised a total of 500 million dollars of fishery products. The state of Kansas had only 2.5 million dollars which could be greatly increased and enhanced if you will pass bill 158 with no strings attached. The bill is known as the big head carp bill.

I was arrested in September of 1987 for having big head carp on my farm. Since that arrest, I have been working to make big head carp legal in the state of Kansas. It has been legal in Arkansas, Missouri & Nebraska for many years. The big head carp can swim from the border of these states into the waters of the state of Kansas. If they can swim freely in the state waters, I should be able to have them on my fish farm to sell for cleaning algae and sewage from lagoons, for cleaning stock ponds, for keeping my fish ponds free from algae and for selling them for food fish for around $1.00 a pound. I am presenting an article taken from the Farm Journal that states that algae can be deadly. Big head carp can replace undesirable chemicals that are used many times to control algae. Many lakes can be improved by the use of big head carp. One such lake is the lake below the Milford Dam that is used for water supply for the Milford hatchery. The fishery department bought tons of alumn to treat the water instead of using big head carp. By my testimony you can see that big head carp do not eat other fish but live on algae in the water.

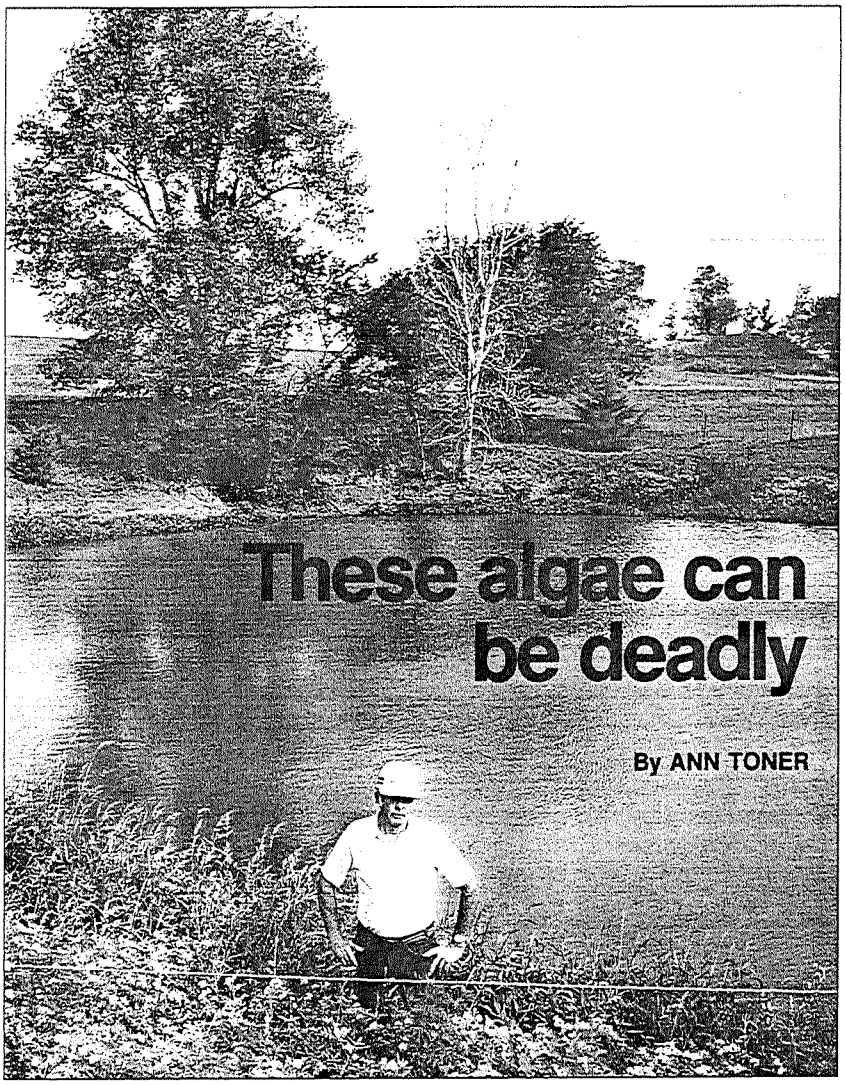
During 8 years time, we have approximately 20,000 people to come to our farm for catfish and trout. They pack the fish in suitcases and take them back to New York, California, Washington and many other states. They come back, repeatedly, because of the flavor and quality of my fish.

I am asking you to vote for bill 158 to make big head carp legal in the state of Kansas. With the senate carrying by a big margin, and your support, we as fish farmers can be in competition with other states and improve our business.

Sidney Corbin
Towanda, Kansas

H ENERGY AND NR
3-27-90

ATTACHMENT 21



These algae can be deadly

By ANN TONER

PHOTO BY THE AUTHOR

THE CALM WATERS OF THIS POND proved deadly last spring when Nebraska farmer Kenneth Harms lost three cows that drank the blue-green algae-tainted water. The algae's spurts of excessive growth can be toxic to livestock.

■ The pregnant cow was old and fat. When Kenneth Harms found her lying dead in the pasture last April, the Auburn, Neb., farmer thought she'd succumbed to some calving complication. The next day, when Harms found two more cows mysteriously dead in their tracks, he knew he had a problem.

He mulled over the possibilities. The limestone-strewn pasture couldn't be the problem; he had run cattle on it for years. Harms didn't know of any poisonous weeds growing in it. However, he noticed that his pond had a distinct greenish color.

His veterinarian suspected the pond. Harms took some water samples and moved his cattle. A few heifers and two orphaned calves remained behind because Harms couldn't get them to cross the electric fence line.

Laboratory tests confirmed the veterinarian's suspicions. The pond contained a concentration of blue-green algae. The algae's occasional, sudden "blooms," or spurts of excessive growth, can be toxic to livestock.

Toxic blue-green algae blooms have been reported in the U.S., Europe, Africa, Australia and New Zealand. While ordinary, harmless green algae grows in masses both on and under the water, blue-green algae grows on the surface.

When it blooms, the algae looks like green paint scum on the surface, says Sidney Stohs, a researcher at Creighton University who is trying to find an antidote to the toxin. The algae can bloom to toxic proportions and dissipate all within a few days' time.

Blooms tend to occur in ponds rather than moving water. Nitrogen and phosphorus enhance the algae's growth, so it often blooms where there is fertilizer or manure runoff into the pond.

Temperatures are also a factor. Toxic algae usually ceases to be a problem when temperatures fall below 50° to 60° and the water cools.

Because the algae grows on the water's surface, toxic concentrations are found on the leeward side of ponds. Depending on which side of the pond cattle drink from, the toxin may affect the entire herd, a few animals or none at all. If an animal makes it through a day after exposure to the toxin, it will likely have a full recovery.

When ingested, the blooming algae produces a liver poison. Blood flows into the liver and accumulates there instead of flowing out. The liver may double or triple in size before death occurs. The major cause of death is hypovolemic shock—low blood volume.

Death usually occurs minutes to hours after an animal drinks the toxic algae-tainted water, according to Norman Schneider of the University of Nebraska Veterinary Diagnostic Center.

Toxic algae has been known to kill cattle, sheep, hogs and even dogs who drink from a pond in "bloom," Stohs says. While chlorine kills the algae, it may be difficult or undesirable to chlorinate an entire pond.

Jerry Barger of Greenwood, Neb., attests to how quickly the toxic algae can bloom and disappear. Last April when Barger inspected a spring-fed pond in his pasture, he thought for a moment that vandals had dumped turquoise paint in it.

Water samples indicated the presence of blue-green algae, but not of a toxin. Barger fenced off the pond and moved his 50 head of cows and their calves to another water source. "I went back two days later after a rain, and it was gone without a trace," he says.

Since losing his three cows, Harms checks his pond frequently. It's still fenced off. Although it teems with frogs and minnows, he still worries if the pond is safe to drink from. He wonders if the toxic algae will come back.

"Six weeks after I lost the cows, there was a bunch of big catfish lying dead around the edge of the pond, 12 or 14 of them, all four- or five- pounders. But there were still lots of smaller fish. They seemed to be just fine.

"The heifers and the two orphan calves also drank out of the pond. They're doing just fine," he adds.

"They say it's safe until it blooms. But I can't check the pond and take its temperature every few hours," Harms says. "It's a waste to have the water and not use it." ◄

NATURAL RESOURCES SERIES
Agriculture & Natural Resources
TIMELY INFORMATION
ALABAMA COOPERATIVE EXTENSION SERVICE/AUBURN UNIVERSITY, ALABAMA 36849

December 3, 1987

BIGHEAD CARP

by John W. Jensen
Fisheries Specialist

For those of you looking for a little extra profit from your pond(s), markets for other fish species are developing.

For example, the demand for bighead carp is growing steadily among Chinese Americans. Most of the existing market is in New York City but other areas could be developed. Prices to the fish farmer for bigheads have ranged from $0.60 to $1.00/lb in recent years with an average of about $0.65/lb.

Bighead carp can be stocked with catfish resulting in an average of 600-800 pounds growth per acre per year without affecting normal catfish production. Bighead buyers prefer carp that average about 4-10 pounds each so a good stocking rate would be 60-100 fish per acre. Start with at least a 6" bighead fingerling to allow for this amount of growth. Bigheads eat no feed, but filter plankton from the water for their food. Therefore, the only costs involved are fingerlings, harvesting, sorting and marketing.

Bighead carp grow so much faster than catfish that they can be graded off the top using a large mesh seine or sock. However, this is a major seining operation requiring the right mesh seines, socks, a boom truck to load the fish and labor. The total harvesting operation may cost a farmer 10-15¢/lb to contract. A rough budget for a 15-acre pond follows:

1200 - 6" bigheads @ 50¢ each	=	$ 600.00
Harvesting 12000 lbs @ 12¢/lb	=	1440.00
Miscellaneous	=	200.00
Total Costs	=	$ 2240.00
Receipts from 12000 lbs. @ 65¢/lb.	=	$ 7800.00
Profit	=	$ 5560.00

Even though the Chinese carp market is strong, it is small enough to become saturated quickly. On the other hand, with the extra scheduling and other headaches involved, it is doubtful state fish farmers will rush to produce bigheads in great numbers.

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21-3

S.B. 158

Presented To: House Energy & Natural Resources Committee

March 27, 1990

Provided By: Kansas Department of Wildlife and Parks

S.B. 158 would allow unrestricted use of bighead carp in the waters of Kansas. Bighead carp have the very real potential of causing irreparable damage to our native fisheries resources, recreation for 1/2 million anglers, and a $200 million dollar sport fishing industry. If enacted, the Department would be powerless to take any action to avoid the losses.

Spawning conditions for bighead carp do exist in Kansas and Missouri has documented reproduction. They spawn in flowing waters, generally from April into June, when water temperatures reach 68 degrees F. A raising water level with increasing turbidity enhances reproduction. These conditions exist in numerous Kansas rivers and streams.

In October of 1988, I conveyed my willingness to consider guidelines under which growers could use the carp. Dr. Harold Klassen met with the growers to discuss guidelines, but his input was rejected by the growers in favor of taking this legislative approach. Again, on February 1, 1990, I made a similar offer. The growers decided to continue the legislative approach. There have been other meetings at the staff level -- all to no avail.

A substantial package of material has been distributed as a part of our testimony. It includes technical reports and a fact sheet, communication to growers and from Dr. Klassen, chronology of events, last year's Senate testimony, information on reproduction from Missouri and estimated value of bighead carp to growers.

The Department most strongly opposes S.B. 158. Sport fishing and the resulting recreational and economic values it provides to Kansas are too valuable to jeopardize for the benefit of a few. This <u>is</u> an important issue to the future of Kansas and we urge that this bill not be passed.

H ENERGY AND NR
3-27-90

ATTACHMENT 22

S.B. 158 (BIGHEAD CARP)

- FACT SHEET -

Unrestricted use of the bighead carp in all waters of the state will soon be debated by the House Energy and Natural Resources Committee. This issue is of extreme importance to the long term welfare of our fisheries resources, the many people who enjoy those resources, and the state's economy. This fact sheet is prepared to facilitate discussion regarding the pros and cons of the issue from the Department's prospective.

DESCRIPTION:

- Dark grey back and off-white to yellow on bottom portion.
- May grow to 40 or 50 pounds, 90 pound specimens reported in U.S.S.R.
- The fish has a long life span.

FOOD:

- Primarily feeds on zooplankton, but will consume phytoplankton or waste material when zooplankton are scarce.
- Zooplankton are gathered on gill rakers by a mucous layer and passed on to the stomach.
- Zooplankton are a direct food source for larval and fry stages of sport fish and by many prey fish and insects that make up the diet of older sportfish.
- Zooplankton depletion may substantially change phytoplankton numbers thus allowing blue-green algae to thrive and degrade water quality.

DISTRIBUTION:

- Introduced from Taiwan in 1972 for use in commercial fish operations.
- Potential reproductive range is from Mexico to Southern Canada.
- Bighead carp have been found in major river systems including the Ohio, Mississippi and Missouri Rivers.
- Suspected reproduction has been reported in the Missouri River.

REPRODUCTION:

- Females are sexually mature at 3 to 9 years of age at lengths that exceed 25 inches. Mature males are somewhat younger and shorter.

- Spawning:
  - April to June although may extend longer under proper conditions.
  - Larger river systems where water velocities exceed 2.6 ft./sec. and water temperatures range from 68 degrees F. to 86 degrees F.
  - Spawning occurs as water levels rise and turbidity increases.
  - The above conditions occur in Kansas.
  - Spawning does not occur in standing water.
- Utility:
  - The bighead carp occupies a place in commercial pond production that allows for growth with minimal financial investment by growers.
  - The fish is edible and is comparable to bigmouth buffalo and channel catfish.
  - Primary market appears to be in Asian communities in larger cities.
  - Supply apparently exceeds demand as prices have fallen from around $1.25/pound to $.50-.70/pound delivered.
  - Bighead carp in a commercial system may improve water quality and consequently decrease the amount of water flow needed for healthy catfish production. Chemical dependency for maintaining water quality may be reduced. However, research in this area is still needed.
  - Plankton imbalance in a commercial system due to the bighead carp may also create other water quality problems, such as with blue-green algae which under some conditions can be toxic.
  - Commercial pond yields and average size for channel catfish are somewhat lower with Asian carp present; the yield of bighead carp without the need to add supplemental feed may compensate for the catfish decreases.

STATUS IN OTHER STATES:

- Unrestricted importation and sale of bighead carp is allowed only in Alabama, Indiana, and Texas.

- Transportation and sale of bighead carp is prohibited in 35 states.
- Remaining states place some type of restrictions on transportation, possession, sale or stocking of bighead carp and/or require a permit to possess them.
- Colorado prohibits sale and transportation.
- Oklahoma prohibits sale and transportation, but does issue research permits.
- Missouri allows transport and sale, but prohibits entry into wild waters.
- Nebraska allows transport and sale, but a permit is required to possess or sell.
- In general, states with restrictions include some or all of the following:
    - Operations must be above the flood plain.
    - Facility must not have a watershed, or if a watershed is present, special equipment is required to ensure that bighead carp do not escape.
    - No live sales.
    - Stocking only in approved facilities.
    - Stocking sterile fish.
    - Adequate facilities to prevent accidental release.
    - Permitting and/or registration of growers.
    - Regulation of growers and their operations.
    - No reproductive facilities.
    - Inspection of facilities and of fish species present.
    - Payment of fees by growers for permits and for services supplied by the natural resource agency.
    - Report requirements for growers.

GENERAL:

- Over 500,000 people participate in fishing in Kansas, and slightly over 300,000 are license buyers.
- They contribute approximately 3 million dollars in license and stamp fees.
- Contribute an estimated 200 million dollars to the state's economy each year. (This estimate is from the 1985 National Survey of Hunters and Fishermen as compiled by the U.S. Fish

and Wildlife Service and adjusted to reflect 1988 conditions.)

- Slightly less than 80% of state park patrons reported that fishing was an activity they participated in while visiting state parks.
- The bighead carp, should it become established in our waters, would adversely impact our sport fisheries and result in economic loss to Kansas.
- Should this fish become established, it would result in direct and indirect competition with some threatened and endangered species and further stress those species.
- The paddlefish, a native species to Kansas, is also a plankton feeder and is found in larger river systems. Although not a threatened or endangered species, paddlefish populations appear to have shown some decrease in recent years, primarily due to habitat losses. There is nation-wide concern among fisheries scientists the bighead carp would outcompete and further stress the paddlefish.
- Feeding habits of the bighead carp are such that they would not be taken on hook and line, except accidentally or by snagging. They would not provide any appreciable recreational fishing.
- The department is aware the fish may hold some economic value to commercial growers and is willing to develop guide-lines or regulations that would allow the use of bighead carp under proper restrictions for those growers able to meet requirements.

* Although a total loss of the sport fishery or the economic benefits of that fishery is not anticipated, even a 10 or 20% reduction would be significant on recreational opportunity and on the economy of our state.

Pratt Operations Office
Hays Regional Office
Topeka Regional Office
Dodge City Regional Office
Valley Center Regional Office
Chanute Regional Office
Atchison District Office
Blue Rapids District Office
Byron Walker Wildlife Area
Cedar Bluff State Park
Cheney State Park
Cheyenne Bottoms Wildlife Area
Clinton State Park
Colby District Office
Council Grove Wildlife Area
Crawford State Park
Farlington Fish Hatchery
Meade Fish Rearing Station
Milford Fish Hatchery
Pratt Fish Hatchery
Downs District Office
El Dorado State Park
Elk City State Park
Emporia Wildlife Invest. Office
Fall River District Office
Fall River State Park
Garden City District Office
Glen Elder State Park
Kanopolis State Park
Kansas City District Office
Lovewell State Park
Manhattan District Office
Marais Des Cygnes Wildlife Area
Marion Wildlife Area
Meade State Park
Melvern State Park
Milford Education Center
Milford State Park
Milford Wildlife Area
Mined Land Wildlife Mgmt. Area
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Perry State Park
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Pomona State Park
Prairie Dog State Park
Scott State Park
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Tuttle Creek State Park
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Wilson State Park
Winfield District Office

ASIAN CARP IN KANSAS

By
Thomas D. Mosher

Partially Funded by
PR/DJ Comprehensive Planning Option
Project FW-9-F-7

Fisheries & Wildlife Division
Investigation & Inventory Section

August 1989

22-7

ASIAN CARP IN KANSAS

Chinese fish farmers have been rearing a multispecies complex of Asian carp for generations. The principle behind their technigues is to balance the conditions between the species complex and the available fish foods by stocking their ponds with carp species that utilize several niches (Tang 1970). The result produces a pond with a complex food web that generates many pounds of fish with minimal imput of fish feed.

Three species of Asian carp have been imported into the USA to be used for aquaculture and various forms of aquatic "habitat improvement". Grass carp, *Ctenopharyngodon idella*, are the most widespread and are used to biologically control nuisance growth of aquatic vegetation. Both diploid (reproductive) and triploid (sterile) forms of grass carp have been allowed in Kansas since 1978. Bighead carp, *Hypophthalmichthys nobilis* (formerly *Aristichthys nobilis*), and silver carp, *Hypophthalmichthys molotrix*, are used in various stages of aquaculture to improve water quality and utilize nutrients not used by channel catfish, *Ictalurus punctatus*, and bait minnows (Cyprinidae). Bighead carp also provide a limited food fish market in Asian communities within the USA. The importation and/or possession and release of both bighead and silver carp have been prohibited in Kansas since February 1, 1978, except any specimen in possession prior to that date could be retained in closed confinement with a permit from the director of the Kansas Fish and Game Commission (K. S. A. 32-164a). However, there has been a recent push by the Kansas

Commercial Fish Growers Association to allow the importation of bighead carp into the state to augment their production, and to "maintain an ecologically balanced pond environment without the use of chemicals" (Henderson 1987).

This report summarizes biological characteristics of bighead and silver carp, and reviews their status within the USA.

Bighead Carp

Description: Bighead carp are deep bodied and compressed laterally. The head is large, greater than 1/3 the standard length of the fish, with a upturned lower jaw, and small eyes that are located below the body's axis. Scales are small and cycloid. The lateral line is ventrally concave and contains 98-100 scales. A smooth keel extends from the pelvic girdle to the caudal fin.

The dorsal area is dark grey while the ventral part of the body is off-white to yellow. Dark grey blotches are irregularly spaced on the sides and back. Bighead may reach 40 to 50 pounds, and 90 pound fish have been reported in the U.S.S.R.(Jennings 1988).

Males develop sharp edges on the dorsal surface of the anterior pectoral fin rays that persist for life (Louisiana Department of Wildlife and Fisheries 1989).

Food: Bighead carp feed primarily on zooplankton they strain with long, closely spaced gill rakers. When zooplankton is scarce, they may feed on phytoplankton and detritus, but avoid blue-green algae unless forced to eat it. Phytoplankton and other fine particles are gathered by a mucous layer on the gill rakers and passed to the stomach. Bighead may also consume artificial feed, although conversion from catfish pellets is poor (Cremer and Smitherman 1980).

U. S. Distribution: The bighead carp was introduced into the USA from Taiwan in 1972 (Henderson 1979). To date records of bighead in the wild have been reported in the Ohio River (Freeze and Henderson 1982), the lower Mississippi River (Jennings 1988), and the Missouri River (Lee Redmond, Missouri Department of Conservation, Personal Communication). Although there have been reports of released fish in Illinois and Missouri, there have been no reports of reproductive success in the USA to date (Louisiana Department of Wildlife and Fisheries 1989).

Reproduction: Females reach sexual maturity in 3 to 9 years, depending on climate, at lengths that exceed 25 inches. Males mature earlier than females (2-8 years) and at smaller sizes (Jennings 1988).

Spawning season has been reported as April to June when water temperatures range from 68 F to 86 F. Spawning takes place in large river systems where water velocities exceed 2.6 ft/sec (Jennings 1988). Nikolsky (1962) reports spawning takes place as

water levels rise and turbidities increase, thus providing ample water for the semibouyant eggs, and protection against predation. Spawning does not occur in standing water.

Silver Carp

Description: The head of the silver carp is moderately sized, about 1/4 standard length, with jaws of equal length. The lower jaw is upturned and has a tubercle, while the upper jaw is slightly notched. The eyes are small and located below the body axis. The lateral line is slightly decurved and contains 110-123 scales. An abdominal keel extends from the throat to the vent. Silver carp have dark grey backs that grade to white or silver on the rest of the body.

Food: Larvae eat both zooplankton and phytoplankton, whereas adults eat predominantly phytoplankton and planktonic bacteria. Vovk (1974) noted that diatoms and protococci are its preferred food; however, it will eat some species of blue-green algae. Kajak (1977) observed that silver carp will avoid some species of blue-green algae, and that in cases where the phytoplankton concisted exclusively of blue-green algae, the selectivity of zooplankton was higher. Zooplankton accounted for less than 0.7% of the total planktonic organisms in the diet of adult silver carp in a study by Tang (1970). Unlike bighead carp, silver carp will not eat pelleted catfish food (Cremer and Smitherman 1980).

U.S. Distribution: Silver carp were introduced into the USA in 1972 (Henderson 1979). Since then they have escaped into the Arkansas River and White River of Arkansas (Freeze and Henderson 1982) and have been reported by commercial fishermen in the Missouri River and Mississippi River in Missouri (Lee Redmond, Missouri Department of Conservation, Personal communication).

Reproduction: Females mature in 2 to 9 years and males in 1 to 6 years depending on location and water temperature (Louisiana Department of Wildlife and Fisheries 1989). Spawnning occurs in rivers when temperatures range from 64 F to 77 F. Spawning coincides with rising water levels and increasing turbidity which helps keep eggs afloat and protect them from predators (Nikolsky 1962).

Comparison of Bighead to Silver Carp

General morphology of the bighead and silver carp are similar. Differences in the two species are outlined in Table 1.

The most striking difference between them is the head size, and apparent location of the eye. In bighead carp the head is greater than 1/3 the standard length, whereas in silver carp the head is only about 1/4 the standard length. The eyes are located below the body axis in both species, but they appear to be more lateral in the silver carp, and more ventrally located in bighead carp.

Table 1. Comparison of external features of silver carp (*Hypophthalmichthys molotrix*) and bighead carp (*H. nobolis*).

CHARACTERISTIC	Silver Carp	Bighead carp
Color	silver-grey	dark, blotchy
Keel	caudal fin to throat	caudal fin to pelvic gridle
Jaw	moderately upturned	sharply upturned
Lateral line scales	110-123	95-105
Head	0.25 SL	0.36 SL

Both species have a fleshy, abdominal keel. The anterior extension of this keel is the pelvic girdle in bighead carp, whereas the keel of silver carp extends to the throat.

The gill rakers of bighead carp are shorter and thicker than those of the silver carp. Cremer and Smitherman (1980) noted the mean gill raker length of 8.7-in bighead carp to be 3230 um with a width of 85 um. In similarly-sized silver carp, the mean length was 7225 um and the width 34 um. In bighead carp the gill rakers are closely set but seperate. Silver carp, however, have gill rakers that are covered with a net-like matrix that binds the rakers together. This allows smaller plankton to filter through, but prevents passage of larger plankton. As a result, bighead carp filter larger particles (0.0007-0.12 in) than silver carp (0.0003-0.004 in). This also allows silver carp to be more efficient feeders of phytoplankton.

The difference of diet is further reflected by the intestinal length of the two fish. Silver carp have intestinal lengths that are 3.5-7.3 times longer than their total length. The intestinal lentgh of bighead carp ranged from 2.0 to 4.5 times greater than their total length (Cremer and Smitherman 1980).

Environmental Impacts

Both bighead and silver carp are primary consumers. The morphology of their gill rakers allow them to very effectly

remove plankton from the water. This ability puts them in direct competition with many native sport and food fish.

Bighead carp, if present in large numbers, could severly reduce the zooplankton standing crop. Zooplankton is used directly by sportfish during their larval and fry stages, and is used indirectly throughout the life of sportfish as food for the fish and insects that sportfish feed upon. This impact is compounded by the fact that when zooplankton densities are low, bighead have the capacity to adapt their feeding habits to consume phytoplankton and detritus. This puts them in further competition with minnows (Cyprinidae), darters (Percidae), and gizzard shad (*Dorosoma cepedianum*). Extensive grazing of zooplankton may substantially change phytoplankton communities and thus allow nuisance phytoplankton such as blue- green algae to thrive and degrade water quality.

In contrast, silver carp feed primarily on phytoplankton. Burke et al. (1986) noted a considerable overlap in the size ranges of algae that were consumed by silver carp and various species of zooplankton. Size of algae increased in the presence of silver carp and thus became too large for zooplankton to consume. Therefore, silver carp also reduce the standing crop of zooplankton by competing for the same food source.

Furthermore, Asian carp are tolerant of widely flucuating environmental conditions that may give them an additional competitive edge over native species. The net result would be a reduction in piscid diversity, sportfish biomass, and angler opportunities. Swar and Gurung (1988) noted the harvest of

indigenous fishes declined 42% after stocking bighead and silver carp in Nepal.

Utility

Bighead and silver carp have been used by the Chinese in multispecies fish culture to "harmonize" production for generations (Tang 1970). These carp help maintain balance between fish production and the available fish foods by using food resources that are often flushed from culture ponds as as excess waste.

Bighead and silver carp were brought into the USA for study animals, and to control water quality problems in catfish culture ponds (Huner 1988). By eating phytoplankton, silver carp control blue-green algae and allow green algaes to become prevelant. Bighead carp eat zooplankton and in turn further help to "adjust" the composition of phytoplankton (Huner 1988). Wilson et al. (1984) suggested that algal biomass was reduced in ponds stocked with silver carp because chlorophyll-a concentrations were lower in ponds after they were stocked. However, Burke et al. (1986) showed that algal biomass increased in ponds with bighead and silver carp, but that ammonia and nitrite concentrations were lower. Many authors stress the stability in planktonic populations when bighead and silver carp were stocked in culture ponds (Jennings 1988, Louisiana Department of Wildlife and Fisheries 1989). Because bighead carp also eat uneaten catfish food, and possibly catfish feces (Huner 1988) there is less waste left in the pond to reduce oxygen. The stability of plankton and

the improvement in water quality decreases the amount of water flow needed to maintain healthy catfish, and thus reduces the cost of pumping and overhead.

Henderson (1976, 1979) reported increased yields in channel catfish ponds that were supplementally stocked with bighead and silver carcarp. Although yield and average size of channel catfish were lower in the ponds with Asian carp, the yield of bighead carp without adding supplemental feed more than compensated for the decrease.

Bighead and silver carp have also been used to reduce algal biomass and improve water quality in sewage treatment systems (Henderson 1983). If the fish could be marketed they would help defray the cost of sewage plant operation.

Palatability of bighead carp flesh was caparable to that of bigmouth buffalo (*Ictiobus cyprinellus*) or channel catfish (Henderson 1976). Therefore, the sale of bighead could increase profits from catfish rearing ponds without adding substantial overhead.

A 1988 market analysis showed the demand for bighead carp in the USA to be between 1 and 3 million pounds annually (Louisiana Department of Wildlife and Fisheries 1989). The market demand was primarily from oriental cultures in larger metropolitan communities. Wholesale dealers from Los Angeles, San Francisco, Chicago, New York, Arkansas, and Missouri stated that supply exceeded demand for bighead, and as a result prices had fallen

from $1.20-$1.30 per pound to $0.50-$0.70 per pound delivered. The report states that Jim Lambrich of Imperial, Missouri was unable to sell bighead carp for farmers that contract through him.

Silver carp had no market value as food fish due to taste, boniness, and oiliness; however, they may be used in the protein meal industry (Louisiana Department of Wildlife and Fisheries 1989).

Control

Bighead and silver carp are susceptible to most commercial piscicides. Henderson (1975) reported that 100% of silver carp and 83% of bighead carp were killed in a 24-hour exposure to 0.005 ppm rotenone (active ingredient). Marking and Bills (1981) reported the 96-hour LC50 for Noxfish was 0.0437 ppm for bighead carp, and 0.0558 ppm for silver carp. For Antimycin the 96-hour LC50 for bighead, and silver carp was 0.60 ppb, and 0.83 ppb, respectively.

Some states control exotic carp by restricting the imoundments where they may be cultured, and stocked (Louisiana Department of Fisheries and Wildlife 1989). Florida, for example, requires outdoor culture ponds to be at least 1 foot above the 100-year flood level with no outlets, and enclosed by a security fense with locked gates. Indoor tanks must have no discharge, or drain into a dry-bed waste pond. Many states such

as Arizona, and Nevada prohibit stocking Asian carp into waters without barriers to prevent their escape to natural waters, and Colorado prohibits their release where escape is likely.

Hybridization

Aquaculturists have attempted to hybridize Asian carp to make them more suitable for pond culture, and less likely to reproduce in the wild.

Sutton et al. (1981) describes hybridization between grass carp and bighead carp. The resultant hybrid is sterile and thus provides a fish to control unwanted vegetation without the worry of reproduction. Unfortunately the hybrid is not as efficient at controlling vegetative growth because the pharyngeal teeth are poorly developed (Berry and Low 1970), and it has been suggested it would take twice as many hybrids to obtain the same control as grass carp (Young et al. 1983).

Hybrids of bighead carp and silver carp have been produced to combine the docility, and fast growth of the bighead with the phytoplanktivorous feeding of silver carp (Green and Smitherman 1984). The hybrid had acceptable growth, and was more easily seined than silver carp.

Status in Other States

A recent survey of fish and wildlife agencies of the lower 48 states conducted by the Louisianna Department of Wildlife and

Fisheries showed unrestricted importation, and sale of bighead and silver carp are allowed only in Alabama, Indiana, and Texas (Louisiana Department of Wildlife and Fisheries 1989). Transportation, and sale of bighead carp are prohibited in 35 states, while 34 states prohibited transportation, and sale of silver carp. The remaining states impose restrictions on transportation, possession, sale, or stocking of bighead and silver carp, and/or require a permit to possess them.

The unresticted use of bighead and silver carp is not allowed in any states bordering Kansas. Colorado and Oklahoma prohibit the sale, and transportation of bighead and silver carp, although Oklahoma will issue a permit for research purposes only. Missouri and Nebraska both allow sale, and transportation; however, it is illegal to stock them into wild waters of Missouri, and a permit is required to possess and sell them in Nebraska.

Arkansas, where bighead and silver carp were first introduced into the USA, requires permits and registration of vendors. In addition, they cannot be stocked into any water where ingress to public waters is not entirely blocked.

Illinois allows the sale of dead fish only, whereas Massachusetts and Mississippi allow bighead and silver carp in closed waters where they cannot escape. Georgia does not allow bighead carp, but will issue permits for silver carp if certain conditions are met. New Jersey allows their importation and sale, but prohibits stocking within the state.

After reviewing the biology of bighead and silver carp, and their status throughout the USA, Louisianna decided to prohibit their possession and sale.

Summary and Discussion

Bighead and silver carp are native to Asia. They have been imported into the USA for use in aquaculture as food fish, and to control water quality in channel catfish ponds. Both fish are primary feeders with bighead carp feeding primarily on zooplankton and detritus, and silver carp feeding on phytoplankton. This position within the food web puts them into direct competition with native species of the USA that could cause a reduction of native species, or even elimination of those not capable of competing with these exotic carp. Unlike many native species that are primary feeders that serve as prey to sportfish and native predators, bighead and silver carp grow too quickly to be useful prey, and therefore compete for space as well as energy resources with native species. Competition is further enhanced by the ability of bighead and silver carp to thrive in widely fluctuating environmental conditions.

It has been claimed that bighead and silver carp could never reproduce naturally in North America because spawning conditions could not be met. This same argument was used for grass carp, yet grass carp have spawned naturally in the USA since 1975

(Conner et al. 1980), and their larvae have now been captured in the Mississippi, Missouri, and Ohio Rivers. In 1987, Missouri biologists sampled grass carp larvae in two tributaries of the Missouri River. Because spawning requirements for bighead and silver carp are similar to grass carp, it is unrealistic to think they will not spawn in North America if sufficient numbers escape into the wild. Spawning and natural recruitment will increase competition with native species because the young of each will inhabit similar areas, and eat similar foods.

Bighead carp and silver carp are raised with channel catfish without adding additional feed. Their presence helps maintain good water quality with less pumping of fresh water to eliminate wastes, and bighead carp can then be sold to increase the net profits of aquaculturists. However, the demand for bighead is limited and the market value fell from $1.20-$1.30 per pound to $0.50-$0.70 per pound in 1988 due to an over supply of fish. Native buffalo (*Ictiobus* spp.) occupy a similar niche to bighead carp and follows similar stocking regimes in catfish polyculture systems (Huner 1988). Although their market value is lower ($0.30-$0.50 per pound dressed and $0.70-$1.00 per pound live) they present less hazard to the environment and native fish species because they too are native to Kansas.

Unrestricted use of bighead and silver carp is allowed in only 3 states. Nine others allow their possession but, only in certain circumstances, or with a special permit. No state

bordering Kansas allows the unrestricted use of bighead or silver carp. Many states require fish rearing facilities, shipping equipment, and stocked waters to pass inspection before a permit is issued. Facilities not meeting safety standards to prohibit the live escape of exotic fish are denied a permit.

Fish species native to North America are encountering ever increasing threats to their survival. Loss of habitat and pollution through human industrialization and population expansion, increasing demands for sportfishing opportunities, and competition with exotic species have all taken their toll to reduce numbers of native species. It is our responsibility as fisheries managers to protect and enhance present fish populations. Allowing unregulated possession and sale of exotic species that are capable of increasing competition to our native species is not responsible management.

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22-26

INTRODUCTION

Current laws of the State of Louisiana prohibit the introduction, sale and possession of many species of exotic fish without first obtaining written permission from the Secretary of the Department of Wildlife and Fisheries (R.S. 56:319). In a policy statement originally adopted in 1971, the Wildlife and Fisheries Commission specifically prohibited the introduction of grass carp except for scientific research only. All other species of carp (except common carp and goldfish), are prohibited in R.S. 56:319.

During the 1988 Regular Session of the Louisiana Legislature, several bills were introduced that resolved to authorize the introduction and utilization of triploid grass carp and bighead carp in catfish farming operations. Considerable discussion on this controversial issue ensued in committee hearings during the course of the legislative session. All of the bills were deferred with the understanding that a thorough study would be conducted relative to these fish.

The Louisiana Department of Wildlife and Fisheries was authorized and directed by the Legislature in House Concurrent Resolution No. 188 to "...conduct a thorough evenhanded study of the feasibility of legalizing carp in Louisiana..." and "...to present an unbiased report, based on the best available scientific information to the legislature...". An Executive Summary Report was submitted in compliance with mandates set forth in House Concurrent Resolution No. 188. The detailed report of the functions of the Carp Task Force is contained herein. This report will be provided to the committees of each House assigned to hear bills or resolutions proposed for action of the Legislature during the 1989 Regular Session.

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EXECUTIVE SUMMARY

The Carp Task Force was established as a result of the legislative directives set forth in House Concurrent Resolution No. 188 of the 1988 Regular Session of the Louisiana Legislature. The resolution authorized and directed the Department of Wildlife and Fisheries to study the feasibility of legalizing carp in Louisiana. The Department was directed "...to present an unbiased report, based on the best available scientific information, to the legislature...". The House Concurrent Resolution designated other participants to the study group would include representatives from Louisiana State University, the Louisiana Farm Bureau Federation, the Louisiana Wildlife Federation, the Louisiana Catfish Grower's Association, one or more associations of commercial fishermen and one or more association of sport fishermen. Task Force members and technical advisors to the committee are identified on page 5 of this report.

The Carp Task Force was formally organized in August, 1988. The Task Force and its study groups have met regularly since September, 1988. Goals and objectives were established as enumerated on page 6 and study groups were organized to review the appropriate scientific information available and to produce comprehensive reports for each objective. The meetings were conducted in accordance with laws governing open meetings in Louisiana and comments from the public were solicited at each meeting.

The Task Force selected the diploid and triploid grass carp, Ctenopharyngodon idella, the bighead carp, Hypophthalmichthys nobilis, and the silver carp, Hypophthalmichthys molitrix, as the species to be included in the study report. China is the primary native range for these three species and they are commonly referred to as Chinese carp.

Grass carp were originally introduced into the United States for use as a biological method of controlling aquatic weeds. Extensive studies have shown that grass carp, when properly stocked, can effectively and economically control certain nuisance aquatic plants. The diploid grass carp, which is the unaltered genotype of the species, has become established in the Lower Mississippi River valley. The triploid grass carp, which is considered to be functionally sterile, must be produced through artificial methods. Both genotypes have similar habits for consuming aquatic macrophytes.

The bighead carp has been introduced into 32 countries. They were originally imported into the United States for water quality improvement purposes. They are now raised primarily in polycultural practices, including catfish farming operations. Studies have shown they can provide additional fish flesh in catfish ponds with little extra cost. This carp feeds primarily upon zooplankton but may consume phytoplankton or detritus when zooplankton is scarce.

The silver carp was brought into the United States for enhancement of water quality in ponds. Studies have shown that silver carp may reduce the biological oxygen demand problems and that they may feed on undesirable phytoplankton such as blue-green algae.

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Studies of the distribution of the Chinese carp within Louisiana indicate grass carp have been reproducing in the lower Mississippi River since 1975 and have become widespread in the Mississippi and Atchafalaya River drainage systems. Reproduction of silver carp and bighead carp has not been noted in the United States, although the spawning requirements for these species are similar to the grass carp. Silver carp populations occur in the Boeuf/Ouachita River systems. Not enough information exists to confirm the occurrence of bighead carp in natural waters of Louisiana. None of the designated study species were reported from drainage systems in the west central and southwestern portions of the state.

A market analysis for the Chinese carp was not available. Efforts to determine the market for these fish indicated there are only a few wholesalers nationwide who deal with Chinese carp. Based upon interviews with several of these wholesalers, the following observations are made:

1) The primary consumers of these fish are first generation Chinese immigrants.

2) The size of the market is less than 5 million pounds.

3) Supply presently exceeds demand.

4) The value range for live carp dropped from $1.20 - $1.30 per pound to $0.50 - $0.70 per pound during the 1988 calendar year.

Silver carp can be used in the organic fertilizer and protein meal industries. The market demand as a food fish is small because its flesh has too many bones, is excessively oily, and it has a strong taste.

Bighead carp can also be used in the organic fertilizer and protein meal industries. There is an unquantified food market for live fish and clear-eyed fresh fish in the United States and Canadian Asian markets.

The market demand for grass carp as a food fish appears to be stronger. The use of this fish can significantly reduce the cost of aquatic weed control if the cost of the grass carp is prorated over a six year period.

Triploid grass carp are allowed for importation and sale without permits or restrictions in Alabama, Arkansas, Kansas, Oklahoma and Tennessee. Twenty-four other states allow importation and sale of these fish, but permits and/or restrictions are enforced. Triploid grass carp cannot be transported and sold in fourteen other states. Texas does not allow the importation of live fish. Utah, Washington and West Virginia allow triploid grass carp to be imported, but they cannot be sold.

Diploid grass carp are allowed for importation and sale without permits or restrictions in Alabama, Arkansas, Kansas, Oklahoma and Tennessee. Seven other states allow importation and sale of these fish, but permits and/or restrictions are enforced. Diploid grass carp cannot be transported and sold in thirty-one other states. Florida and Kentucky allow diploid grass carp to be imported only for the purpose of producing triploid grass carp. Texas does not allow the

importation of these fish. Washington allows diploid grass carp to be imported for scientific research, but they cannot be sold.

Bighead carp are allowed for importation and sale without permits or restrictions in Alabama, Indiana and Texas. Nine other states allow importation and sale of these fish, but permits and/or restrictions are enforced. Bighead carp cannot be transported and sold in thirty-four other states. Delaware has no position on these fish.

Silver carp are allowed for importation and sale without permits or restrictions in Alabama, Indiana or Texas. Ten other states allow importation and sale of these fish, but permits and/or restrictions are enforced. Silver carp cannot be transported and sold in thirty-three other states. Delaware has no position on these fish.

Chinese carp reproduce in large, swift river systems, usually at the confluence of a tributary. They generally require over-bank flooding and backwater sites as nursery areas for young fish. They do not spawn in still waters, such as ponds and lakes.

The bighead and silver carp can be in direct competition with other planktivorous fishes throughout their lives. This competition extends to the larval stages of non-planktivorous fishes. Grass carp larvae compete with native fish species for zooplankton. Adults may prey upon animals such as crawfish, if vegetation becomes scarce.

Grass carp can exert positive impacts upon a water body by controlling an overabundance of aquatic vegetation. Conversely, high populations of grass carp can create an ecological imbalance to the aquatic ecosystem by excessive utilization of aquatic plants. Alteration of existing habitats may result in a decline in those species with more specialized habitat requirements.

The environmental impact of the triploid grass carp should be comparable to that of the diploid grass carp as habitat and food requirements of the two are similar. The establishment of natural reproducing populations of triploid grass carp is remote. Therefore, negative impacts on the environment as a result of overpopulation of triploid grass carp would appear to be unlikely, except where large numbers are allowed to migrate out of stocked areas.

Based on the evaluation of information presented on each of the objectives outlined for study, the Carp Task Force submits the following recommendations for review and consideration of the Louisiana Legislature.

(1) No modifications be made in present law as it relates to silver carp in Louisiana.

(2) No modifications be made to present law as it relates to diploid grass carp in Louisiana.

(3) The Department of Wildlife and Fisheries be directed by the Legislature to develop a regulatory program to permit the use of triploid grass carp in commercial catfish farming operations.

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(4) No modifications be made in the present law as it relates to the bighead carp in Louisiana.

(5) Rules and regulations developed by the Task Force be adopted by the Louisiana Wildlife and Fisheries Commission and ratified by the Louisiana Legislature in accordance with the Administrative Procedures Act.

(6) The introduction of triploid grass carp into commercial catfish farming operations be part of a three year pilot program.

(7) Amend R.S. 56:319 to increase penalties for violations to this section.

(8) Amend R.S. 56:319 to authorize the Department of Wildlife and Fisheries to assess fees to administer and monitor program permitting the use of triploid grass carp.

(9) Special appropriation be made to fund the pilot program and that no Conservation Funds or present operating funds budgeted to the Department of Wildlife and Fisheries be utilized to fund the program.

(10) Department of Wildlife and Fisheries investigate the feasibility of establishing a fish hatchery for the purpose of producing triploid grass carp.

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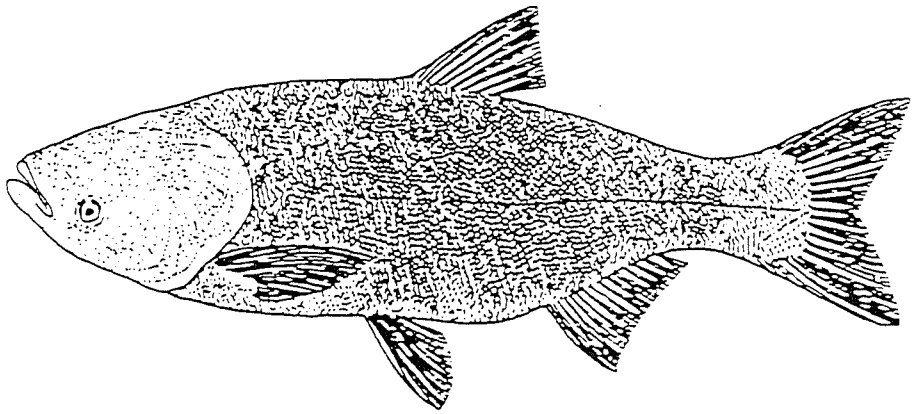
BIGHEAD CARP



Nomenclature

Scientific name: Hypophthalmichthys (Aristichthys) nobilis
Common name: Bighead carp, bighead, yung-ue

Taxonomy

Class: Osteichthyes
Order: Cypriniformes
Family: Cyprinidae

Species Description

External Morphology: The body is relatively deep and moderately compressed laterally, with a head length equal to 0.36 of standard length (SL), and small cycloid scales numbering 98-100 along the lateral line. The terminal mouth is positioned dorsally with the lower jaw extending past the upper. The eyes are located anteriorly on the head and have a definite ventral positioning. A smooth keel extends from the base of the caudal fin to the pelvic fins.

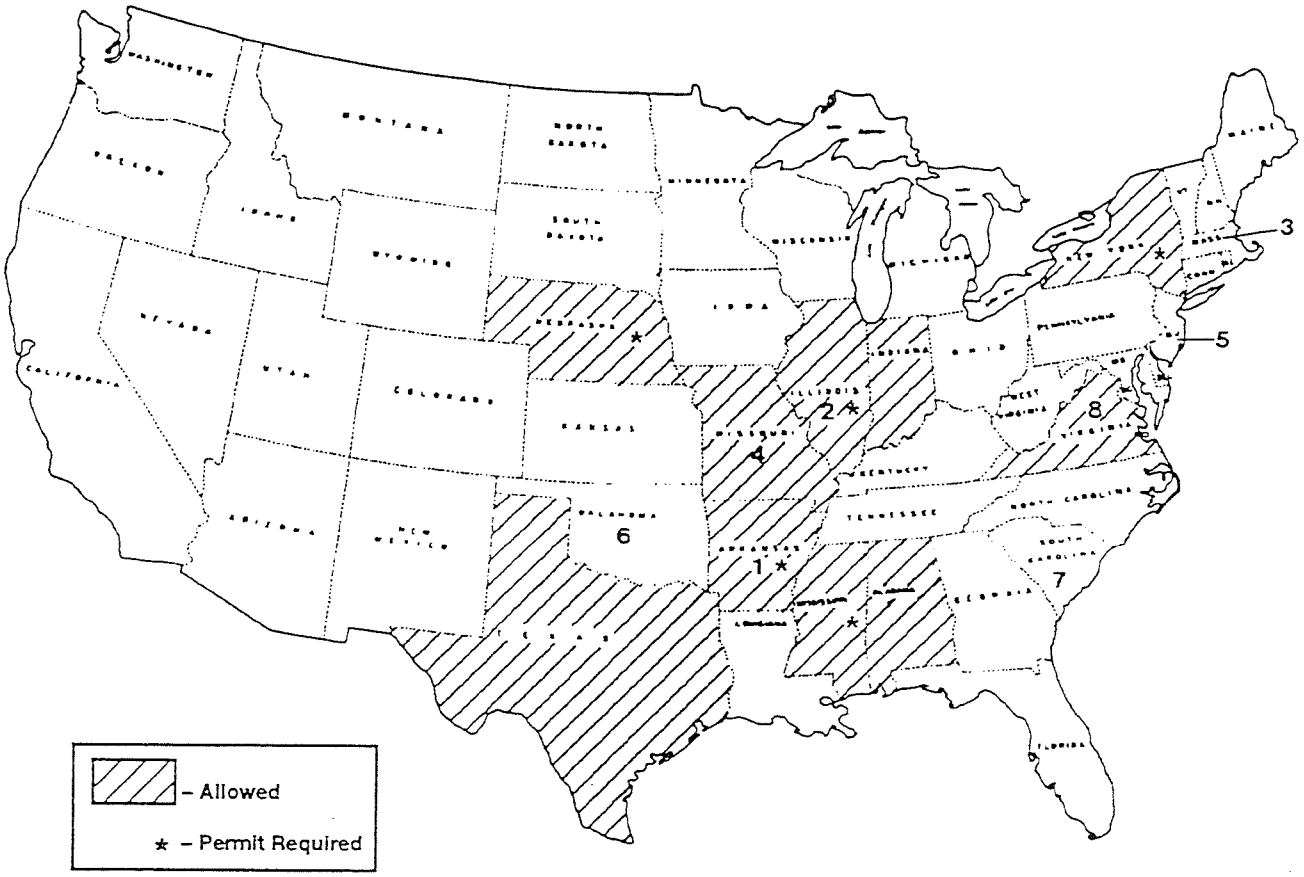
Color: Dark gray above, off-white below with dark gray to black irregularly shaped and positioned splotches over the entire body.

Size: Maximum size reported in the Soviet Union is about 90 pounds. In the United States this fish may reach 40 to 50 pounds in 4 to 5 years.

Sexual Dimorphism: Prior to sexual maturity, the male develops a sharp edge along the dorsal surface of several anterior pectoral fin rays, a characteristic absent in females. This condition persists throughout the male's lifetime.

22-32

Bighead Carp
Status



1 **Arkansas** - cannot place into any body of water where ingress into public waters is not entirely blocked.
2 **Illinois** - importation by aquaculturists is allowed. Their sale is allowed also, but not by aquaculturists. They are sold dead as food by commercial fishermen.
3 **Massachusetts** - permits issued where fish are used in closed cycle aquaculture ventures.
4 **Missouri** - it is illegal to liberate into natural waters.
5 **New Jersey** - no law against importation and sale, but there is law against stocking.
6 **Oklahoma** - may be permitted for research only.
7 **South Carolina** - may be permitted for research only.
8 **Virginia** - anticipate requiring permit.

Figure 7

22-33

Phone conversation with Bill Pflieger - Missouri Department of Conservation, March 16, 1990

In a phone conversation with Dr. William Pflieger of the Missouri Department of Conservation on March 16, 1990, I learned that a major commercial fish culture operation on the lower Osage River in Missouri lost 25 tons of bighead carp into flood waters during 1986.

In 1989, MDC fisheries biologist Pflieger reported that he found fingerlings of that year in the Missouri River segments adjoining Chairton and Boone counties. These July and August fingerlings were found in association with habitats at the mouth of tributary streams. In September of 1989, Pflieger indicated that he had collected fry bighead carp at some of these same tributary sites.

Robert F. Hartmann, Supervisor
Investigation and Inventory Section
Fish and Wildlife Division
Kansas Department of Wildlife and Parks

22-34

KCFGA/Bighead

Communication Sequence

1. 1987 and earlier correspondence with Jeff Racy, President, Re: regulation limitations and research needs - Hartmann.

2. 31 January 88, KCFGA Annual Meeting, McPherson - Meinen.

3. 8 June 88, KCFGA Board of Directors (Bruch, President) - Theurer and Meinen, Emporia Office.

4. November/December 1988, inquiry discussion with Dr. Klaassen about permit guidelines.

5. January 1989, Annual meeting, McPherson - Verl Stevens.

6. February 14, 1989, Correspondence from Dr. Klaassen informing of guideline rejection by the Board.

7. 9 May 89, Kansas Board of Agriculture, Marketing Division, meeting, Topeka - Kramer and Hartmann.

8. May 89, KCFGA Board Meeting with Kramer and Hartmann, Emporia Office.

9. 15 November 89, Kansas Board of Agriculture, Marketing Division, Meeting, Topeka - Hartmann.

10. 27 January 90, KCFGA Annual Meeting - Kramer.

11. February 1, 1990, Letter from Meinen to Hajek, President, Commercial Fish Growers.

12. 6 March 90, KCFGA Board of Directors and Hartmann, Emporia.

13. 9 March 90, Letter to Hajek, President, Commercial Fish Gorwers, from Kramer, confirming permit development process.

RH:RLM:wp
03-27-90

22 - 35

KSU
KANSAS STATE UNIVERSITY

Division of Biology

Ackert Hall
Manhattan, Kansas 66506
913-532-6615

February 14, 1989

Mr. Robert L. Meinen, Secretary
Kansas Department of Wildlife
and Parks
900 Jackson Street, Suite 502
Topeka, KS 66612-1220

Dear Bob:

I guess I owe you an explanation on the bighead carp issue. I had roughed out a set of guidelines for possession of bighead carp based on inspection and permits. I was hoping that this would be the basis of discussion for developing a policy and possible research projects. The Commercial Fish Growers Board of Directors out-voted me and decided to go with the bill introduction instead.

After the legislative session is over I will again attempt to work out a reasonable policy that will be mutually acceptable.

Sincerely yours,

Harold

Harold E. Klaassen
Member, Board of Directors, KCFGA
and Associate Professor of
Fisheries Biology

HEK:dc

22-34

OFFICE OF THE SECRETARY
900 Jackson St., Suite 502
Topeka, Kansas 66612-1220
913-296-2281

February 1, 1990

Mr. Mark L. Hajek, President
Kansas Commercial Fish Growers Association
Route 1, Box 216
Marion, Kansas 66861

Dear Mr. Hajek:

This letter is in response to your recent inquiry concerning the use of big head carp by commercial fish growers. Kansas law (K.S.A. 32-956) directs the Secretary to establish a list of wildlife species that are prohibited from the lands and waters of this state. That list is created by regulation (K.A.R. 23-16-1) and the big head carp is included. Both the statute and the regulation provide for any listed species to be used in Kansas for experimental, scientific or display purposes. The regulation provides for a special permit to accommodate those uses. Special permits can be conditioned to include whatever safeguards are required to insure the prohibited species are properly controlled or confined.

I believe our position on big head carp is clear and sufficient information exists to substantiate our concern. We do not favor removing the big head carp from the prohibited list. However, we are most willing to develop a procedure whereby big head carp would be used by commercial fish growers within proper conditions under a special permit. Those conditions must include methods that prohibit any entry into other waters.

If you and your organization are sincerely willing to work with us, I am confident that agreement on adequate and suitable safeguards can be reached. I would caution that it may not be possible for every commercial fish grower to meet whatever minimum conditions may be developed. We are aware of and interested in the commercial fish grower's desires from a business standpoint, but the commercial fish growers must also recognize this Department's legal mandate to properly manage our state's wildlife resources.

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By copy of this letter, I am requesting Dr. Alan Wentz, Assistant Secretary for Operations, to assign staff to this subject. They should be contacting you in the near future.

Sincerely,

Robert L. Meinen, Secretary
Kansas Dept. of Wildlife & Parks

RLM:jr

xc: Dr. W. Alan Wentz

22-38

ESTIMATED BIGHEAD CARP ANNUAL WHOLESALE VALUE TO KANSAS FISH GROWERS

A 1989 Fish Producers Directory names 40 fish growing operators, 35 of which had channel catfish grow-out and fee fishing operations.

A 1984 Survey of Kansas Fish Growers indicated that 13 fish farmers operated an average of 27 surface acres of channel carfish producing impoundments. However, due to a low survey response rate, this estimate appears high. In a similar 1982 Survey of Kansas Fish Growers 37 of 44 fish farmers responded to a questionnaire indicating they had 305 acres of impoundments in channel catfish grow-out operations, 8.2 acres per farm. Similarly used waters in 1989 are estimated to be close to 450 surface acres.

If,

each acre yields 150 bighead carp per year,
at 5 pounds average annual growth

and

the current (March '90) wholesale value "in-the-round" is $.20 per pound, delivered to the Chicago market

Then,

450 acres x 150 bighead carp x 5 pounds x $.20 = $67,500

or

$1,930 per average Kansas channel catfish grow-out producer.

ARKANSAS UNIVERSITY EXTENSION SERVICE
AQUACULTURE AGENT

Arkansas channel catfish growers have used 100 to 200 bighead carp per surface acre in conjunction with channel catfish grow-out operations. Southern Arkansas supports an 8 to 9 month growing season; ponds there will yield 1000 to 2000 pounds of bighead carp in addition to channel catfish. However, total channel catfish yield is reduced compared to feeding operations that use channel catfish only.

Associated water quality:

- under extremely fertile water conditions bighead will consume feed waste and zooplankton
- phytoplankton populations explode
- silver carp are occasionally added to reduce the plankton blooms - phytoplankton shifts to smaller single celled kinds and bluegreen (potentially toxic) species appear.

Currently the bottom has dropped out of the bighead market. Wholesale "in-the-round" fish are bringing $.20/pound, FOB at the Chicago market.

TESTIMONY IN OPPOSITION TO S.B. 158

PRESENTED TO: SENATE ENERGY AND NATURAL RESOURCES COMMITTEE
SENATOR ROSS DOYEN, CHAIRMAN
FEBRUARY 14, 1989

Chairman Doyen and committee members, I am Joe Kramer, Chief of the Fisheries and Wildlife Division for the Kansas Department of Wildlife and Parks.

I am here to speak for the Agency in opposition to S.B. 158; specifically, to the proposed addition to paragraph 1 of K.S.A. 32-164a that would remove the current prohibition of Bighead Carp introductions into Kansas waters.

The 1976 legislature provided the State's wildlife resource agency the obligation and authority to restrict and regulate importation, introduction, and potential establishment of biologically and ecologically disastrous foreign exotic wildlife. The Bighead Carp, Aristichthys nobilis, and the Silver Carp, Hypophthalmichthys molitrix, along with the walking catfish, were the only fish species considered, at that time, to pose an immediate threat to Kansas' aquatic ecosystems and fisheries. That threat is even more prevalent today!

Both of these exotic Asian Carp are known to more effectively compete for food, principally plankton, at the bottom of the food chain than most of our native fishes. They are also more adept at competing for space. Direct reductions in production, recruitment, and growth of our most important sport fishes can be expected to result from successful establishment of these carp in our waters; lest we forget the common (European) carp and its aftermath! The potential ecological hazards resulting from the introduction of either of these two carp is well recognized among the nation's fisheries resource managers and ichthyological academicians.

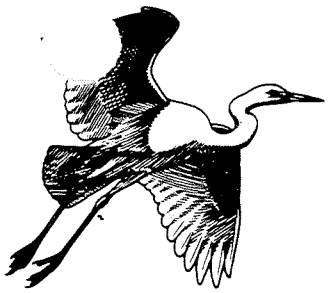
Kansas rivers, reservoirs, lakes, and ponds currently support an annual recreational fishery valued at $248.3 million and involve over 554,000 sports anglers who spend more than 10.2 million

recreational days fishing. Support services and industries, including bait and tackle, recreational and marine equipment, recreational vehicle and lodging, as well as the restaurant trade and fuel supplies, are impacted. Both of these exotic Asian Carp are capable of severely degrading all of these important Kansas economies.

The proposed change contained in S.B. 158 is specifically designed to promote the short term gain of Kansas Commercial Fish Producers at the potentially long-term loss of much of Kansas' established recreational sportfisheries economy. The proposed change implies that ALL waters in the state will be open to introduction of this species. No consideration is given to limiting the fish to controlled or regulated culture installations. No assurance is given that escapes will be controlled, or that each installation will assume responsibility for subsequent damage to either private or public trust fisheries resources.

Further, no mention has been made of the use of alternate native fish species. Our recent experience indicates that several native fish groups are capable of effectively using the same frequently unutilized food stores and offer similar growth, production, and market value potential. This potential specifically includes the coastal outlets of oriental fresh fish consumers.

Kansas natural resources do not need another disaster to further impair and degrade already stressed ecosystems and economies, neither for the short term, nor over the extended future. The quality of angling in Kansas is contained in this bill. Passage of the bill will severely limit that future.



Kansas Audubon Council

SB 158
March 27, 1990
House Energy and Natural Resources Committee

I am here to testify on behalf of the 5000 Kansas members of the National Audubon Society who support the wise use and protection of our natural resources.

The Kansas Audubon Council is concerned about the potential upset to natural ecosystems if bighead carp were released into the streams and rivers of the state. We believe examining releases of other exotic (non-native) species can provide documentation of well-intentioned actions which resulted in dire consequences to native species. Two examples are:

1) European Starlings were deliberately introduced as part of an effort to establish in the U.S. every species of bird mentioned in the works of William Shakespeare (Henry IV). The original 60 Starlings that were introduced in 1890 in New York City's Central Park took only 60 years to push their way across the continent and increased their numbers to over 200,000,000 birds. Not only do Starlings devour grain put out for cattle in feedlots, damage crops, and foul buildings and walkways with their droppings, they also outcompete with native cavity-nesting species such as Eastern Bluebirds, Red-headed Woodpeckers, Northern Flickers and Great Crested Flycatchers.

2) One other bird species that was purposely introduced in the hope it would help control insect pests is the House Sparrow. It was introduced in Brooklyn in 1850 and spread rapidly, taking only 50 years to occupy suitable habitats over the entire U.S. Along with Starlings, the fiercely aggressive House Sparrows appropriate other birds' nests and often destroy Eastern Bluebird eggs and nestlings. This fierce competitiveness of Starlings and House Sparrows for nesting sites, along with felling dead trees and removing dead branches, lead to the near extirpation of the native Eastern Bluebird population. There was an approximate 90% decline in the population of Eastern Bluebirds during this century. Recent efforts to establish Bluebird nest-box trails have helped stabilize their population, but again these must be frequently monitored to keep out Starling and House Sparrow invaders.

These are but two examples of profound adverse effects on native species that can result from the introduction of non-native species. For that reason, we urge the committee to vote against SB 158.

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3-27-90

ATTACHMENT 23

Statement Opposing Senate Bill No. 158,
Authorizing Introductions of Bighead Carp in Kansas

It is not easy for me to testify against this legislation because I've had a long association with fish growers in the State, many of whom are old friends. I helped in the effort to get their organization started, served as one of its Directors for many years, and advised people going into the business throughout its developmental stages. I have with me some of the research reports and manuals we produced and distributed then, if you want to see them. But I ask you to reject this bill, because I think introducing Bighead Carp is the wrong thing to do, and because I doubt that this is the right way to decide questions of this sort. How well informed are we about this fish? Are we sure we want it throughout the waters of the State? Do you as legislators want to deal with such issues so specifically as they come up — that is, one species at a time? This is not going to be the last problem of its kind.

What will happen if this bill passes? Probably, the same thing that happened when Grass Carp introductions were legitimized in 1978. One example: During the next two or three years, one distributor, operating with a pickup truck out of an apartment in Lawrence, stocked 1,300 farm ponds in northeast Kansas with 18,000 Grass Carp that were produced in Arkansas. How does that kind of operation benefit Kansas growers who have invested in facilities for raising the fish? What were the effects of those Grass Carp introductions? Now, many pond owners are disillusioned about the merits of Grass Carp. Some excellent fish ponds have been almost ruined in appearance and angling yield. Getting rid of Grass Carp is very difficult, short of poisoning the entire fish population or draining the pond. Otherwise, you wait for them to die. Grass Carp can live for more that 20 years. So can Bighead Carp.

A more important, permanent effect of unrestricted releases like the ones just cited was escape of Grass Carp from ponds and lakes and their establishment in the wild, where the species now reproduces naturally in the Atchafalaya, Mississippi, Ohio, Missouri, and other rivers — maybe in the Neosho River also, since young-of-year Grass Carp were found alongshore in Redmond Reservoir in the summer of 1989. Grass Carp are here to stay, and their total impact will not be apparent for decades, just as in the case of the Common Carp, established a century ago.

The Bighead Carp is not an isolated issue. Introductions of exotic fishes will be proposed again and again. Requests to use various cichlids (*Tilapia* species and Nile Perch), Silver Carp, Mud Carp, and bait minnows such as the Rudd can be foreseen. But others cannot be anticipated. A man came to my office last Friday to discuss with me his plans to grow Salmon, Shrimp, and Abalone commercially, near Baldwin. Seriously, he expects to do this. He might conceivably be successful. And under the conditions he described, I am much more favorably inclined toward that operation than I am toward Bighead carp. Its results are not likely to be detrimental.

Bighead Carp, Grass Carp, and Common Carp all get very big (50 pounds plus) and live many, many years. Their food preferences are open-water microorganisms, vegetation plus whatever is living on the vegetation, and bottom dwelling organisms plus detritus, respectively. Establishing all three species together is sort of like standing a 600-pound gorilla in every doorway to the grocery store for all kinds kinds of native fish —

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ATTACHMENT 24

game or non-game. There are other fishes that live with these Carps in Asia, of course; but those species are adapted to compete with them; our fishes are not.

How important is it that Kansas growers *have* Bighead Carp in order that they can continue to compete with growers elsewhere? Of course it would help them, in both an economic and managerial way, in the *short* term. But in the *long* term it is not critically important to them. They can sell it as human food, but that market seems limited and may already have been satisfied. They can sell it to stock lakes and ponds with algae problems, but that market will soon be saturated. (This would also ensure that the species escapes into open stream systems, establishing self-sustaining wild populations.) The growers can use it in polyculture with Channel Catfish for partial control of plankton blooms that cause undesirable fluctuations in carbon dioxide, dissolved oxygen, pH, and ammonia concentrations. But there are other effective and relatively inexpensive ways to control undesirable algal blooms. Copper sulfate is used routinely for this purpose in lakes that serve as public drinking water supplies. If we decide later that it is unsafe we can stop using it; Bighead Carp, once established, will be here forever. Native planktivorous fishes could be used.

The competitive disadvantage Kansas growers have with growers farther south lies in length of growing season, land and labor costs, and water availability — not who is permitted to use Bighead Carp. Actually, our one real advantage is that protracted algal blooms, oxygen deficiency, off-flavors and diseases of fishes are less of a problem here than in the South. Southern growers need Grass Carp, Bighead Carp, Silver Carp, and chemicals much more than Kansas growers need them. In the interests of aquaculture in Kansas, we should promote legislation to *restrict* these importations, not *facilitate* them, following belatedly in the wake of the Southern growers.

If this bill passes it will trade a little bit of economic gain, mainly short-term gain, for an awful lot of long-term loss. The stakes are not trivial. I urge you to set aside this authorization of Bighead Carp introductions. Something more fundamental, defining the place of commercial aquaculture in the State and the conditions under which it may operate, may need to enacted. If so, the Bighead Carp matter should await that more comprehensive legislation.

Thank you for hearing me.

Frank B. Cross
Division of Fishes
Museum of Natural History
University of Kansas
Lawrence
27 March 1990

24-2

Kansas Wildlife Federation, Inc.
200 S.W. 30th, Suite 101 • P.O. Box 5715 • Topeka, KS 66605

TESTIMONY SB158
HOUSE ENERGY AND NATURAL RESOURVES COMMITTEE
BY Jerry R. Hazlett
March 27, 1990

The Kansas Wildlife Federation is a not-for-profit natural resource and education organization. Our 8000 members join with the 10,000 Kansas members of our affiliate organization, the National Wildlife Federation, to support the wise use, sound management and public enjoyment of our vital air, soil, water and wildlife resources.

Thank you for this opportunity to testify in opposition to SB158.

Bighead carp is an exotic species that should not be introduced into Kansas waters. Like most exotics, existing research on the bighead carp shows such an introduction to be a gamble, with the odds in favor of direct and negative impacts to other life forms, habitats and the economy. This research indicates that adding the bighead carp to the already existing and flourishing common carp and grass carp presents a threat to the existing Kansas recreational fisheries. This fisheries is enjoyed each year by nearly 300,000 Kansas anglers and has an annual value of $248 million.

Let's look at a comparable example of an exotic introduction. All of us know of the devastation that musk thistle, an exotic species, can have on agriculture lands and the expense involved in trying to control its spread. Suppose someone decided he/she wanted to cultivate musk thistle seed for bird feed. You have been assured by that person that the musk thistle can be controlled and limited only to the land upon which it's grown. Obiviously in hindsight, all of us today would not, and could not, accept that argument.

The Federation asks this Committee to consider those lessons of past exotic introductions such as the common carp, Johnson grass, starlings, house sparrows, dandelions and Norway rat. We urge you not to gamble with our state's recreational fisheries, by accepting the argument of a few who say the bighead carp will do no harm. KWF asks that this Committee <u>not pass</u> SB158.

H ENERGY AND NR
3-27-90

ATTACHMENT 25

I enjoy fishing public waters in Kansas and consider myself an avid outdoorsman. As a lifelong Kansan I have seen the quality of outdoor recreation in our state improve over the years. It is my belief that allowing the unregulated entry of Bighead Carp into Kansas is a major threat to this quality.

I base this on the following four points:

1. The Bighead Carp is not native to Kansas. If it is allowed to spread into our natural waters it will surely cause significant changes in our native fish populations.

2. The Bighead Carp is a plankton feeder it's entire life and because of this it will compete with young sportfish for available food.

3. Fishermen will receive no benefits by Bighead Carp occuring in Kansas waters. Conventional fishing methods will not work for this species.

4. Immediate impacts will hardly be noticed however in five or ten years the damage could be irreversible.

I realize that there may be some commercial value to allowing this species into Kansas, although those states that allow Bighead Carp production almost universally regulate stringently it's rearing facilities, containment and transportation. The danger of unwanted proliferation is obvious. I urge you to consider this bill carefully. What may benefit a few may cause significant negative impacts for many.

H ENERGY AND NR
3-27-90

ATTACHMENT 26

SIERRA CLUB

Kansas Chapter

Testimony to House Energy and Natural Resources Committee
on SB 158

My name is Scott Andrews, I represent the 2500 members of the Kansas Chapter of the Sierra Club.

This bill, SB 158, would allow the unrestricted introduction of bighead carp into the waters of Kansas. You have already heard testimony of the possible impacts on native and sport fish and aquatic ecosystems in the state that this exotic species could have if it were established here. I would like to step back and put this in a broader perspective. There is great concern about the world-wide loss of biological diversity, the extinction of species and reduction of their ranges. The greatest cause of this loss is habitat destruction ranging from the clearing of rainforest to the draining of wetlands. The second leading cause is the introduction of exotic species and the resulting competition with native species.

I am not saying that we know bighead carp would lead to extinction of some indigenous fish, but the evidence certainly supports concern. We know bighead are useful additions to some aquaculture systems and could allow reductions in use of some chemicals. They need however to be managed responsibly. Wildlife and Parks has offered to work with the Fish Growers Association to develop guidelines for the use of bighead in closed systems from which escape to public waters can be prevented. This offer has been refused.

Given the possible damaging effects of this introduction, it is only reasonable to allow responsible management by Wildlife and Parks. The Sierra Club urges the members of this committee to amend SB 158 to allow Wildlife and Parks to develop and enforce guidelines to prevent escapes of bighead to public waters or to vote no on this bill.

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ATTACHMENT 27

Testimony
of
Randy Schademann, President-elect
Kansas Chapter of the American Fisheries Society
Before the House Energy and Natural Resources Committee
March 27, 1990

Ladies and Gentlemen of the Committee. The members of the Kansas Chapter of the American Fisheries Society appreciate the opportunity to appear before you in regard to SB 158. I am Randy Schademman, president-elect of the Kansas Chapter. I, along with two partners, operate a small pond management business.

Our chapter comprises 75 professionals, and represents the academic, commercial, state and federal sectors. We share a common interest in the judicious use of our fisheries and other aquatic resources of the State of Kansas.

The chapter's concern regarding SB 158, which would authorize the unrestricted introduction of the bighead carp into Kansas, is voiced because of the potential problems that can develop from introduction of any non-native organism into an existing ecosystem.

History is replete with the problems caused by casual introduction of exotics into new environments. Although each of these releases was well intentioned, many have commonly resulted in a variety of unforeseen problems. Likewise, with past releases, we also have been assured that the species in question will not reproduce in the natural environment, and would not cause significant problems, even if it were to achieve general distribution.

Introduction of such non-native species as common carp, house sparrows, starlings and the common rock dove (pigeon) have caused major impacts on existing species, as well as financial impacts for wildlife management programs and ordinary citizens.

The Kansas Chapter of the American Fisheries Society believes it would be imprudent to allow introduction of the bighead carp without adequate biological study. Furthermore, we would urge the Legislature to take this opportunity to pass legislation that would call for adequate biological assessment before future releases of exotic wildlife are authorized. Recognizing, that passage of such legislation within the limited time available would be considered an extreme step, at the very least we would urge the Legislature to instruct the Kansas Department of Wildlife and Parks to develop guidelines that would govern future release of exotic fish or wildlife into the natural environment of Kansas.

Thank you very much.

H Energy and NR
3-27-90

Attachment 28