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ESTABLISHMENT OF STATE AND REGIONAL ENVIRONMENTAL CENTERS

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HEARING

COMMITTEE ON

INTERIOR AND INSULAR AFFAIRS

UNITED STATES SENATE

NINETY-THIRD CONGRESS

FIRST SESSION

ON

S. 1865

A BILL TO AMEND THE NATIONAL ENVIRONMENTAL POLICY
ACT OF 1969 IN ORDER TO ENCOURAGE THE ESTABLISH-
MENT OF, AND TO ASSIST, STATE AND REGIONAL ENVIRON-
MENTAL CENTERS

JULY 30, 1973



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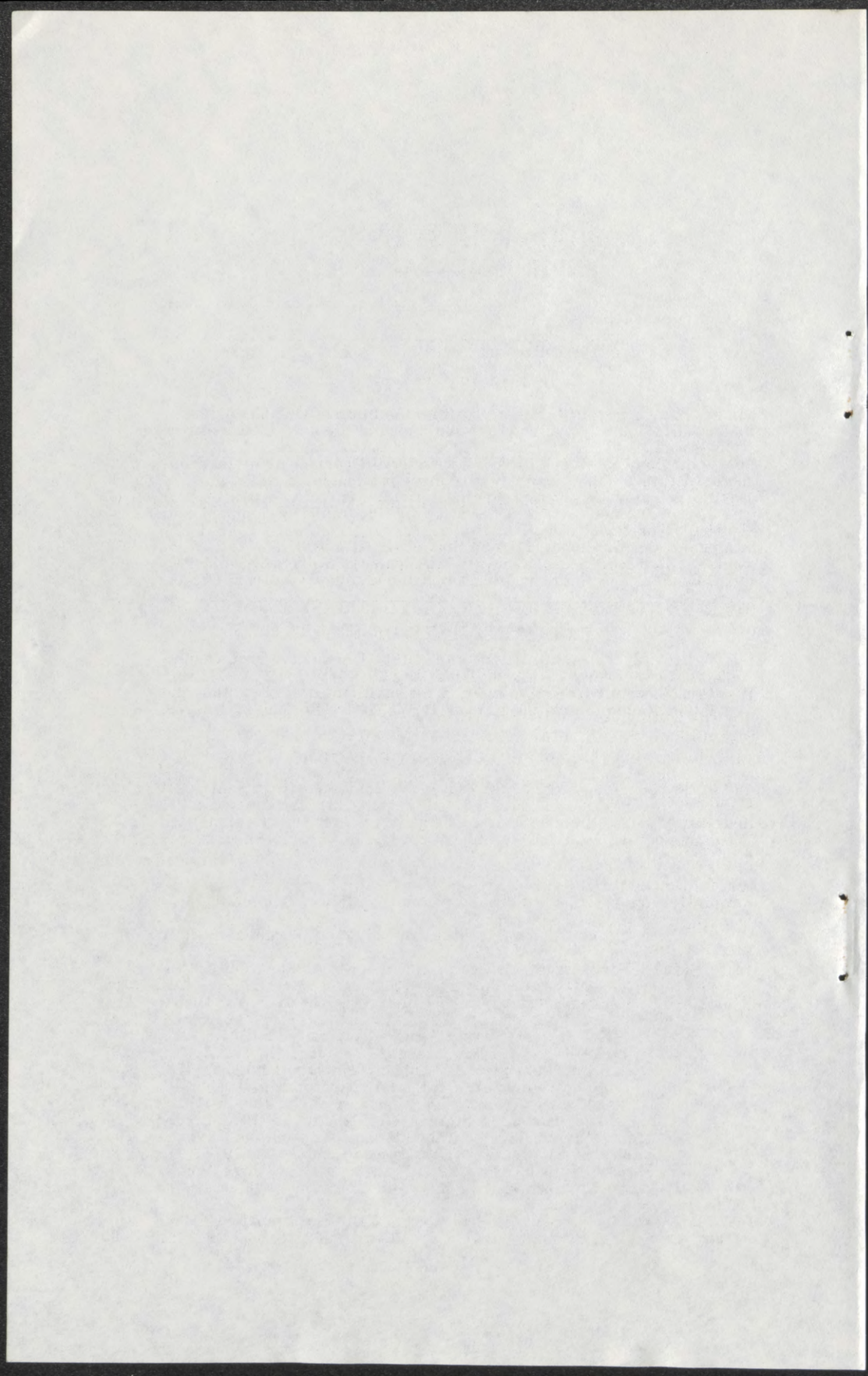
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ESTABLISHMENT OF STATE AND REGIONAL ENVIRONMENTAL CENTERS

MONDAY, JULY 30, 1973

U.S. SENATE,
COMMITTEE ON INTERIOR AND INSULAR AFFAIRS,
Washington, D.C.

The committee met, pursuant to notice, at 10 a.m., in room 3110, Dirksen Office Building, Hon. Floyd K. Haskell, presiding.

Present: Senators Haskell [presiding], Fannin, Hansen, McClure, and Bartlett.

Also present: Jerry T. Verkler, staff director; Steven P. Quarles, professional staff member; and Harrison Loesch, minority counsel.

OPENING STATEMENT OF HON. FLOYD K. HASKELL, A U.S. SENATOR FROM THE STATE OF COLORADO

Senator HASKELL. The hearing of the Committee on Interior and Insular Affairs on S. 1865, an act to amend the National Environmental Policy Act of 1969 to encourage the establishment of State and regional environmental centers, will commence. However, I am not sure how many members of the committee will appear. I do not wish to delay the chief sponsor of the bill, the distinguished Senator from Oklahoma, Mr. Bellmon, who is our first witness. Therefore, the hearing will commence.

Senator, I should say that I just received in the mail today and I have just glanced at it, what appears to be an extremely laudatory letter from the president of Colorado State University in support of your bill.

I place in the record at this point the text of S. 1865, executive communications, and the letter from Mr. Chamberlain, president of Colorado State University.

[The text of S. 1865, together with department reports and letter referred to above follow:]

S. 1865

MAY 22, 1973

Mr. BELLMON (for himself, Mr. BARTLETT, Mr. CANNON, Mr. DOLE, Mr. GURNEY, Mr. HASKELL, Mr. JACKSON, Mr. MCGEE, Mr. MANSFIELD, Mr. METCALF, and Mr. MOSS) introduced the following bill; which was read twice and referred to the Committee on Interior and Insular Affairs

To amend the National Environmental Policy Act of 1969 in order to encourage the establishment of, and to assist, State and regional environmental centers.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,
That the National Environmental Policy Act of 1969 (42 U.S.C. 4321-4347) is amended by adding at the end thereof the following new title:

6 "TITLE III

7 "SHORT TITLE

8 “SEC. 301. This title may be cited as the ‘Environ-
9 mental Centers Act of 1973’.

1 "POLICY AND PURPOSES

2 "SEC. 302. (a) It is the policy of the Congress to sup-
3 port basic and applied research, planning, management, edu-
4 cation, and other activities necessary to maintain and improve
5 the quality of the environment through the establishment of
6 environmental centers, in cooperation with and among the
7 States, and thereby to achieve a more adequate program of
8 environmental protection and improvement within the States,
9 regions, and Nation pursuant to the policies and goals estab-
10 lished in titles I and II of this Act. It is hereby recognized
11 that research, planning, management, and education in en-
12 vironmental subjects are necessary to establish an environ-
13 mental balance in local, State, and regional areas to assure
14 the Nation of an adequate environment.

15 "(b) The purposes of this title are to stimulate, sponsor,
16 provide for, and supplement existing programs for the con-
17 duct of basic and applied research, investigations, and ex-
18 periments relating to the environment; to provide for con-
19 centrated study of environmental problems of particular im-
20 portance to the several States; to provide for the widest dis-
21 semination of environmental information; to assist in the
22 training of professionals in fields related to the protection and
23 improvement of the Nation's environment; to provide for
24 coordination thereof; and to authorize and direct the Admin-
25 istrator to cooperate with the several States for the purpose

1 of encouraging and assisting them in carrying out the com-
2 prehensive environmental programs described above having
3 due regard to the varying conditions and needs of the respec-
4 tive States.

5 "DEFINITIONS

6 "SEC. 303. As used in this title—

7 "(1) The term 'Administrator' means the Ad-
8 ministrator of the Environmental Protection Agency.

9 "(2) The term 'educational institution' means a
10 public or private institution of higher education, or a
11 consortium of public or private institutions of higher
12 education.

13 "(3) The term 'environmental center' means a
14 State environmental center or regional environmental
15 center established pursuant to this title.

16 "(4) The term 'other research facilities' means the
17 research facilities of (A) any educational institution in
18 which a State environmental center is not located and
19 which does not directly participate in a regional environ-
20 mental center, (B) public or private foundations and
21 other institutions, and (C) private industry.

22 "(5) The term 'regional environmental center'
23 means an organization which, on an interstate basis,
24 carries out research, training, information dissemination,
25 and other functions described in section 306 of this title

1 related to the protection and improvement of the
2 environment.

3 “(6) The term ‘State’ means any State, the
4 District of Columbia, the Commonwealth of Puerto
5 Rico, or any territory or possession of the United States.

6 “(7) The term ‘State environmental center’ means
7 an organization which, on a statewide basis, carries
8 out and coordinates research, training, information dis-
9 semination, and other functions described in section 306
10 of this Act related to the protection and improvement
11 of the environment.

12 “DESIGNATION AND APPROVAL OF ENVIRONMENTAL
13 CENTERS

14 “SEC. 304. (a) The Administrator may provide finan-
15 cial assistance under this title for the purpose of enabling any
16 State, if such State does not participate in a regional en-
17 vironmental center receiving funds under this title, to estab-
18 lish and operate one State environmental center if—

19 “(1) such State environmental center is, or will
20 be—

21 “(A) located at an educational institution
22 within the State; and

23 “(B) administered by such educational insti-
24 tution;

1 “(2) such educational institution is designated by
2 the Governor of the State; and

3 “(3) the Administrator determines that such State
4 environmental center—

5 “(A) meets, or will meet, the requirements
6 set forth in section 305 of this title; and

7 “(B) has, or will have, the capability to carry
8 out the functions set forth in section 206 of this
9 title.

10 “(b) The Administrator may provide financial assist-
11 ance under this title for the purpose of enabling two or more
12 States, if none of such States has a State environmental
13 center assisted under this title, to establish and operate a
14 regional environmental center if—

15 “(1) such regional environmental center is, or
16 will be—

17 “(A) located at an educational institution with-
18 in one of such States or in educational institutions
19 within two or more of such States if such institu-
20 tions agree to operate jointly as the regional en-
21 vironmental center; and

22 “(B) administered by such educational institu-
23 tion or institutions;

24 “(2) such educational institution in each State is

1 designated by the Governor of the State to participate in
2 the regional environmental center; and

3 “(3) the Administrator determines that such
4 regional environmental center—

5 “(A) meets, or will meet, the requirements set
6 forth in section 305 of this title; and

7 “(B) has, or will have, the capability to carry
8 out the functions set forth in section 306 of this title.

9 “(c) Each Governor, in designating an educational in-
10 stitution to be a State environmental center or to participate
11 in a regional environmental center, shall take into account
12 those institutions of higher education in the State which, at
13 that time, are carrying out environmentally related research
14 and education programs.

15 “ELIGIBILITY REQUIREMENTS FOR ENVIRONMENTAL

16 CENTERS

17 “SEC. 305. Each State or regional environmental center
18 shall—

19 “(1) be organized and operated so as to coordi-
20 nate, support, augment, and implement programs con-
21 tributing to the protection and improvement of the local,
22 State, regional, and national environment;

23 “(2) have (A) a chief administrative officer, and
24 (B) a treasurer who shall carry out the duties speci-
25 fied in section 311 of this title, each of whom shall be

1 appointed by the chief executive officer of the educa-
2 tional institution concerned, in the case of a State en-
3 vironmental center, or jointly approved and appointed
4 by the chief executive officers of the educational insti-
5 tutions concerned, in the case of a regional environmen-
6 tal center.

7 “(3) have a nucleus of administrative, professional,
8 scientific, technical, and other personnel capable of
9 planning, coordinating, and directing interdisciplinary
10 programs related to the protection and improvement of
11 the local, State, regional, and national environment;

12 “(4) be authorized to employ personnel to carry
13 out appropriate research, planning, management, and
14 education programs;

15 “(5) be authorized to make contracts and other
16 financial arrangements necessary to implement section
17 306 (b) of this title; and

18 “(6) make available to the public all data, publica-
19 tions, studies, reports, and other information which
20 result from its programs and activities, except informa-
21 tion relating to matters described in section 552 (b) (4)
22 of title 5, United States Code.

23 “FUNCTIONS OF ENVIRONMENTAL CENTERS

24 “SEC. 306. (a) Each State and regional environmental
25 center shall be responsible for the following functions—

1 “(1) the planning and implementing of research,
2 investigations, and experiments relating to the study
3 and resolution of environmental pollution, natural re-
4 source management, and other local, State, and regional
5 environmental problems and opportunities;

6 “(2) the training of environmental professionals
7 through such research, investigations, and experiments,
8 which training may include, but is not limited to, bio-
9 logical, ecological, geographic, geological, engineering,
10 economic, legal, energy resource, natural resource and
11 land use planning, social, recreational, and other aspects
12 of environmental problems;

13 “(3) the establishment, operation, and maintenance
14 of a comprehensive environmental education program di-
15 rected at the widest possible segment of the population,
16 which program may include, but is not limited to, public
17 school curriculums development, undergraduate degree
18 programs, graduate programs, nondegree college level
19 course work, professional training, short courses, work
20 shops, and other educational activities directed toward
21 professional training and general education;

22 “(4) the widest possible dissemination of useful
23 and practical information on subjects relating to the
24 protection and enhancement of the Nation's environment
25 and the establishment and maintenance of a reference

1 service to facilitate the rapid identification, acquisition,
2 retrieval, dissemination, and use of such information;
3 and

4 “(5) the coordination of effort in the several areas
5 required to achieve the purposes and objectives of this
6 title; and

7 “(6) the submission, on or before September 1 of
8 each year, of a comprehensive report of its program and
9 activities during the immediately preceding fiscal year
10 to the Governors concerned, the Administrator, and the
11 Environmental Centers Research Coordination Board
12 established under section 309 of this title.

13 “(b) (1) Each State and regional environmental cen-
14 ter is encouraged to contract with other regional environ-
15 mental centers and with other research facilities for the
16 carrying out of any function listed in subsection (a) of this
17 section in order to achieve the most efficient and effective
18 use of institutional, financial, and human resources.

19 “(2) Each State and regional environmental center
20 may also make grants, contracts, and cooperative agree-
21 ments on fund matching or other arrangements with—

22 “(A) other environmental centers, research facili-
23 ties, and individuals the training, experience, and quali-
24 fications of which or whom are, in the judgment of the
25 chief administrative officer of the environmental center,

1 adequate for the conduct of specific projects to further
2 the purposes of this title, and

3 “(B) local, State, and Federal agencies to under-
4 take research, investigations, and experiments concern-
5 ing any aspects of environmental problems related to
6 the mission of the environmental center and the pur-
7 poses of this title.

8 “(c) In the carrying out of the functions described in
9 subsection (a) (3) and (4) of this section, the services
10 of private enterprise firms active in the fields of informa-
11 tion, publishing multimedia materials, educational mate-
12 rials, and broadcasting are to be utilized whenever feasible
13 so as to avoid creating Government competition with private
14 enterprise and to achieve the most efficient use of public
15 funds invested in the fulfilling of the purposes of this title.

16 “AUTHORIZATION OF APPROPRIATIONS FOR PAYMENTS

17 “SEC. 307. (a) There is authorized to be appropriated
18 \$7,000,000 for the fiscal year ending June 30, 1974;
19 \$9,800,000 for the fiscal year ending June 30, 1975; and
20 \$14,000,000 for the fiscal year ending June 30, 1976. The
21 sums authorized for appropriation pursuant to this subsection
22 shall be disbursed in equal shares to the environmental cen-
23 ters by the Administrator, except that each regional en-
24 vironmental center shall receive the number of shares equal

1 to the number of States participating in such regional
2 environmental center.

3 “(b) In addition to the sums authorized by subsection
4 (a) of this section, there is further authorized to be appro-
5 priated \$10,000,000 for each of the three fiscal years ending
6 June 30, 1974, June 30, 1975, and June 30, 1976, which
7 shall be allocated by the Administrator, after consultation
8 with the Environmental Centers Research Coordination
9 Board, to the environmental centers on the following basis:
10 one-fourth based on population using the most current decen-
11 nial census; one-fourth based on the amount of each State's
12 total land area; and one-half based on the assessment of the
13 Administrator with respect to (1) the nature and relative
14 severity of the environmental problems among the areas
15 served by the several State and regional environmental
16 centers, and (2) the ability and willingness of each center
17 to address itself to such problems within its respective area;
18 except that sums allocated under this subsection shall be
19 made available only to those State and regional environmen-
20 tal centers for which the States concerned provide \$1 for
21 each \$2 provided under this subsection.

22 “(c) In addition to the sums authorized to be appro-
23 priated under subsections (a) and (b) of this section,
24 there is authorized to be appropriated for each of the three
25 fiscal years ending June 30, 1974, June 30, 1975, and

1 June 30, 1976, such sums as may be necessary to provide
 2 to each regional environmental center during each of such
 3 fiscal years an amount of money equal to 10 per centum of
 4 the funds which will be disbursed and allocated to such center
 5 during that fiscal year by the Administrator under such
 6 subsections (a) and (b).

7 “(d) Not less than 25 per centum of any sums allo-
 8 cated to an environmental center shall be expended only in
 9 support of work planned and conducted on interstate or
 10 regional programs.

11 “AUTHORIZATION OF APPROPRIATIONS FOR
 12 ADMINISTRATION

13 “SEC. 308. There is authorized to be appropriated
 14 \$1,000,000 for each of the three fiscal years ending June 30,
 15 1974, June 30, 1975, and June 30, 1976, to be used by
 16 the Administrator solely for the administration of this title
 17 and to carry out the purposes of section 309 of this title.

18 “ENVIRONMENTAL CENTERS RESEARCH COORDINATION
 19 BOARD

20 “SEC. 309. (a) There is established the Environmental
 21 Centers Research Coordination Board (hereinafter referred
 22 to in this section as the ‘Board’), for the purposes of assist-
 23 ing the Administrator with program development and opera-
 24 tion, consisting of the following nine members—

25 “(1) a Chairman, who shall be the Administrator;

1 “(2) one representative each from (A) the Coun-
2 cil on Environmental Quality; (B) the National Science
3 Foundation; and (C) the Smithsonian Institution.

4 “(3) five members, appointed by the Adminis-
5 trator, who shall be appointed on the basis of their
6 ability to represent the views of (A) private industry;
7 (B) not-for-profit organizations the primary objectives
8 of which are for the purposes of improving environ-
9 mental quality; (C) the public academic community;
10 (D) the private academic community; and (E) the
11 general public.

12 “(b) The Chairman of the Board may designate one
13 of the members of the Board as Acting Chairman to act
14 during his absence.

15 “(c) The Board shall undertake a continuing review
16 of the programs and activities of all State and regional en-
17 vironmental centers assisted under this title and make such
18 recommendations as it deems appropriate to the Administra-
19 tor and the Governors concerned with respect to the im-
20 provement of the programs and activities of the several
21 centers. The Board shall, in conducting its review, give
22 particular attention to finding any unnecessary duplication of
23 programs and activities among the several environmental
24 centers and shall include in its recommendations suggestions
25 for minimizing such duplications. The Board shall also co-

1 ordinate its activities under this section with all appropriate
 2 Federal agencies and may coordinate such activities with
 3 such State and local agencies and private individuals, in-
 4 stitutions, and firms as it deems appropriate.

5 “(d) Selection of Board members pursuant to subsection
 6 (a) (2) of this section shall be made by heads of the re-
 7 spective entities after consultation with the Administrator.

8 “(e) The Board shall meet at least four times each
 9 year. The members of the Board who are not regular full-
 10 time officers or employees of the United States shall, while
 11 carrying out their duties as members, be entitled to receive
 12 compensation at a rate fixed by the Administrator, but not
 13 exceeding \$100 per diem, including traveltime, and, while
 14 away from their homes or regular places of business, they
 15 may be allowed travel expenses, including per diem in lieu of
 16 subsistence as authorized by law for persons intermittently
 17 employed in Government service.

18 “ENVIRONMENTAL CENTER ADVISORY BOARDS

19 “SEC. 310. (a) The Governor of each State having a
 20 State environmental center assisted under this title, and
 21 the Governors of the States participating in each regional
 22 environmental center assisted under this title, shall appoint,
 23 after consultation with the chief administrative officer of
 24 the environmental center concerned, an advisory board
 25 which shall—

1 “(1) advise such environmental center with re-
2 spect to the activities and programs conducted by the
3 center and the coordination of such activities and pro-
4 grams with the activities and programs of Federal,
5 State, and local governments, of other educational in-
6 stitutions (whether or not directly participating in an
7 environmental center assisted under this title), and of
8 private industry related to the protection and enhance-
9 ment of the quality of the environment; and

10 “(2) make such recommendations as it deems ap-
11 propriate regarding—

12 “(A) the implementation and improvement
13 of the research, investigations, experiments, train-
14 ing, environmental education program, information
15 dissemination, and other activities and programs
16 undertaken by the environmental center, and

17 “(B) new activities and programs which the
18 environmental center should undertake or support.

19 All recommendations made by an advisory board pursuant
20 to clause (2) of this subsection shall be promptly trans-
21 mitted to the Governor or Governors concerned, the chief
22 administrative officer of the environmental center, the chief
23 executive officer of each educational institution in which
24 the environmental center is located, and the Administrator.

1 “(b) (1) Each advisory board appointed pursuant to
2 this section shall have not to exceed fifteen members con-
3 sisting of representatives of—

4 “(A) the agencies of the State concerned which
5 administer laws relating to environmental protection or
6 enhancement;

7 “(B) the educational institution or institutions in
8 which the environmental center is located;

9 “(C) the business and industrial community; and

10 “(D) not-for-profit organizations the primary ob-
11 jective of which is the improvement of environmental
12 quality and other public interest groups.

13 The chief administrative officer of the environmental cen-
14 ter shall be an ex officio member of the advisory board.
15 Each advisory board shall elect a chairman from among its
16 appointed members.

17 “(2) The term of office of each member appointed to
18 any advisory board shall be for three years; except that
19 of the members initially appointed to any advisory board,
20 the term of office of one-third of the membership shall be
21 for one year, the term of office of one-third of the member-
22 ship shall be for two years, and the term of office of the
23 remaining members shall be for three years.

24 “(c) Any recommendations made by an advisory board
25 pursuant to subsection (a) (2) of this section shall be re-

1 sponded to, in writing, by the chief administrative officer of
2 the environmental center within one hundred and twenty
3 days after such recommendations are made. In any case in
4 which any such recommendation is not followed or adopted
5 by the chief administrative officer, such officer, in his re-
6 sponse, shall state, in detail, the reason why the recom-
7 mendation was not, or will not be, followed or adopted.

8 “(d) All recommendations made by an advisory board
9 pursuant to subsection (a) (2) of this section, and all
10 responses by the chief administrative officer thereto, shall
11 be matters of public record and shall be available to the
12 public at all reasonable times.

13 “(e) Each advisory board appointed pursuant to this
14 section shall meet not less than once each year.

15 “(f) Funds provided under section 307 of this title may
16 be used to pay the travel and such other related costs as
17 shall be authorized by the chief administrative officer of
18 the environmental center which are incurred by the members
19 of each advisory board incident to their attendance at meet-
20 ings of the advisory board; except that the amount of travel
21 and related costs paid under this subsection to any member
22 of an advisory board with respect to his attendance at
23 any meeting of the advisory board may not exceed the
24 amount which would be payable to such member if the law

1 relating to travel expenses for persons intermittently em-
2 ployed in Government service applied to such member.

3 "MISCELLANEOUS

4 "SEC. 311. (a) Sums made available for allotment to
5 the environmental centers under this title shall be paid at
6 such time and in such amounts during each fiscal year as
7 determined. Each treasurer appointed pursuant to section
8 305(2) of this title shall receive and account for all funds
9 paid to the environmental center under the provisions of
10 the title and shall transmit, with the approval of the chief
11 administrative officer of the environmental center, to the
12 Administrator on or before the first day of September of
13 each year, a detailed statement of the amount received under
14 provisions of this title during the preceding fiscal year and
15 its disbursement, on schedules prescribed by the Adminis-
16 trator. If any of the moneys received by the authorized
17 receiving officer of the environmental center under the pro-
18 visions of this title shall be found by the Administrator to
19 have been improperly diminished, lost, or misapplied, it
20 shall be replaced by the environmental center concerned
21 and until so replaced no subsequent appropriations shall be
22 allotted or paid pursuant to this title to that environmental
23 center.

24 "(b) Moneys appropriated under this title, in addition
25 to being available for expenses for research, investigations,

1 experiments, education, and training conducted under au-
 2 thority of this title, shall also be available for printing and
 3 publishing of the results thereof.

4 “(c) Any environmental center which receives assist-
 5 ance under this title shall make available to the Adminis-
 6 trator and the Comptroller General of the United States, or
 7 any of their authorized representatives, for purposes of au-
 8 dit and examination, any books, documents, papers, and
 9 records that are pertinent to the assistance received by such
 10 environmental center under this title.

11 “DUTIES OF ADMINISTRATOR

12 “SEC. 312. (a) The Administrator shall—

13 “(1) prescribe such rules and regulations as may
 14 be necessary to carry out the provisions and purposes
 15 of this title;

16 “(2) indicate the environmental centers from time
 17 to time such areas of research and investigation as to
 18 him seem most important, and encourage (specifically
 19 through the development of (A) interdisciplinary teams
 20 within each environmental center, which teams may be
 21 composed of competent persons from the environmental
 22 center, other educational institutions and research facil-
 23 ities, and private industry, and (B) interinstitutional
 24 arrangements among such educational institutions, pri-
 25 vate industry, and governmental agencies at all levels)

1 and assist in the establishment and maintenance of co-
2 operation among the several environmental centers;

3 “(3) report on or before January 1 of each year to
4 the President and to Congress regarding the receipts
5 and expenditures and work of all State and regional
6 environmental centers assisted under the provisions of
7 this title and also whether any portion of the appropria-
8 tions available for allotment to any environmental center
9 has been withheld, and, if so, the reason therefor; and

10 “(4) undertake a continuing survey, and report
11 thereon to Congress on or before January 1 of each year,
12 with respect to—

13 “(A) the interrelationship between the types
14 of programs required to be implemented, and im-
15 plemented, by environmental centers assisted under
16 this title; and

17 “(B) ways in which the system provided for
18 in this Act for improving the Nation's environment
19 may be integrated with other environmentally re-
20 lated Federal programs.

21 The Administrator shall include in any report required
22 under this paragraph any recommendations he deems
23 appropriate to achieve the purposes of this title.”



United States Department of the Interior

OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20240

JUL 27 1973

Dear Mr. Chairman:

This responds to your request for the views of this Department on S. 1865, a bill "To amend the National Environmental Policy Act of 1969 in order to encourage the establishment of, and to assist, State and regional environmental centers."

We recommend that the bill not be enacted.

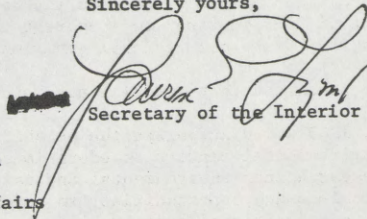
S. 1865 would authorize the establishment of state or regional environmental centers at educational institutions to conduct research into environmental and natural resource management problems and opportunities, to train professionals and carry on an educational program, and to disseminate environmental information and maintain a reference service for such information. Each center would also be responsible for coordinating environmental efforts pursuant to the bill and preparing an annual report. At the Federal level, the program would be administered by the Environmental Protection Agency and would be subject to continuing review by an Environmental Center Research Coordination Board. For the three fiscal years ending June 30, 1976, the bill would authorize a total of \$30,800,000 to be distributed by EPA to the centers on a state-by-state basis plus an additional \$30 million under a formula based on each state's population, land area and needs. The bill also authorizes payment to each center of an additional sum of up to 10% of such amounts for administrative costs. Appropriations of \$1 million per year to EPA for administrative costs through FY 1976 are also authorized.

While coordination of existing Federal, State and university environmental research and information programs should be improved, S. 1865 would institute a rigid, wasteful method of distributing funds for environmental research and information, which will only aggravate the problems of coordination. Research centers should be added where they will be most effective, not on the artificial state-by-state basis contemplated by the bill. State and local environmental problems are being dealt with on a substantial scale by State and Federal researchers connected with academic institutions at the present time. Research grants must continue to be given on a flexible basis, as needed, to those best qualified to carry out particular projects.

It should be pointed out that most environmental problems are national in scope. In recognition of this, the Federal government, including this Department, is expending substantial sums on research information dissemination and coordination of efforts to meet environmental and natural resource problems. Where local problems exist, the Federal government is now in a position on a project-by-project basis to provide appropriate assistance. In our judgment therefore, establishment of environmental centers focussing on State and local concerns is unjustified.

The Office of Management and Budget has advised that there is no objection to the presentation of this report from the standpoint of the Administration's program.

Sincerely yours,


Secretary of the Interior

Honorable Henry M. Jackson
Chairman, Committee on
Interior and Insular Affairs
United States Senate
Washington, D.C. 20510



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

WASHINGTON, D.C. 20460

AUG 1 1973

OFFICE OF THE
ADMINISTRATOR

Honorable Henry M. Jackson
Chairman
Committee on Interior and Insular Affairs
United States Senate
Washington, D. C. 20510

Dear Mr. Chairman:

This is in response to the request for the views of the Environmental Protection Agency on S. 1865, a bill entitled the Environmental Centers Act of 1973 "To amend the National Environmental Policy Act of 1969 in order to encourage the establishment of, and to assist, State and regional environmental centers."

S. 1865 would provide for the establishment of State and Regional Environmental Centers. These Centers would undertake, sponsor, and supplement existing programs of basic and applied research, investigations, and experiments related to the environment. They would also provide for study of environmental problems of particular importance to the several States, dissemination of information, and training of professionals in fields related to environmental protection. The Administrator of the Environmental Protection Agency would be authorized to provide financial assistance for State or regional (two or more States) Centers. Each must be located within and administered by an educational institution (or one or more institutions, in the case of regional Centers), to be designated by the Governor(s), and meet the following requirements:

- be organized and operated so as to coordinate, support, augment, and implement programs contributing to the protection and improvement of the environment;
- have a nucleus of personnel who can plan, coordinate, and direct interdisciplinary programs related to environmental protection; and

--have certain administrative personnel and procedures (detailed in the bill).

The functions of these Centers would be as follows:

- planning and implementing of research and other activity relating to study and resolution of environmental pollution, natural resource management, and other local, State, and regional environmental problems and opportunities;
- training of environmental professionals in several fields;
- establishment, operation, and maintenance of a comprehensive environmental education program directed at the widest possible segment of the population;
- widest possible dissemination of useful and practical information on protection and enhancement of the Nation's environment, and maintenance of a reference service;
- coordination of effort to achieve the stated purposes and objectives; and
- submission of an annual report.

Each Center is encouraged to contract with other Centers and research facilities to carry out its functions, and to make grants or other financial arrangements with other Centers, research facilities, individuals, and government agencies for purposes of carrying out the Act.

Authorizations for grants are for \$7 million for fiscal 1974, \$9.8 million for fiscal 1975, and \$14 million for fiscal 1976, to be distributed equally among the Centers; and an additional \$10 million each for fiscal years 1974, 1975, and 1976, to be distributed by the Administrator according to population (1/4 of the funds), the States' land areas (1/4), and the nature and severity of environmental problems in the areas served by the Centers and the Centers' ability to address them (1/2). Funds from the \$10 million would be available only to Centers located in

States which provided \$1 for each \$2 of Federal money. In addition, there is an authorization of funds sufficient to give each regional Center annually a sum equal to 10 percent of the funds it would get under the previous authorizations. All environmental Centers would be required to spend at least 25 percent of their Federal funds annually on interstate or regional programs.

Finally, the bill would establish two types of boards. The first is an Environmental Centers Research Coordination Board, to be chaired by the Administrator and having as its members representatives of the Council on Environmental Quality, National Science Foundation, and Smithsonian Institution, and five people to be appointed by the Administrator. Its function is to review continually the programs and activities of all environmental Centers, with particular attention to duplication; and to report to the Administrator and the Governors concerned with respect to improving the work of any Center.

Each Center would also have an advisory board, made up of representatives of State agencies, educational institutions, business and industry, and public interest groups to advise on its programs and on their coordination with the activities of other government agencies, educational institutions, and private industry related to environmental protection. Funds authorized for the environmental Centers may be used by these Boards.

Under this bill, the Administrator would be required to prescribe certain rules and regulations, indicate to the environmental Centers areas of research that he believes important to pursue, encourage interdisciplinary and inter-institutional activity, report annually to the President and Congress on the work of the Centers, and undertake a continuing survey, and report to Congress, on the inter-relationship of the Centers' ongoing or proposed programs and the ways in which the system provided for may be integrated with other environmentally related Federal programs.

Although the Environmental Protection Agency recognizes the need for study, research, planning, training, and education in the areas of environmental management, we do not recommend the enactment of this legislation.

The activities authorized in the proposed Environmental Centers Act of 1973 would duplicate existing efforts and facilities. Many organizations already are performing the functions that would be assigned to the State and regional environmental Centers.

These laboratories are operated or supported by Federal and State agencies, educational institutions, and private organizations. There is no evident need for more laboratories or research organizations. In addition, the coordination of research activities is already being facilitated by the Environmental Protection Agency and other departments of government.

EPA currently has a \$50 million in-house program of research and monitoring, and supports a substantial amount of activity at non-Federal institutions across the Nation. The scope of this activity encompasses the nature and location of pollutants, effects research, and control technology. Our planning system works to ensure that these diverse and widespread activities are coordinated and complement each other.

The legislative mandate for our research programs is national---and so are the environmental problems. There are very few subjects that a regional or State Center could study which would not be of concern in several places. The principal exception is Alaska, where EPA has a laboratory that studies cold-climate environmental problems.

Therefore, the activities of the Centers cannot help but be duplicative---of each other, and of national programs, most of which have regional or local implications. They would also be unresponsive because each would see only a small part of the problem.

The "needs system" which our Office of Research and Development has developed assures that local or regional problems will be considered for study. Statements of need can be submitted by local officials or others to regional EPA staff. Statements are received at EPA headquarters from, among others, Regional Administrators, Directors of National Environmental Research Centers, and deputy regional administrators for research and development. Priorities are then determined.

The President in his Memorandum of Disapproval relating to H.R. 56 passed by the 92nd Congress, of which Title II and S. 1865 are similar, stated:

"Academic talent and resources have a vital role to play in the success of our environmental research programs. As members of the academic community know, grants for research are awarded on the basis of not only the merits of the project, but also the capabilities of the institution to carry out its responsibilities. By creating research centers on a rigid State-by-State basis, and requiring that each be funded, the Congress is asking us to throw away our priorities and to fund programs regardless of their merits and in spite of the limited capabilities of some institutions. Equally important, this approach also ignores the competence and available capacity of already existing institutions and laboratories to carry out this vital research."

The President further stated that he shared the view of the Administrator of the Environmental Protection Agency that environmental problems are essentially national in scope even though they may appear to be local in nature. Further, to the extent that there may be local problems, the project-by-project approach in research can be used to marshal the best scientific talent to deal with such problems. The President concluded that there was no justification for establishing up to 51 new environmental centers to investigate State and local environmental problems.

The Environmental Protection Agency firmly believes that the multiplication of Environmental Centers would scatter the limited expertise capable of the necessary research and other programs. The creation of Centers in all States would only syphon our Nation's available scientific resources and talent from the more important national efforts.

For these reasons the Environmental Protection Agency does not recommend the enactment of S. 1865.

Sincerely yours,



Robert W. Fri
Acting Administrator

COLORADO STATE UNIVERSITY,
Fort Collins, Colo., July 25, 1973.

Senator FLOYD K. HASKELL,
New Senate Building, Washington, D.C.
(Attention: Betsy Moler).

DEAR SENATOR HASKELL: This letter is in support of bill S. 1865, The Environmental Resources Centers Act of 1973, which you are co-sponsoring along with others.

This bill is particularly significant for Colorado, a state which presently faces critical environmental problems due to population growth and natural resource development. Public decisions are being made which will shape Colorado's environmental future, as well as its economic well-being. This legislation would permit the universities to undertake vitally needed research upon the State of Colorado's urgent environmental problems. It would enable us to broaden our programs of citizen education; thereby fostering better policy decisions concerning the future quality of life in Colorado.

That we have serious problems confronting us is evident from the statement of our new Governor, John Vanderhoof, who stated today, July 25, that Colorado's population will approach 4,000,000 by the end of the century (up from the present 2,500,000), a short 27 years from now.

The 1972 report of the Colorado Environmental Commission, in its final chapter titled, "Options for Colorado's Future," emphasizes the vital importance of policy decisions and reflects the urgency of having a solid base of reliable data and information for such decisions.

We in Colorado must determine that we will know the capacity of our State resources and that we will refrain from overloading that capacity with either temporary or permanent population. We must determine our own State policy with respect to the preservation of the agricultural industry—and carry out that policy. We must determine whether there is any inconsistency in our prospective roles in energy production and recreational development—and then develop a policy to deal with such inconsistency. We must determine what proportion of our total population on the front range makes sense from a state-wide viewpoint—and develop a policy to prevent overconcentration beyond that point. We must determine what our total water resources are—and develop a policy for the best utilization of those resources. . . . We must determine those aspects of State policy which are dependent upon national policy—and press for the resolution of such policy. In sum, we must determine the kind of a state we want to be and then develop the policy to be that kind of state.

As the preservation of environmental quality becomes more complex, as urbanization proceeds at an accelerating pace, as industrial, municipal and recreational uses of water multiply, as development of Colorado's abundant energy resources becomes a matter of national concern, the engineer, the wildlife specialist, the botanist, the ecologist, the recreational planner, the economist, the political scientist, and representatives from many other disciplines have become indispensable sources of information and guidance to those charged with policy, planning and regulatory responsibilities.

The degree to which scientific resources of the universities are now being utilized in meeting research needs and filling knowledge gaps in environmental protection programs at all levels of government is gratifying to us in the academic institutions. But we know these resources have been scarcely tapped, and this legislation would make possible greater and more meaningful service.

Environmental problems are both big problems (regional, national) and little problems (local, grassroots). Problems of regional or national scale have received most of the attention to date. Yet it is at the grassroots level where the majority of problems are found and where the majority of solutions are used. Solutions to the grassroots problems at state and local level are the subject of over-riding concern and attention in every city council and state legislature in the nation. Here is where the multi-disciplinary expertise within the nation's universities can perform an invaluable service through problem-solving research. Here is where the linkage between research and decision making must be strong if the findings of research are to be effectively used.

The truth of this assertion is amply demonstrated by a federal-state partnership in research similar to that proposed by S. 1685. I refer to P.L. 88-379, The Water Resources Research Act of 1964. Centers for water research are in operation in every state supplying problem-solving water research at the state-local level. So effective and important is this joint program to the states that

the average state dollar contribution to the Centers exceeds the federal allocation by a factor of 1.08. In the State of Colorado, this factor is 1.33.

Perhaps even more significant in the long run is the fact that the State Centers provide advanced training opportunities for a very significant number of students through their work on research projects. Again, using Colorado as an example, an average of 50 graduate students per year receive training experience through that research program.

I believe that the same results can be expected in the environmental quality field through enactment of S. 1865, and I strongly urge a favorable recommendation from the committee.

Sincerely,

A. R. CHAMBERLAIN, *President.*

Senator HASKELL. Senator Bellmon.

STATEMENT OF HON. HENRY BELLMON, A U.S. SENATOR FROM THE STATE OF OKLAHOMA

Senator BELLMON. I am very pleased, Mr. Chairman, that the president of Colorado State University would write such a letter. It may be of some interest to you to know that I am a short-time alumnus of Colorado State. I went there for a while back in 1950.

Senator HASKELL. I did not know that. Delighted.

Senator BELLMON. They are a fine institution and I am glad they are on our side. Mr. Chairman, I have a brief statement I would like to read and I would be happy to respond to any questions that members of the committee may wish to raise.

I would like to begin by thanking you for holding the hearing and for scheduling it so promptly and hopefully that we can get action on the bill before the end of the session.

S. 1865 is virtually identical to H.R. 35 which has been introduced by Representative Dingle on the House side. I am of the opinion that bill will be moving rapidly, also. In fact, Representative Dingle has told me that it will. I might also say, unfortunately, the Interior Appropriations Subcommittee has scheduled a markup on the appropriations bill at 10 this morning, so I will need to go there as soon as my statement is over, so I will not be able to stay for the whole hearing, but I will come back as quickly as I can.

Members of the committee are probably already familiar with S. 1865 since it is virtually identical to S. 681 which was introduced in the last session of Congress and which the committee reported favorably about a year ago.

That bill was ultimately enacted by the House and Senate as title 2 of H.R. 56, but then suffered a pocket veto by the President following the adjournment of Congress.

I have reason to believe that the President will now sign this bill. I have talked with members of his staff and it appears that he has changed his mind and will take the bill.

Apparently, our earlier effort ran into a burning wall down there and it does not seem to pose a problem at this time.

The Environmental Centers Act has four major provisions: First, it provides for the establishment of a qualified environmental research and education center in each State; or at the option of the participating States, establishment of a regional center to serve a group of States. Second, it requires that each center conduct research, training, and environmental activities utilizing the interdisciplinary and interinstitu-

tional capabilities in its area and, where desirable, arrange for a consortium of institutions to conduct these activities. In other words it is an effort to bring together all the expertise the State may have and focus it on environmental problems. Third, it recommends that each center coordinate environmental activities in nonregulatory areas.

In other words, we do not want a bill that just deals with the police side. We want to do everything we can to help the communities and the States understand the problems as they develop and take action before these problems require regulation.

Finally, it provides Federal funding on a State-by-State basis with additional funds available on a matching basis.

Environmental centers would be established at an existing qualified educational institution designated by the Governor, and would be charged with responsibility for conducting, supporting, augmenting and coordinating basic and applied research and education in environmental fields of particular importance to the State. Each State is authorized to establish such a center; however, the bill encourages States to cooperate through consortiums to establish regional centers. The centers would serve as information bases for both government and industry and would provide training for environmental professionals.

The basic concept is to provide a means to solve State and regional environmental problems locally rather than nationally.

The problem has been that we have been attacking environmental problems largely from a national level, but have not given the States the means to do so with their problems before they become critical.

The bill recognizes environmental problems need to be dealt with in an integrated, interdisciplinary manner and that considerable expertise can be found in each State for solving its own environmental problems. The bill would place a major emphasis on research and education within the State, and would take advantage of expertise and facilities already existing at universities, colleges, institutions and private firms within each State.

It would provide a ready source of information and guidance to State and local governments.

Mr. Chairman, there clearly exists all across the Nation a need for this type of approach to environmental problems.

Our rapidly growing population, coupled with the high rate of development and economic growth has imposed heavy demands upon the environment.

Almost daily, we are faced with seemingly conflicting national needs. How do we assure the Nation an adequate supply of energy without ravishing the countryside or causing further pollution of rivers and oceans?

How do we provide for safe and economical transportation without further degradation of air quality? How do we provide adequate housing for a growing population without needless loss of valuable open space and agricultural lands?

The hope of the future rests squarely on our ability to find the means to sustain a healthy level of economic growth without impairment to the quality of our lives and our surroundings.

Many of the decisions to be made to accomplish these objectives are local decisions and it is the intention of this bill to provide local guidance so these can be wise decisions.

Congress has reacted to growing environmental awareness with the passage of a wide range of environmental legislation. Through these actions, Congress has expressed its determination to put a stop to pollution and other forms of environmental degradation.

Unfortunately, government has not yet backed up that determination with adequate funding, and has not yet provided the means to gather the necessary data, or to develop the necessary technological and monitoring capabilities to carry out its good intentions.

Congress has told the States, counties and cities of the Nation they must meet rigorous standards of pollution control and environmental planning. But Congress has so far failed to provide local government and industry with the means to research, understand and solve their existing problems, or to prevent future recurrence.

The environmental centers bill is intended to provide us with both the data and the technological expertise needed to restore and maintain the quality of the environment through a series of environmental research centers. These centers will give to the States the assistance they need in solving their own local and State problems, and they will put to work great reservoirs of knowledge to solve the complex questions relating to environmental growth and environmental quality.

Nearly 3 years ago, the Environmental Studies Board of the National Academy of Sciences and National Academy of Engineering published the findings of a special study group. This report is entitled, "Institutions for Effective Management of the Environment." One of the major recommendations resulting from the study called for the establishment of environmental laboratories to carry out basic, applied and mission-oriented research programs, essential to the restoration and preservation of the environment.

Many government agencies concerned with environmental matters conduct a variety of research programs, but with very special, limited aims and with almost no coordination among researchers. There is no Federal facility, and probably none outside the Government, which presently conducts broad-spectrum, interdisciplinary research on the environment as a whole. Each agency studies its own particular problem or area of interest.

It was the finding of the Environmental Studies Board that all research efforts now going on at the Federal level are inadequate from an ecological point of view.

In my view, the environmental centers concept is the best way to fill the research vacuum.

Public and private educational and research institutions in all parts of the Nation collectively represent a substantial capability in the environmental sciences. The individual specialists within each institution are presently doing outstanding work and conducting significant research. But there needs to be a means for coordination of the various efforts and for consolidation and transfer of information.

This legislation will, for the first time, provide the means of marshaling the greatest talents and expertise available in every section of the Nation in the search for a quality existence. Each environmental center will be charged with the responsibility of seeking out the most knowledgeable persons in the public or private sector to form interdisciplinary teams and to create interinstitutional arrangements nec-

essary for understanding, monitoring, and treating the total environment.

Each center will be able to direct and coordinate independent efforts; and will be able to bring together State and regional capabilities to solve problems peculiar to that region. Additionally, the State and regional organizational structure will place the talents and expertise "on location" where environmental changes can be directly monitored and observed, and where informed, positive action can be initiated locally to enhance environmental conditions.

The Environmental Centers Act is patterned somewhat after the Hatch Act which established State agriculture experiment stations. It provides that maximum responsibility be given to State environmental centers, and yet permits reasonable and responsible supervision by the Federal Government over expenditures of public funds.

The establishment of agricultural experimental stations was a bold and forward looking program to improve capabilities to feed and clothe a nation. These joint State-Federal institutions have played a vital and highly successful role in making our Nation the best and most economically fed in the world. The same type of bold and progressive program is needed today to improve our capabilities to restore and enhance our national quality of life. I believe this can best be accomplished through a series of environmental research centers funded and coordinated on a Federal-State cooperative basis and operated with the greatest possible degree of independence.

The Federal role in environmental centers will be largely limited to coordination of effort and assistance in financing. Each center would be entitled to approximately one-half million dollars a year in Federal assistance, provided the State met matching fund requirements. The decisions on how to spend the money would be largely based on needs and priorities of the States.

Mr. Chairman, we are in desperate need of a foundation of information on the current and continuing status of the environment, on changes and trends in its condition, and on what those changes mean to man. Without such information, we can only react to environmental problems after they become serious.

Passage of this bill will enable government at all levels to know when and where action is needed and to then marshal the talent necessary to make wise decisions and to undertake intelligent actions.

In addition, passage of this legislation will give us this capability in the most effective manner by focusing the best available resources and expertise in every corner of the land on environmental concerns. It marshals both private and public resources and involves Americans at all levels of life in striving toward enhancement of our national quality of life.

Mr. Chairman, that concludes my statement and I would be happy to answer any questions.

Senator HASKELL. Senator Bellmon, I appreciate it very much. You said you had a meeting of the Interior Appropriations Committee. Would you prefer to go to that and then return. I have a couple of questions I would like to ask you, but I would like to do it at your convenience.

Senator BELLMON. Mr. Chairman, it might be well to go ahead with the questions now. I am not sure how long the Appropriations Subcommittee will stay in session.

Senator HASKELL. I would like to say that I think this is a very productive and imaginative approach to the problem. I particularly like your thought of States cooperating. There are certain groups of States that fall into a natural environmental pattern. Yet, on the other hand, the environmental problems of the mountains of Colorado may be different from the plains of Oklahoma.

I do not think there is any legislation that I am aware of that brings together the environmental expertise zeroed in on the locality. I presume that it is exactly what you had in mind when you prepared this legislation.

Senator BELLMON. Mr. Chairman, that is exactly what we had in mind. I would agree with you, perhaps, in some of the larger States, the likelihood or possibility for regional centers may not be too great, but there are areas of the country where the regions are small enough and the problems similar enough that regional cooperation may be possible.

My concern about the development of this bill is, even though the States may have, presently, a considerable amount of environmental expertise available, there is no present coordination for the most part, nor is there any vehicle so the private sector can have an input into environmental concerns. This has caused serious problems in addition to this.

It seems to me there is not, at present, any coordination between the States such as we get through the agriculture experiment stations. By having some input, Federal input and Federal coordination, I believe the Nation will be much better able to attack the whole problem of our environmental concerns and do a better job of utilizing the resources we now have.

Senator HASKELL. I certainly would agree and I would like to ask your reaction. As you know, we passed a land-use planning bill recently through the Senate. We hope the House will see fit to either pass that bill or in some amended form, but with the same thrust. Assuming this occurs, it seems to me that either State or regional environmental planning centers would be of tremendous assistance in implementing that particular piece of legislation. Was this part of your thought?

Senator BELLMON. I agree completely, Mr. Chairman. This is one of the things we had in mind when we introduced the bill a year ago.

Senator HASKELL. Thank you very much, Senator. I will ask Senator Fannin—

Senator FANNIN. Thank you, Mr. Chairman. I commend you, Senator Bellmon, for the great interest you have taken in these environmental centers. We do have a confrontation, and you understand what is going on in quite a number of the States now, with EPA, the Environmental Protection Agency. There is a problem as to how we are going to be able to solve these conflicts.

It is your belief, as I understand from the statement, that S. 1865 will aid greatly in that respect.

Senator BELLMON. Yes. It certainly would, Senator Fannin. At the present time, what the Federal Government seems to have done is to impose some rather strict, and perhaps entirely proper, and badly needed requirements on the States. Yet, we have not so far established a means or provided any resources to help the States understand their

own problems and to prevent these kinds of crises from arising in the future. That is the purpose of this bill.

Senator FANNIN. Do you feel this will assist in settling a number of the problems that exist now as far as the pollution problems are concerned? Because of a large number of cars on the highways in certain cities in this country, the EPA has taken a position demanding a cutback in the number of parking places available. In some cases motorcycles must be specifically licensed. This is a very serious situation and I am sure the problem will be faced by the courts. I do not know if there is a way of complying with these restrictions. In other words, telling somebody that they must do something when there is not any particular formula available, makes it difficult for him to carry through, do you think this would help in that regard?

Senator BELLMON. Senator, the problems of air pollution and auto emission are already here. I am of the opinion it will take several months, perhaps a couple of years, to get the centers staffed up and functioning. I do not know if they would be able to have any particular input into the immediate problem of auto emissions or air quality improvement, but I would feel and hope that once the centers are in operation that they could function by preventing those kinds of problems from occurring in the future.

The present crises that we have with the air pollution in our cities and some of our industrial areas are so great that we are going to have to deal with them right now, but I would imagine if some of the State environmental centers that this bill would establish were to concentrate on auto emissions and air quality control within a very short time, perhaps 5 years or less, we might have the kind of information you have in mind.

That would make it possible for us to seek dramatic improvement in the way we move people around and, therefore, dramatic reduction in the problems of air pollution found. And, as I understand from the legislation, there is provision for authorization of approximately \$30.8 million. That would be Federal funds and an additional \$30 million would be matching funds.

Senator BELLMON. Senator Fannin, I have in my hand a compilation of the cost of the bill. If there is no objection, I would like to put it in the record.

Senator HASKELL. It will be so received.

[The document referred to above follows:]

FUNDING LEVELS FOR ENVIRONMENTAL CENTERS AS CONTAINED IN PRESENT DRAFT
OF S. 1865

SEC. 307(a).—Outright grants divided equally among centers:

First year authorization—\$7,000,000; amount per center—\$125,000;

Second year—\$9,800,000; amount per center—\$175,000;

Third year—\$14,000,000; amount per center—\$250,000.

SEC. 307(b).—Appropriation of \$10,000,000 per year, apportioned among centers on a formula basis and requiring matching of \$1 state to \$2 federal:

Amount available to typical (or average) State center—\$200,000;

State matching funds required for apportionment—\$100,000;

Total funds available to center under this section (State and Federal)—\$300,000.

Total funding for centers from subsections (a) and (b) (per State)

First year.....	\$425,000
Second year.....	475,000
Third year.....	550,000

TOTAL POSSIBLE COST OF ENVIRONMENTAL CENTERS BILL

	1st year	2d year	3d year
Subsection (a) grants.....	\$7,000,000	\$9,800,000	\$14,000,000
Subsection (b) matching grants.....	10,000,000	10,000,000	10,000,000
Regional center incentives (c).....	1,700,000	1,980,000	2,400,000
Administrative costs.....	1,000,000	1,000,000	1,000,000
Total.....	19,700,000	22,780,000	27,400,000

Senator BELLMON. I might read very quickly, the first year under subsection A would provide \$7 million of Federal grant funds, \$10 million of Federal funds to be matched by the States, and then an incentive fund of \$1.7 million and a total of \$1 million for administrative costs. That may, or may not, be all that will be needed. The total cost for the Federal Government the first year is \$19.7 million.

Senator FANNIN. That is for 1974.

Senator BELLMON. Right. For the second year, the cost goes up to \$22,780,000. For the third year, the total cost to the Federal Government goes up to \$27,400,000. The third year, subsection A gets \$14 million, subsection B gets \$10 million. The regional centers get \$2,400,000, and administrative costs are still at \$1 million.

Senator FANNIN. As I understand it, the population and other items are in a form for the distribution of the funds.

Senator BELLMON. I am not sure, Mr. Chairman, that population enters into this. I am told there is a population factor involved.

Senator FANNIN. I understand that some of the funds are involved when you refer to population. But I think the bill is clear in the bill with respect to that particular portion, so I will not bother you with that. I did want to clarify the cost item involved in the different years that you have covered. Thank you, Mr. Chairman. Thank you very much, Senator Bellmon for your fine statement and explanation.

Senator HASKELL. Senator Hansen.

Senator HANSEN. I have no questions, Mr. Chairman.

Senator HASKELL. Senator McClure.

Senator McCLURE. Thank you very much, Mr. Chairman. I know, Senator Bellmon, that you have indicated you already are late to another meeting, and I will not delay you any further, but one thing occurred to me, that the genesis of this kind of legislation came from a confusion of the Federal relationship as we moved into environmental controls.

Have you seen the situation improving over the last year or are we still in the same hiatus we may have been when this bill was originated.

Senator BELLMON. Senator McClure, you will have testimony this morning from many witnesses from the administrative and from the academic sector. I believe they can answer the question far better than I can, but it is my opinion that while perhaps some improvements have

been made, that we still have a long way to go. At present, there is no vehicle except the Environmental Protection Agency to bring about the improvements we need. That agency is primarily concerned with enforcement.

It does have a certain amount of research and coordinating capability, but its primary goal is to try to take the administrative action necessary to clean up the present problem.

The purpose of this legislation is to help in that area, but also to carry on a continuing program of research and study and advice to the local government, so we will not face these kinds of conditions again in the future.

Senator McCURE. I will conclude only by commending you for your leadership in trying to better a condition which has not been as happy as it might otherwise have been, in relationships between the Federal and State governments. Whether or not the Congress ultimately adopts this bill or not, I am certain the goal of cooperation has been furthered by the discussions engendered by the bill.

Senator BELLMON. I might say, Senator, since the bill has been introduced, it has attracted a great deal of attention in the academic community and also on the part of some State and local governments.

I believe it has had a healthy effect, but to me, the mission will not be accomplished until, and unless, we get some funding and unless we get the framework established so that coordination can be carried on in a continuing way.

Senator HASKELL. I would, in closing, just like to call your attention, Senator Bellmon, to the letter I received from Mr. Chamberlain, who is the president of the Colorado State University, endorsing a part of this proposal.

He calls attention to the fact that the success of Federal-State partnership in research has been demonstrated in the Water Resources Research Act of 1964. He says centers for water research are in operation in every State supplying problem-solving water research at the State and local level. So effective and important is this joint program in the States that the average State dollar contributions to the centers exceeds the Federal allocation, by a factor of 1.08, so I think your approach here is excellent, and you are the first one to realize this is necessary in the environmental field and I would like to commend your efforts very much. Thank you very much for appearing.

Senator BELLMON. Thank you, Mr. Chairman.

Senator HASKELL. Our next witness is Hon. Laurence Lynn, Assistant Secretary for Program Development and Budget, Department of the Interior.

STATEMENT OF HON. LAURENCE LYNN, ASSISTANT SECRETARY FOR PROGRAM DEVELOPMENT AND BUDGET, DEPARTMENT OF THE INTERIOR

Mr. LYNN. Thank you, Mr. Chairman. I am accompanied this morning, Mr. Chairman, by Bruce Blanchard, who is the Director of Environmental Project Review for the Department of the Interior.

Mr. HASKELL. We are very pleased to have you with us, sir.

Mr. LYNN. Mr. Chairman, members of the committee, I appreciate the opportunity to appear before this committee with regard to S. 1865, which would provide for the establishment of State or regional environmental centers to undertake research, training, education, and information gathering and dissemination program.

We endorse this bill's general objective of furthering environmental research and other programs which are designed to help assure environmental quality. However, we cannot support enactment of S. 1865 for a number of reasons.

First, the present efforts of the Federal Government in the area of environmental R. & D. are quite extensive, and rapidly growing. Outlays for this purpose have grown from \$566 million in fiscal year 1970, to \$844 million in fiscal year 1972, and an estimated \$1,012 million in fiscal year 1974. Of this fiscal year 1974 R. & D. amount, \$590 million is for pollution control and abatement; \$160 million is for observing and predicting weather and ocean conditions; \$120 million is for locating and describing natural resources; \$11 million is for physical environmental surveys; \$19 million is for weather modification; \$36 million is for research on environmental impact on man; and \$76 million is for ecological and other basic environmental research.

The Department of the Interior has a significant role in this R. & D. activity, and in environmental protection more broadly conceived. I will not impose upon you with a long catalog of activities, but by way of example, I might mention the water program of the U.S. Geological Survey, the biological monitoring programs of the Bureau of Sport Fisheries and Wildlife, and other efforts of the Department of the Interior. The Geological Survey, in fiscal year 1974, will carry out a \$62.5 million water resource data program. The program produces data on flow and sediment discharge of rivers; location and quantity of underground waters; chemical quality and temperatures of waters; changes in these factors, caused by man or nature; and availability and suitability of present and future water supplies.

Information gathering accounts for \$32.7 million of the total above, data dissemination activities for \$7.3 million, data interpretation for \$8 million, and research for \$14.5 million. The research component is directed toward increasing our understanding of water occurrence, movement and interaction with its environment. I should note that the water program is a cooperating program with the States and that they will contribute about \$21 million of the \$62.5 million program.

The Bureau of Sport Fisheries and Wildlife conducts wide ranging research; much of it in close cooperation with State and local agencies. The Bureau conducts habitat studies; biological monitoring of fish, wildlife, and associated ecosystems; and research to determine the impact of pesticides, chemicals, heavy metals, oil, and other pollutants on fish and wildlife and their habitats. Continuing studies of natural resource development are undertaken to determine the impact of dredge and fill activities in navigable waters; nuclear, thermal, and hydroelectric power projects; major water resource developments; and small watershed projects.

These activities account for nearly \$12 million in outlays in fiscal year 1974. The Bureau also supports the training of wildlife and fish-

ery biologists. Wildlife biologists are supported at 20 universities, fishery biologists at 25. Finally, the Bureau conducts research on the effects of environmental contaminants on fishery resources at its laboratories and field stations.

I would also mention two other efforts in the Department which are relevant to the considerations of the bill. The Water Resources Scientific Information Center of the Office of Water Resources Research is an important information gathering and dissemination program. The center processes, catalogs, and abstracts research on water resources, much of which is related to environmental issues and problems.

One of our most pressing problems is to provide an adequate supply of energy while maintaining air quality. The Department's Office of Coal Research will spend about \$75 million in fiscal year 1974 on research and development with much of that total associated with clean-burning fuels.

We doubt that a large number of relatively small centers would materially contribute to our basic information on environmental issues.

Second, environmental issues and problems have a variety of origins and solutions, ranging from the local to the national level. Establishment of centers in all, or nearly all States, would constitute a fragmented and unfocused effort that would, because of the scarcity of budget dollars, probably detract from the net impact on our environmental programs. It would be preferable to focus our support on fewer research efforts in more depth in an attempt to find feasible solutions to the serious local problems which are occurring across the country. That is to say, while a particular environmental problem may be "local" in its origin or have some unique local aspects, the solution to the problem—technical, economic, or legal—is usually of such generality that it is most efficiently sought through an institutional approach which transcends State boundaries.

Additionally, there may be certain economies of scale in the establishment and operation of typical research laboratories. When research involves a complex, expensive system of equipment, for example, it is better to have fewer such laboratories which are better equipped than to have many centers, none of which is capable of analyzing completely the problem at hand.

With regard to the training of environmental professionals and environmental education programs, it is our belief that the various private, local, and State education institutions and systems have responded and will continue to respond to the increasing awareness and concern about our environment through curriculum innovations, workshops, seminars, and placement patterns of college graduates in the social sciences, as well as the biological and physical sciences.

Under the provisions of this bill, each State would be given a monetary incentive, provided by the Federal Government, to establish an environmental center at a State educational institution.

Such an arrangement may not be optimal from a State's point of view. For example, environmental professionals may be better trained and information gathered and disseminated through the existing State agencies which have responsibility for environmental decisions.

It is the decisionmakers in State agencies who need the staff and information to meet such responsibilities. Establishment of separate centers may have the unintended effect of denying these decision-

makers the information and assistance they need. The Federal Government should not begin a program which would fragment a State's own efforts and create internal communication and coordination problems at the State level.

If environmental centers do contribute to the analysis and solution of State problems, I would expect them to be established without Federal assistance, or with the support of carefully targeted Federal assistance. While I am uninformed on the extent to which this has occurred, I suspect that many institutions of the type envisaged in the bill, have already arisen.

Such centers, or their academic staffs, are, of course, eligible to apply for and receive Federal support, available through the Department of the Interior and other agencies.

In summary, we feel that the concerns to which S. 1865 is addressed are vitally important ones, but we believe that they are being dealt with through the combination of Federal, State, local, and private efforts already in being. The additional assistance envisaged in the bill would contribute little to the quality and results of the existing programs of this Department and other agencies and we believe the action it calls for would be detrimental to our efforts to provide the most effective protection of environmental quality.

Mr. Chairman, this concludes my statement. I would be pleased to answer any questions of the committee.

Senator HASKELL. Well, Mr. Lynn, I do not dispute your figures and I do not dispute the fact that your department is engaged in research on the specifics you detail. On the other hand, it occurs to me that the environmental problems vary from State to State and region to region.

I would also point out that the bill does not require each State to establish this type of center. Do you not think that there may be regional environmental problems that differ in various parts of the country?

Mr. LYNN. Certainly, they do. They vary from region to region and from State to State. There is no question about that.

Senator HASKELL. Don't you think it might be desirable to have a regional focus that would dwell on regional problems as opposed to the very broad generalities that you list on page 1 of your statement? Don't you think this might be productive?

Mr. LYNN. Senator, I do feel that under appropriate conditions and with a proper ground work being laid, that ground work consisting of adequate consideration and consultation with State and local public agencies, State and local private activities, Federal activities in the State, that that might be a productive approach, although I think that we would all agree that the importance of Federal sources of data will continue even for very local problems.

Senator HASKELL. Let me interrupt you and ask you this. For example, I come from Colorado as you may know. Let us suppose the biggest city in Colorado, Denver, wanted to locate a sewage disposal plant and wanted to locate it not only in the most efficient and economic manner but in the best environmental manner, the best from an overall land planning viewpoint, where would the city turn for such advice?

Mr. LYNN. The city would turn to existing public agencies for one thing.

Senator HASKELL. What are those existing public agencies?

Mr. LYNN. The Department of the Interior for one, the Environmental Protection Agency, the Department of Agriculture.

Senator HASKELL. You mean you want them to come back here to Washington.

Mr. LYNN. They have State institutions as well. I do not know how the Natural Resource Department activities are organized in the State of Colorado, but that is another source.

Senator HASKELL. I would merely comment to you that as far as I know, the department of natural resources in the State of Colorado would not provide such information and assistance.

All I am trying to point out to you that there is need. For the problems in the State of Colorado, people need, locally, some place to go where expertise is gathered together.

Maybe somebody is doing a lot of study at the Colorado University, maybe somebody out in California has done study, but there are a lot of local environmental problems that the rather large and grandiose studies conducted at the Federal level do not treat.

I would also suggest to you, and I would like to get your reaction, under Senator Bellmon's bill, the States are required to put up money. I would suggest, and would see what your reaction is, that a State might well decide it is not worthwhile putting up the money and, therefore, there would not be any expenditure at the Federal level. Don't you think that is possible.

Mr. LYNN. That is certainly possible, but I think under the national formula, there is strong incentive to put out the small funds needed to support the State's educational institution. Senator, May I make a comment. I do not dispute in anyway the importance and criticality of the kinds of concerns you are expressing. My concern is whether or not this particular arrangement, as proposed in the bill is going to answer the kind of questions that are being posed.

It amounts to taking a sum of resources and spreading it very thinly across a large number of educational institutions.

Based on my experience with these kinds of arrangements and with educational institutions, it is by no means certain that that particular approach will, in the end, produce the kind of institutions that will enable the city of Denver or other communities or individual private firms to get the information they need.

That is why we have expressed the concern that to the extent that we are providing additional resources for this area and recognizing that we already have a fragmented approach to say the least within the Federal Government and elsewhere—

Senator HASKELL. I would interrupt again. That is the problem. We have a fragmented approach. Senator Bellmon suggests we have a unified approach for local problems, either at the State, or the State of Colorado and the State of Wyoming for example, decided to set up a regional agency, there would be something that would pull everything together in one point.

I guess I have to comment. I find your logic not the same as mine, so I will not question you any further. Thank you, Senator Fannin.

Senator FANNIN [continuing]. Thank you, Mr. Chairman. Dr. Lynn, I am sorry Senator Bellmon could not be here because I find there are questions I would like to ask him, after you have given your

testimony. There are some perplexing problems. I do not like to see the Federal Government spending this amount of money unless benefits accrue. The statement you made regarding the duplication of effort, do concern me.

I am wondering if this would accomplish some of the problems we are facing in States today. I was hoping perhaps it would, but as you explained it, I doubt this would be the end result. We are having problems in the State of Arizona and other States, as you know, with some of the rulings of EPA. But, in posing the question to Senator Bellmon, he said that would not result in an immediate answer to some of these problems, but it would be helpful. Do you think that would be the case with these centers. Would it be worth the money involved to bring about that assistance?

Mr. LYNN. Senator, I do not question there would be some desirable benefits coming out of this bill. My question is whether or not we can predict, or whether there are sufficient controls, in targeting of this assistance to guarantee that that is the rule rather than the exception.

For example, many different institutions in many different States are dominated by different departments. Some might have a strong engineering department, others a strong forestry department, others a strong marine biology department.

The bill poses for each of these centers a very wide array of missions. It provides an amount of resources that I think would by no means enable each of the institutions to pursue that whole array of missions being offered to it.

My fear would be that the institutions would pick up those things they know how to do best or in which important faculty members are interested in and work on those. Whether or not this produces a pattern of research and analysis and data gathering that conforms to the needs of that locality or of the State, or whether it produces a pattern which guarantees what the bill seeks, which is comprehensive interdisciplinary result is a question in my mind.

Senator FANNIN. I agree if we do not bring about a coordinated effort and do not solve some of the problems facing us today and in the future, we may be creating a center that would duplicate many of the agencies within the State.

I notice that on page 8 of the bill, under section 3, the "establishment, operation, and maintenance of a comprehensive environmental education program directed at the widest possible segment of the population, which program may include, but is not limited to, public school curriculums development, undergraduate degree programs, graduate programs, nondegree college level course work, professional training, short courses, workshops, and other educational activities directed toward professional training and general education."

It goes on and there is quite a list of activities involved, mostly in the educational field. I am wondering whether or not this could be directed, perhaps, to a more limited extent and still be helpful in settling some of the problems we all agree exist. There is such a difference, perhaps best illustrated by the problems of an Eastern State compared to a Western State. I do feel that we need to better coordinate our efforts and not have the early confrontations that we now face in several of the States, which brought about, the States feel, the dictatorial policy that has been adopted by the Environmental Protection Agency.

It would seem from your statement, that you do not feel this would assist in solving that particular matter.

Mr. LYNN. No, Senator, I feel that it would not fulfill the promise that the bill holds out. I might add that nothing precludes the State institution from seeking to create such a center or a group of institutions in different States to create such a center.

The Department of Interior has been approached from the point of view of seeking some amount of support from us along with support from other agencies such as the Environmental Protection Agency, and the Department of Agriculture, combining that support with foundation support and support from private industry.

In my opinion there is ample legislative authority. There are funds to permit these centers to be created on the basis of local initiative. I believe that when local initiative attempts to put together such an approach and such a proposal, we are likely to get better results because it would have been based on a very careful assessment of what the needs are and an attempt to sell that assessment to the cognizant foundations, Federal agencies and private industries. My own conviction is that will lead to a better result than if we simply, in effect, hold out sums of money to every State and ask them to respond.

Senator FANNIN. Well, you have some very valuable information in your statement. I certainly feel on page 4—I am not going to take up the time to read, but the last paragraph on that page about the provisions of this bill creates some problems that I visualize. I will ask Senator Bellmon at the first opportunity to give me his thoughts on those particular items. It is important that we consider this legislation from every standpoint. I do thank you for the information.

Mr. LYNN. Thank you, Senator.

Senator HASKELL. Senator Hansen.

Senator HANSEN. Thank you, Mr. Chairman. Let me express my appreciation to you, Dr. Lynn, for your very candid and forthright statement. I might say that I can understand Senator Bellmon's interest and the interest of his cosponsors in this legislation.

Some few years ago, I introduced a bill which I think still has continuing merit. A bill which would have provided for a national research station and my concern was with respect, specifically, to the National Parks and Monuments System.

All too often in the past, we have reacted to situations which have arisen rather than being able to anticipate them. I had a particular concern in this area because of the fact that we have some six national parks and monuments in Wyoming. And, because the oldest and first national park at Yellowstone is largely in my State. Just a teeny bit of it goes off into Idaho and Montana.

Grand Teton, too, is there and when a service is given the responsibility of trying to protect all of those very fragile ecosystems, as well as the natural wonders that occur, I felt that we ought to try to get ahead for once in anticipation of problems rather than simply trying to react to them as they came along.

With that thought in mind, I proposed there be established a national environmental research station which could study or be the focus for national attention and the idea which I hope would stimulate the people throughout the United States, particularly those in the Park Service, whether it be the Everglades in Florida or California or any place, to give some thought on these problems.

The legislation has not yet become a law and I regret that is the fact because I think it still has some merit. Nevertheless, as I listen to your presentation, it did occur to me that you focused in your delineation of present activities upon many important subjects. You spoke about the Geological Survey and that that program under its aegis included the flow and sediment discharge of rivers, location, and quantity of underground waters, chemical quality and temperatures of waters, changes in these factors, caused by man or nature, and availability and suitability of present and future water supplies. You spoke about the Bureau of Sport Fisheries and Wildlife, the various studies, ongoing programs, that are a part of that Bureau's activities, including the dredge and fill activities in navigable waters, nuclear, thermal, and hydroelectric power projects, major water resource developments, and small watershed projects.

Then, you spoke also about coal research and the need to provide an adequate supply of energy while maintaining air quality. I could not help thinking that in each of these areas many of these activities are ones which certainly would be of real concern to a number of States. Those dealing with the fisheries resources along our coastal areas obviously would not have as much interest in Wyoming and Utah as they would for the coastal areas. But, nevertheless, it occurred to me that were this bill as it is written become law, there could be a great duplication of activity.

You could have many of the States carrying on almost identical programs. When you talk about energy research, I can see that West Virginia and Wyoming and Montana very well would have an intense interest in this subject, and could be carrying on almost duplicative research. I recall an experience I had a number of years ago when I served on an advisory committee to the Secretary of Agriculture for livestock marketing and research. We went out to Beltsville one time when we were in Washington and we were told that in their library on animal diseases is the most complete library to be found anywhere in the world. If a problem breaks out anywhere in the world, the chances are that before too long, somebody will go to the USEA, the Bureau of Animal Husbandry asking what they know about that disease.

I raise this point in connection with the question Senator Haskell raised in Colorado, where will Denver go. Knowing something of Denver and having great respect for the ability of its persons, a respect I know is certainly well merited on the basis of their representation in the Congress of the United States, they would go where they could get the best information. I suspect they would go, among other places, to Washington, D.C., because here, likely, is to be found the best pulled together file on what has been learned about these problems that you could find anywhere.

The wrong thing to do, I would suggest might be—if I could speak about Laramie, Wyo., so as not to get myself into any further difficulties, Senator Haskell, I am in trouble with my good friend from Idaho already.

If Laramie, Wyo., was to go to a regional center or a State center which would likely be on the campus of the University of Wyoming in Laramie, they might make some bad mistakes by not having the very best evidence, the very best research documentation that they could get.

What I am trying to say is it occurs to me that there is not only need

to intensify and to expand into this sort of research, but there is an equal need to make certain that it is all pulled together some place.

Senator HASKELL. Will the Senator yield?

Senator HANSEN. Very happy to.

Senator HASKELL. Is the Senator suggesting that Washington is the repository of all knowledge?

Senator HANSEN. It is the repository of all knowledge, most of which exists outside of Washington. They catalog it here. Thank you for helping me clarify my thoughts, Senator Haskell. Well, I have the feeling that we are talking about priorities these days, how you spend your money most wisely. I am inclined to think, when I recall the role that the USDA plays in experimental stations and extension service work throughout the 50 States, I know that, unless things have changed and very likely they may have since it has been a long time since I served the Secretary of Agriculture in an advisory role, that one of the things we did was go over all of the different State programs for which Federal grant applications had been made.

We examined them to see whether the particular project or inquiry that one State proposed to make had not already been undertaken in some definitive work accomplished some place else.

I was surprised to find how many times a number of States would propose doing something that had been done exhaustively and rather completely some place else. So I must say with great regard for my good friend from Oklahoma and the other cosponsors of the bill, I should think this type of legislation could result in a proliferation of duplicative activity, and unnecessary spending of money which would not serve the best interest of our environmental progress.

That is an awful long question and really is not a question at all, but would you care to comment on that?

Mr. LYNN. Yes, Senator, you put your finger on part of our concerns. We do not mean to pretend that we have adequately covered every research gap or research mission, nor do we mean to pretend that our dissemination is completely satisfactory.

What we do contend is, as you are pointing out, if we are to focus our efforts on priority concerns, if we are to develop the kind of information data and analysis of the quality that will serve both Federal and local decisionmaking that will comply with the spirit of our various environmental protection acts, we face the task of being quite precise about what those needs are, of insuring we have a critical mass of first-rate talent available to work on this problem of making them appropriate and generalizable to where we most frequently encounter problems throughout the country and, in many cases, of mobilizing appropriate technology to enable us to accumulate the data needed to make them available in a form usable by local people.

For that reason, we worry about efforts that would further fragment our existing efforts. I think the right approach would be based on, first, an assessment of precisely what it is that is needed at each level of government and by private industry, then to design an approach that guarantees that will become available.

It may well be that approach will be, as we have already seen is the case, a Federal responsibility for data. That approach we pursue with our employment, labor, education, social statistics, and I think what we are seeing is the case with environmental data. This is the most effi-

cient and nonduplicative and carefully focused approach in many, many cases.

I do not mean to totally deny the argument that localities need the information for their decision that is most suitable for them. That may mean some local sources will be needed.

Our concern is that we design that approach carefully, that we support those who promise success and that we support them appropriately, not that we spread resources so thinly with such insufficient quality control that we have no way of knowing whether the result will be advantageous or disadvantageous, and, indeed, further fragment the management and oversight of our support for environmental quality data and analysis.

Senator HANSEN. Would it not be true that a great deal of the pertinent and relevant critical information that any city would need, and should consider prior to building a sewage treatment disposal plant or whatever, is available and would be applicable whether you are talking about Wheeling, W. Va.; Cheyenne, Wyo.; or Butte, Mont.?

Mr. LYNN. That is absolutely right.

Senator HANSEN. You are treating something that is fairly uniform in many respects.

Mr. LYNN. Not only are the methodologies for measurement available from existing agencies that have worked on this problem and should be drawn upon by localities, but so is the data.

We do extensive water quality monitoring, for example, and we will be doing more. These data are available and should be made even more available to local interests that need them.

It is our feeling just on an empirical basis, it is frequently much more efficient for these things to be done under focused expert management, focused on the ultimate policy problem.

Senator HANSEN. I should think it would be true that the States of Delaware, Maryland, and Virginia, any that touch the Chesapeake Bay area, as well as California would have a real interest in research on what the effects oilspills would have on sea life of all forms.

I am not suggesting for a moment that there should be any attempt insofar as the Federal Government is concerned to stop or discourage States from State-financed or privately supported investigative studies of this nature.

Let them go ahead full tilt, but I should think before the Federal Government wanted to participate in the funding, there should be some looking at the different research programs that are proposed to be undertaken to make certain you are not putting your money in an effort that is being undertaken along the same lines by a multiplicity of State agencies.

Mr. LYNN. I think that is right.

Senator FANNIN [presiding]. Senator McClure.

Senator McCLURE. Thank you very much; and I would state, Senator Hansen, you are not at all in bad with the Senator from Idaho by attempting to move Yellowstone entirely into Wyoming. I am certain you are doomed to failure and, therefore, I was not at all disturbed by it.

I have a little difficulty following one aspect of the statement, or, perhaps, two. In the main, I understand the sense of the statement al-

though the Federal Government is now involved in joint cooperative efforts with the States in a number of research efforts and we are certainly not about to stop all those.

Mr. LYNN. No, sir.

Senator McCCLURE. I think we have experiment stations that are jointly funded by State and Federal efforts which have been a very happy success.

One of the reasons we have had such a tremendous growth in the output of the agricultural sector of our economy has been in a large part due to the very good work done by Federal agencies and State agencies and by joint efforts of both. Is that not true?

Mr. LYNN. Yes, sir, that is true. I agree.

Senator McCCLURE. You detail some Federal efforts in water resources that are nevertheless also State efforts and joint efforts.

Mr. LYNN. Yes, sir.

Senator McCCLURE. In which Federal money goes into the State effort, both in grants and water resources institutes. A number of such approaches have been utilized even though the States were doing that work independently and the Federal Government was working independently. Nevertheless, the constructive cooperative effort has also yielded results and I think we have to recognize that.

Mr. LYNN. Yes, sir. I do not dispute that at all. I am not thoroughly familiar with all the operations of all those programs. I suspect there have been problems in some of them, but I do not dispute that.

My concern is that as we apply scarce additional dollars and effort that we make certain that we are doing that in the way guaranteed to be most productive and I have doubts that this would be. That does not mean that every other effort has not been successful. They have been.

I believe, though, that on the basis of the already existing involvements of State and local agencies, and of universities, and a wide variety of problems in this area, that we should be fostering their initiative, encouraging them to come on their own rather than to simply spread out more resources that, as I said, we cannot guarantee will produce much.

Senator McCCLURE. If this bill were passed, would you favor the strong administrative direction that is contained in the bill or would you rather have, if there were such environmental centers created, would you prefer they be more independent than the direction which is set forth on pages 19 and 20 of the bill under section 312?

Mr. LYNN. I would certainly favor the kind of machinery that would guarantee that the centers, if they were to exist, would do their work, set up their research program, their education program, in a manner first that would focus on the most important general needs of the State or the region, and it would be nonduplicative.

Senator McCCLURE. Determined by who?

Mr. LYNN. It would have to be determined as much as possible by, on the one hand, local and private interests in the State and region involved who have the problem, but also by representation from Federal and State agencies that are responsible for so much of the effort that is addressed to those problems in order to guarantee that there not be duplication or not be an effort so fragmented that it will not add up to anything in the end.

I believe there has to be substantial degree of policy oversight, guarantees that adequate consultation would take place with the institutions on the Federal, State, local, and private levels that would benefit from or have an interest in the outcomes.

Senator McCCLURE. There have been quite extensive hearings on the rather broader question of data change and the availability of the masses of data generated by efforts at all levels, so that we avoid duplication. To let a scientist at one university know what a scientist of another university has done in a given field so that he does not undertake precisely the same work without knowing there is a base upon which to draw.

I think that is inherent here. At the same time we might be trying to generate an independence of action that could give results which does not necessarily fit the bureaucratic blueprint. I think initiative is often stifled by overdirecting.

Mr. LYNN. I agree with that. The notion that we had a blueprint, of course, I think is not entirely true.

Senator McCCLURE. Well, section 312 tends to the establishment of a blueprint.

Mr. LYNN. No, I think it is important that there be opportunity for the exercise of independence judgment by those involved. However, there are problems in insuring nonduplication particularly when we are talking about an area where substantial growth is being experienced, an area relatively new and an area in which lots of people in lots of different places are moving in.

I have had some experience in the past with trying to set up data dissemination systems. It is very hard to do. It is very hard, particularly, to ask researchers and analysts working on problems to make regular reports to some central place, and to have those things abstracted and, in turn, disseminated. Those things do not happen the way we would like them to happen.

This is true even in Federal agencies where you may have as few as a half a dozen agencies involved. It is very hard for one agency to find out on a timely basis what another agency is doing.

Senator McCCLURE. We have the same difficulty up here, trying to find out what the agencies are doing.

Mr. LYNN. When you try to coordinate the activities of up to 50 environmental centers, I think you are talking about enormous problems of coordination.

Senator McCCLURE. Isn't that also true with respect to the existing efforts by State agencies that are now doing the work with absolutely no effort of coordination?

Mr. LYNN. Yes, sir.

Senator McCCLURE. Wouldn't some effort of coordination, imperfect as it might be, improve the situation rather than make it worse?

Mr. LYNN. Some method of coordination would undoubtedly improve the situation. Again, I have seen efforts of coordination which are harassment rather than a benefit to the individual doing the work.

Senator McCCLURE. That is why I asked the question about section 312. On a slightly different direction, I am confused by what seems to me to be a little ambivalence in your statement. On page 4, you say, "it is our belief that the various private, local, and State education

institutions and systems have responded, will continue to respond, to the local awareness," and so forth. So, you have a belief that there is some ongoing work in this area. On page 5, you state, "while I am uninformed to the extent which this has occurred, I suspect that many institutions of the type envisaged in the bill have already arisen."

If you are uninformed, on what do you base your belief?

Mr. LYNN. Sir, I cannot provide you with what I consider to be an adequate tabulation of the extent to which that is true, and I do not want to indicate I have such a tabulation available to me.

I am aware, through experiences I have had and my colleagues have had in obtaining environmental data, working with various agencies and private firms that are attempting to collect it, that the universities, for example, are indeed involved in many of these types of activities already.

They are responding in many or most instances, to felt needs on the part of those—

Senator McCLEURE. Has the Department attempted to ascertain how many such centers have been formed or how much work has been done in this area?

Mr. LYNN. I do not want to say no to that, because I am not certain to the extent, for example, to which the Geological Survey might have a complete tabulation on this. I am not aware of an attempt to develop a definitive set of facts and information on the extent to which this is going on.

I suppose if one were to survey our research contractors and grantees, where they are and what research is doing what, we could get a good feel for what is going on out there.

Senator McCLEURE. The reason I asked the question is that I don't want the Federal Government to get into an area where it is not needed or where its presence would be more disruptive than helpful, but on the other hand, before we can determine whether it is needed, I think we have to know what activity is occurring.

I would hope some witness can tell us whether or not this is needed on the basis of some rather concrete information, and not on the basis of a kind of a felt response to activities going on out there somewhere, somehow.

Mr. LYNN. Senator, I would be happy to ask and see what additional data we can provide for the record on this.

[Subsequent to the hearing Mr. Lynn submitted the following information:]

U.S. DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D.C.

Some examples of University-State cooperative research centers:

(1) Each of the 51 State water resources research centers has an advisory committee consisting of leading water officials in the State including Federal, State, and local officials as well as knowledgeable private citizens and representatives of non-public organizations.

(2) The State water resources research centers have organized themselves into seven separate groupings of States, with common problems, to carry out systematic, analytical "water problem and research needs identification studies." Most of these problems relate to environmental and resource management.

(3) The 20 wildlife and 25 fishery cooperative units, located at 28 different universities, are involved in State-wide research programs for aiding State governments in solving natural resources management problems.

(4) The Eisenhower Consortium and the Committee on Future Environments, comprising 20-plus Rocky Mountain universities will work together to analyze primary management issues in the region, including natural resources and economic development.

Some Universities which have Environmental Centers:

- University of Hawaii
- University of Alaska
- University of Georgia (University of Georgia Research Park)
- University of Washington
- University of California System
- University of Michigan (Institute of Science and Technology)
- University of Miami (Rosenstiel School of Marine and Atmospheric Sciences)
- University of Nevada (Desert Research Institute)
- Utah State University (Utah Water Research Laboratory)
- University of Southern California (Allan Hancock Foundation)
- University of New Mexico (John Muir Institute)
- Duke University
- North Carolina State University } (Research Triangle Institute)
- University of North Carolina }
- University of Connecticut (Center for the Environment and Man)
- Cornell University (Center for Environmental Quality Management)
- Drexel University (Center for the Study of the Environment)
- Indiana State University (River Basin Research Center)
- Lawrence University (Institute of Paper Chemistry)
- Syracuse University (Syracuse University Research Cooperative)

Senator McCURE. One final comment, I think there is a great deal of truth that there are research programs that require a large staff and large coordination and there are research activities that do benefit from the economies of scales, but I think you would agree that many of the significant discoveries in various fields are made by individual scientists working alone.

Mr. LYNN. Yes, sir, I agree that is the case.

Senator McCURE. If it is the case, then even small institutions with small staffs can make significant contributions in those areas which do not require large coordinated activity.

Mr. LYNN. I believe that is the case as well. My point on that, however, is there are already numerous sources of support for such investigators. The National Science Foundation, as well as the mission agencies are available to provide support for scientists and investigators and universities.

Senator McCURE. Is there a coordinating agency? Is there the mechanism to coordinate and disseminate the data?

Mr. LYNN. Again, I am not aware that we have a smoothly functioning institution or set of institutions to see that the results of each investigator's efforts are disseminated promptly and in a timely way.

However, right now the community of those concerned with environmental information is becoming a more close-knit community all the time. So, too, in the last few years, I think it is the case of our own agency as well as I am sure, within the Environmental Protection Agency, are getting better and better at seeing to it that ideas do get circulation and there is cross-fertilization.

One vehicle for this is our environmental impact statements which achieve wide circulation and catalog the latest research and evidence available. So we do have means available, not only for supporting the independent investigator who has a keen interest, we have increasing numbers of means to have results made available.

Senator McCLURE. I am not satisfied that the coordinating activities that currently occur are sufficiently rational or sufficiently well organized to optimize the benefits of the money that does get spent by Federal, State, and local agencies and institutions.

Mr. LYNN. I do not mean to express complete satisfaction with it either. All I am saying is that it is not nonexistent. However, I would question as to whether or not this program might not make matters worse rather than better in that regard.

Senator McCLURE. Well, again some coordination is better than none, unless it stands in the way of getting the dissemination and coordination together.

Mr. LYNN. I agree with that, but not only is this establishing coordination, it is also establishing a substantial additional number of people to coordinate and that was the burden of my point.

Senator McCLURE. I think I understand your point. I think, too, you might take a look at legislation which was passed by Congress and vetoed by the President last year. It is very revealing. Thank you very much.

Senator HASKELL [presiding]. Senator Bartlett.

Senator BARTLETT. Mr. Chairman, Dr. Lynn, I am sorry I was not here for the entire period of your testimony. As this bill was written, does it insure that the research and development that would be done in a region or a State would be indigenous to that region or State and thereby hopefully beneficial to that region or State, or would the initiative come from the State or region, or would it come from Washington?

Mr. LYNN. My understanding is that there would be a substantial reliance upon the educational institution which is the base for the center, in determining what goes on, although the various advisory mechanisms, of course, at the State center level would be available, as Senator McClure pointed out, seek to achieve coordination.

One of my problems with the bill is one you allude to. That there is not inevitably any way of guaranteeing, particularly if one is interested in protecting the independence of the university-based research enterprise, that the results will not be too duplicative or that the results will be highly focused on local issues.

I have been in universities and I presumably will be again. There is a high degree within them of response to fashion and response to availability of funds. In part, that is good. But, in part, it does raise problems to insuring there is adequate longrun focus on high-priority needs. So, that is what worries me in part, that we haven't a mechanism to insure that these resources are focused on those things that would constitute the most important or useful outpoints of a regional or State center.

Senator BARTLETT. On page 19, section 312(a), it says:

The Administrator shall (1) prescribe such rules and make regulations as may be necessary to carry out the provisions and purposes of this title, and then (2) indicate the environmental centers from time to time such areas of research and investigation * * *.

It seems to me this would allay your fears, but it would, perhaps, create some in my mind. Perhaps there would not be sufficient opportunity for the local or regional center to exercise its own independence and key in on problems they would see.

Mr. LYNN. This is a dilemma, a dilemma not specifically in this bill, but a dilemma generally.

On the one hand, when Federal funds are being expended there is a general desire to see that there is adequate accountability.

On the other hand, particularly when you are dealing with an area of research and particularly with educational, academic institutions, one wants to avoid, as you have said, imposing unwarranted and intolerable Federal regulatory blueprints on the individual researcher or individual educational institution.

The problem is how to walk that tightrope. My own conviction is that we do not need to get onto that tightrope. There are ways of providing more targeted and focused assistance to those institutions and investigators who want to work on those kinds of problems and will be willing to form an agreement with whoever is providing the support as to what is getting done, when it will get done, and for what purpose.

We can do that now and we ought to do it. My concern is when we consider what amounts to another categorical program, as I believe this bill would do, we are asking for a lot of problems. We are not guaranteed that, in grappling with those problems, it will all come out to a first-class result.

I would just as soon avoid another categorical approach that seems to me to have the ingredients of problems that cannot be solved within it.

Senator BARTLETT. I think I can visualize some ways in which there can be inputs to the various regions, centers, or States. Exchange of information, information coming from the Director in Washington as to duplication of effort, as to reasons why perhaps a certain project might not be in the overall interest, and other projects going on, would satisfy the State's interest.

That could eliminate a lot of unnecessary duplication that might otherwise occur if everybody is operating in a vacuum; but certainly today, I do not think there is any reason for that and there could be some stubbornness from time to time exercised as part of this independence.

But I am just wondering if you think it might improve the bill to assure more State integrity with regard to——

Mr. LYNN. Certain improvements could be made, but I think some of the questions I have been raising really go to the wisdom of this approach even if amended.

Our concerns are not only on the potential for duplication, or on the potential of the research not being the kind that is most urgently needed. Another concern, as I have expressed earlier, is that there is inadequate relationship between the product of the center and the needs of the State and local, and indeed, private decisionmakers that need the results.

The university-based research enterprise, in its interested independence, might, in order to protect its integrity, want to have independence precisely from those people who most ought to be involved in deciding on the outcomes, which are the State and local decision-making authorities.

So our concern is with that aspect of the arrangement as well.

I am certain improvements could be made. I am not certain that would enable us to endorse the approach, however.

Senator BARTLETT. On that point you have just made of influence from, say, the political arena, of the State to the academic community, do you feel that that is any more prominent in the State than it is at the Federal level?

Mr. LYNN. Do I feel political interference creates more problems at the State level than at the Federal level? Well, I would not want to generalize. In some cases, probably yes and in other cases, probably no. There are problems, I think, in both kinds.

Senator BARTLETT. From your own experience with the academic community, do you feel that the collegiate structure is a logical place, the best place, a poor place or what kind of a place to undertake this research and development in solving environmental problems?

Mr. LYNN. My own belief would be that that would vary considerably from place to place, which again is one of the reasons we have problems with this approach. I am sure in some cases, universities would be the appropriate place because that is where the people are that are most interested in these things.

There may be existing laboratory facilities. There may be a record of involvement. In other States and areas, that may not be the case at all.

If we were to start from ground zero with say, how do you want to set up a center, it may be based around a State agency rather than a university or it may be based around a consortium approach to establishing such a center.

That is why it troubles me to mandate an approach that might work some places but not work in many, many others.

Senator BARTLETT. If it did not work, then what would be the effects of that as compared with say those areas where it did work assuming that it did work. You are, in a sense, saying it would provide a new and more innovative and perhaps better information than is otherwise available.

Mr. LYNN. To the local officials that need it. What I am afraid will happen is we would have another categorical program that just limps along. We have some of those. They start off with bright promise. They don't quite work out. The GAO gets involved, OMB gets involved. It becomes a political football and then it limps.

Neither the opponents or proponents of the program are quite satisfied with what happened. I, for one, do not feel that we should quote a number of instances in which that occurred.

I think that there is a danger that that would occur here.

Senator BARTLETT. Thank you very much. Mr. Chairman, thank you.

Senator HASKELL. Thank you, Mr. Secretary. I appreciate your appearing here and your statement and your definitive answers to the questions and your forthrightness.

Mr. LYNN. Thank you, Mr. Chairman, I appreciate it.

Senator HASKELL. Our next witness is Dr. Gordon MacDonald of Dartmouth College. In view of the time, I am going to ask myself or I will direct myself and ask my colleagues to confine their questioning on future witnesses to 5 minutes each, so Dr. MacDonald, if you will just proceed in your own way.

STATEMENT OF DR. GORDON J. MACDONALD, DARTMOUTH
COLLEGE, HANOVER, N.H.

Dr. MACDONALD. Mr. Chairman, Senator Bartlett, I am delighted to have the opportunity to discuss with you the important proposal regarding State environmental centers.

The development of the appropriate institutional base for the management of the environment has long been a deep concern of mine. It is, therefore, a great privilege to appear before you as a private citizen but one who has served on the first Council on Environmental Quality.

At the present time there are many Federal programs which provide financial support for environmental research, planning, and education, including those administered by the Environmental Protection Agency, the National Science Foundation, the Departments of the Interior, Agriculture, and Health, Education, and Welfare. In addition, to support more specialized work, such agencies as the Atomic Energy Commission through its national laboratories conduct extensive research programs on environmental matters.

Data collection designed to determine the present state of the environment has also received attention. For example, in the field of water pollution, the U.S. Geological Survey, as well as the Environmental Protection Agency, have substantial programs. With all of these undertakings underway, I think it is a fair question to ask whether there is a need for additional institutions performing some of the same functions now carried out under Federal programs. My answer to that question is strongly in the affirmative.

Federal undertakings are for the most part designed to provide information of interest to the programs managed at the Federal level. The needs of the individual States and localities are not of primary interest in most of the programs to which I have referred. I will return to this most important point later in my testimony.

With regard to education and training, much has happened over the past few years. For example, universities and colleges throughout the country now offer more than 50 degrees granting programs in the environmental area. Some of these programs are specialized and pointed toward developing technical competency in the sciences, engineering, and public health, while others are more broadly based and include research and education in policy analysis.

Environmental engineering prior to 1969 was very much limited in scope, but now several schools offer detailed programs emphasizing the design of pollution control systems.

Public health is not a new science, but it is undergoing a revitalization as a result of the renewed interest in the environmental area.

Such universities as the University of Georgia, the University of North Carolina, the University of Texas, and George Washington University have environmentally related educational and research efforts in the field of public health.

Certain universities have recognized their responsibilities to regional needs and have developed special programs designed to meet these needs. For example, the University of Tulsa offers a unique program on oil spill control while Kansas State University has a diversified undergraduate and graduate program dealing with various aspects of environmental biology as applied to the primary study of grassland ecosystems.

Despite these important advances, I believe further work within the university community is required if we are to adequately deal with environmental problems as perceived at the State and local level.

The President, in his February 8, 1971, message to the Congress, stated, "The solutions to environmental and ecological problems are often complex and costly. If we are to develop sound policies and programs in the future and receive early warning on problems, we need to refine our analytical techniques and use of the best intellectual talent that is available."

Recent legislative developments underline the importance of meeting the President's objective at the State level, as well as at the Federal level. I will refer to only three examples: the Clean Air Act Amendments of 1970, the Federal Water Pollution Control Act Amendments of 1972 and the pending legislation, S. 268, the Land Use Policy and Planning Assistance Act, which passed the Senate on June 21 of this year.

The two new laws and the proposed legislation all impose great requirements on the State. While these laws and proposals do provide for additional research efforts, these efforts are highly directed toward specialized problems. Questions such as how land use and pollution control are interrelated are not highlighted within the legislation.

In the last few weeks, we have read numerous accounts of the difficulties which the individual States have encountered in coming up with plans that would meet the national ambient air quality standards that were set in accordance with the Clean Air Act Amendments.

The water pollution control law and the proposed land use law place even greater requirements on the States research and training capacities. While the Federal agencies provide much of the needed basic data, the analysis of this data, in my view, should be carried out at the State level where it can be most directly related to State and local needs. While the environment is a global and national problem, it affects man where he lives locally.

I would like to illustrate this last point with a few examples. The water pollution law talks of nonpoint sources. The nonpoint sources vary greatly across the country according to the agricultural and livestock practices. The chicken farms and feedlots in New York State differ greatly from those in California. The use of fertilizers in both kind and method of application varies from the cotton farms in the southeastern part of the country to the great industrial cotton complexes of the West.

Acid mine drainage resulting from coal mining is a critical problem in a number of our North Central States, but coal mining in the Western States presents a different kind of environmental concern.

The problems of erosion and subsequent sedimentation in rivers affects water quality but again the problems differ from those States in which much of the erosion is due to suburban development as contrasted to the Western States where erosion can result from improper timber practices.

In all these cases, the individual States are in the best position to identify the nature of the problem and to carry out the research that would lead to solutions best suited to local conditions. Further problems of water pollution, air pollution and land use cannot be examined in isolation but must be treated in the overall environmental context.

The proposed land-use legislation does provide for grants to the State to carry out the planning functions required under the act. However, such plans cannot be developed in a vacuum but must be backed up by detailed research on the carrying capacity of the land, on its physical chemical properties and on the hydrology of the region. Again, the problems are going to differ across the country, and local institutions should bear the major responsibility for developing the required information and synthesizing it for policy development.

I can think of no better illustration than the State of Vermont which has passed a very sophisticated land-use-control law, Act 250. The difficulty in the implementation has been to translate data made available through a variety of Federal and State agencies into a form that allows the decisionmaker to determine priority uses of land.

I am certain that Vermont's experience will be duplicated in other States and that on the total intellectual resources of these States will be required if the lofty goals of S. 268 and the pollution control laws are to be achieved.

I hope my comments have made it clear that I strongly support the enactment into law of S. 1865. However, I do have a few of what I hope will be constructive comments with respect to the bill. First, I believe it would be a serious mistake to tie the Environmental Centers Act of 1973 to the National Environmental Policy Act. I would very much prefer seeing the Environmental Centers Act stand alone and not as an amendment to NEPA.

My reasons are twofold. The environmental centers concept is important in and of its own right. Second, in amending NEPA, you open up the possibility of further amendments, for example, from the floor of the Senate. NEPA certainly is not a perfect piece of legislation, but I believe it is of such importance that substantive amendments be made only after more experience is gained and detailed studies and hearings are conducted.

I also question the funding provisions of S. 1865. First, it seems certain that in order to carry out the provisions in the legislation passed by Congress the States will have to spend much more than a few hundred thousand dollars yearly in order to provide adequate research and training. While initially such a funding level set by S. 1865 would seem appropriate, the bill should carry some assurance to the States that 5 or so years after enactment the institution that they have developed in response to S. 1865 still receives support. I would, therefore, urge increasing the period of authorization to 5 years and to make the annual authorization for the 4th and 5th years of the bill \$20 million under section 307(a) and \$15 million under 307(b).

Second, if environmental research and educational institutions of the type envisaged in S. 1865 are to be truly responsive to the interests and needs of the States they serve, there should be provisions for strong State or local support and investment. The present provisions under section 307(b) seem to me to be totally inadequate, and I would strongly favor that all funds be made available on a matching basis.

The revisions made to S. 681, the National Environmental Centers Act of 1971, in preparing S. 1865 have greatly strengthened the proposal for State environmental centers. I particularly commend the tightening up of the administrative procedures at the Federal level in overseeing the act and the emphasis given to the importance of State initiative.

In summary, I very strongly believe that it is necessary and wise at this time to establish by law a system of environmental centers as is proposed in S. 1865. Through these new institutions, we can develop a research and educational base which will be truly responsive to State and local needs in implementing in a rational way, the environmental legislation developed at the Federal level.

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

Senator HASKELL. Thank you, Dr. MacDonald, first on your suggestion that the bill stand on itself and not as an amendment to NEPA. It strikes me as an appropriate suggestion. I consulted with a member of Senator Bellmon's staff and apparently Senator Bellmon would have no objection to that.

On your years of funding we are running into a problem in the Congress. We say that funding is going to go on for a great number of years. We have automatically built in a budget increase, so I do not know whether that is desirable or not. Let me ask you this. We heard testimony from Secretary Lynn that the bill would cause unnecessary duplication of existing programs. I gather that you do not share that feeling from your testimony.

Dr. MACDONALD. I certainly do not. I think I am very well acquainted with the programs to which he referred. They are, as I pointed out in my testimony, primarily designed to meet needs as viewed from the Federal level. I tried to illustrate in my testimony the local needs and these vary from State to State. I think there is a great need at the State level and working down from State level to local, county unit of government, to look at problems at that unit of government and work at them and provide the needed research base.

I do not think the Federal programs provide this at this time.

Senator HASKELL. I just have one more question. The bill attaches the center to an academic institution. It does not prevent participation by private and other academic groups. Do you think a center should be attached to an academic institution or should a flexibility be built into the group so that it might be attached to some private foundation? What is your reaction to that?

Dr. MACDONALD. As I remember the bill introduced in 1971, S. 681, did allow for that flexibility. I see no reason to necessarily attach it to an educational institution. I think in most States the educational institution would be most appropriate if we are to achieve both the research and training goals that are stated in S. 1865.

Senator HASKELL. But in some States, it might be better to do it some other way.

Dr. MACDONALD. I, personally, would like to see the flexibility that was included in this S. 681 to be included in the present version of the bill. Yes, sir.

Senator HASKELL. Thank you very much, Dr. MacDonald. For the benefit of my colleagues who were out of the room, I have asked each one of us if we can confine ourselves to 5 minutes because we do have quite a few more witnesses. Senator Fannin.

Senator FANNIN. Mr. Chairman, I would like to yield to Senator Bartlett, since we were out of the room for a few moments.

Senator BARTLETT. Dr. MacDonald, you testified 2 years ago in opposition to this legislation, I believe, and now, as I understand your testimony, you are supporting it. Would you tell me why the change?

Dr. MACDONALD. Three things have happened, Senator. First, the Senate has passed the Water Pollution Control Act of 1972. Second, the Senate has passed the Land Use Policy Planning Assistance Act and third, I am no longer in the administration.

In view of these three major actions, I strongly support the enactment of this bill at this time. I think the States do need help. I would also add that over the past year, I have been working for the State of Vermont in trying to implement their State land-use plan and it is quite clear that the resources available to this State at present are totally inadequate to translate what is, in my view, a good piece of legislation into actual fact.

We do need a greater research capability at the State level.

Senator BARTLETT. Do you also see at the State level and use Vermont as an example, of their point of view, particularly since they are from Vermont and close to what they are concerned with. Do you see some advantage in having research under that level, having this bill function at the State level as compared to direction entirely from Washington?

Dr. MACDONALD. Yes. The whole reason for my support of the bill is that it is intended to give to the States support for research at that level. As I tried to illustrate within my testimony, there is a very great need for research at that level. Again, referring back to my testimony, I think the work underway at the University of Tulsa on oil spill control is demonstrative of the kind of thing that can be undertaken that is of particular interest to a particular region and should be supported.

I think the Federal Government has the responsibility, having given the States these very great responsibilities under the Pollution Control Act and presumably under the land use law or proposed law, to back up these responsibilities with a capability for carrying out the research and training necessary.

Senator BARTLETT. Dr. Lynn's testimony, prior to yours seemed to be concerned with cost effectiveness, of the additional assistance provided in this bill, assuming that it would contribute little to the quality and results of existing Federal programs. Is not a characteristic of creative work such as research, its difficulty of measurement to determine in advance whether it is going to be worth the investment and what criteria should be considered.

Therefore, is it not at least equally likely that the work done may make a significant contribution to existing other programs.

Dr. MACDONALD. I think you make a very good point. It is very difficult to forecast in advance the cost benefit of any funds expended in terms of support of research and education.

I would argue that in this case the chances of coming up with a very favorable benefit-to-cost ratio is great because there is such a large gap in our information base. We do have a lot of data on, let's say, air quality that are gathered by EPA and certain of the State agencies, but remarkably little of it has been pulled together in an assessment to try to meet the goals set by the Clean Air Act amendment. The data is there, but who are the people who are really trying to pull it together, make some sense out of it and to make constructive suggestions for amendments or changes in the legislation. I think this is an important aspect that has just been neglected.

We have focused on specific programs—the Clean Air Acts amendment, the water legislation and proposed land use legislation—and have not yet begun to think of how these interrelate to one another. I think you have to do this at the State level, and I believe the provision in the law, taking into account my few comments I have as to appropriate amendments could accomplish this.

Senator BARTLETT. Thank you, Dr. MacDonald for your long testimony and Mr. Chairman, thank you.

Senator HASKELL. Senator FANNIN.

Senator FANNIN. Dr. MacDonald, I appreciate very much your being with us today and for your testimony.

Do you feel that academic interest might conflict with local concerns or would there be sufficient oversight of the research to the community?

Dr. MACDONALD. The way I read the intent of the bill and particularly section 306, it is clear to me that the enabling institution, whether it be the enabling institution or as Senator Haskell suggested it might be, another institution if the bill were amended, would have the responsibility of taking a larger look than the specialized research interest that so commonly prevails the academic. I think there are changes taking place. The fact that there are now 50 institutions throughout the country that offer degrees in environmental studies or sciences do have a problem oriented focus indicates to me that there would be a very positive response on the part of these institutions in developing research programs, that respond to the needs of the State and local communities.

Senator FANNIN. Looking at it from the standpoint of your statement on page 4 about "the last few weeks the numerous accounts of difficulties that the States have encountered in coming up with plans that would meet the national ambient air quality standards that were set in accordance with the Clean Air Acts amendment" and it goes on referring to other items.

Would such an environmental center, that we are talking about, protect local areas against unreasonable demands by Federal agencies such as what you have referred to in your statement? I am not saying you took a position one way or the other as far as your statement is concerned, but what I wonder is, would we be able to reduce the confrontations we have facing us between the local government, the State and Federal Government?

Dr. MACDONALD. I believe the present confrontation is in a sense on an unfair basis. The States do not have the resources available to them to come forward to the Federal Government and say the regulations you have imposed upon us are really unreasonable. What this bill does or would provide for is to provide that kind of research capability. There will always be a disparity in research capacities, but at least we are moving in the direction of evening out that disparity and I think that is very healthy.

Senator FANNIN. Some of the demands made on cities and other areas in States have been made, the cities claim, without sufficient study or determination.

In some of the States, such as Arizona, they say it is a question of how many motorcycles can be licensed and whether or not cars can be driven with fewer than a certain number of people or be driven in the lanes provided for buses.

Then, if you had a full car, maybe you could use that same lane.

Don't you think this is rather unreasonable to set out such policies without having some experience in regard to the results that may occur. If we have a fellow going to work at 11 o'clock at night, he will have a difficult time of driving his own car. Public transportation may not be available to him, but maybe he has a motorcycle or wants to buy a motorcycle.

Don't you think we should have some determinations of what would be the end result before running into programs of that magnitude?

Dr. MACDONALD. I could not agree more with you, Senator Fannin. And, that is why I support this approach very strongly. The kind of problem you point out is basically a local problem. The state of transit facilities varies widely across the country. In some places you do have publicly available mass transit. In many other places, you do not.

And, you do need some sort of provision or some way of determining not only what the meteorological conditions are, what the source of pollutions are, but long-term effects on the people. These effects affect our local efforts and that is why I make the statement in my testimony, environment affects man locally and I think this is an important point.

Senator FANNIN. I am satisfied we need some changes. I am not sure this bill gives us the changes we need, but certainly we should take a look at it, and delve into the matter to see just what should be done and can be done. Thank you very much for your testimony.

Dr. MACDONALD. I certainly think it moves in the right direction. We could argue about just what would be the ideal situation, but I think the States require very much greater capability in this area than they have today.

Senator FANNIN. I agree very strongly. Thank you.

Senator HASKELL. Senator Hansen.

Senator HANSEN. Thank you, Mr. Chairman. Let me join the other members of the committee, Dr. MacDonald, in welcoming you back here. I thought you certainly added a real measure of interest to the concern that is focused nationally on the Council on the Environmental Quality during your tenure on that Board. Your contributions were significant indeed. I have appreciated the response to the questions asked here and I do not think I have any further questions. I took too much time the first time around. Thank you.

Dr. MACDONALD. Thank you, Senator Hansen.

Senator HASKELL. Thank you, Dr. MacDonald, very much indeed. We appreciate your being here. Our next witness is Mr. Wesley Gilbertson, deputy secretary, Department of Environmental Resources of the Commonwealth of Pennsylvania. Mr. Gilbertson.

STATEMENT OF HON. WESLEY E. GILBERTSON, DEPUTY SECRETARY, DEPARTMENT OF ENVIRONMENTAL RESOURCES, COMMONWEALTH OF PENNSYLVANIA

Mr. GILBERTSON. Thank you very much, Mr. Chairman. As you have indicated, I am Wesley Gilbertson, deputy secretary for the Department of Environmental Resources of Pennsylvania.

I have recently served as president of the American Academy of Environmental Engineers and chairman of the Conference of State

Sanitary Engineers. At present, I am a member of the executive board of the American Public Health Association and the American Public Works Association.

These organizations are vitally interested, as I am, in improving the Nation's capability of solving environmental problems through research, investigations, demonstrations, and manpower developments.

I am pleased to present a brief statement on S. 1865. There is much merit in establishing environmental centers in the State which would provide a means of conducting applied and developmental research and of carrying out investigations on problem areas. In order to resolve current environmental problems and obtain compliance with accepted standards, frequently it is now necessary to use "best available technology."

Incidentally, this is a term that was introduced through congressional legislation as I am sure the Members will recall.

Usually, these techniques must be specially adapted to the particular situation at hand. Often new problems are encountered. I might interject here that very, very large expenditures are involved now, not only from the public domain but from private enterprise as well.

I think I should also point out that to some extent the application of standards such as the translation of the ambient standards, for example, in air pollution to emission standards is a somewhat empirical operation.

Based on this, it will be possible right at the present time to require expenditures of unneeded sums of money because sufficient information is not available on how to translate this under local conditions. These are the types of circumstances that can be aided by State environmental centers for applied research and investigation. Similarly, the application of research results would be achieved more promptly by a continuing program of demonstration projects which would be geared to local requirements and conditions.

I might say my experience over the past 35 years working the Federal, State, and local levels in the environmental fields clearly shows a great variation in actual local conditions.

S. 1865 would provide a means of supplying these needed activities. This legislation is directed at a problem-solving, cooperative, Federal-State approach. Far too much of recent Federal environmental legislation has been devoted to enforcement aspects and far too little has been directed toward the technical means of developing the needed satisfactory solutions. For that reason, S. 1865 represents a refreshing change.

I might point out, too, that some of the complicated questions relating to land use and other nondegradation issues, these are the kinds of things which are coming down the pike. It is true we have problems today, but I see even bigger ones ahead, perhaps even more complex.

Recently, I testified before another Senate committee on an environmental bill. In preparing my statement, I decided to review the recommendations of several national blue-ribbon study committees which studied environmental problems over the past dozen years. It was evident that more Federal resources must be directed toward the technical resources which will solve the problems. In fact, I pointed out to the committee that, if the needed emphasis is not available soon, we would probably have another committee in 1974 or 1975 which would be re-

peating the same points. For the information of the committee, I provided the testimony referred to, noting particularly pages 4, 5, and 6.

Senator HASKELL. Your submission will be included as part of this record following your testimony here.

[The testimony of Mr. Gilbertson before the Senate Commerce Committee appears on p. 65:]

Mr. GILBERTSON. Thank you very much. If you wish to have it, it is for your use. There are listed there some of the technical problems that have been cited over and over many, many times. I might say here that back in the midfifties, it occurred to me, too, that a series of centers, technically oriented centers with research and service-type functions would be a valuable means of accelerating the problem-solving activity and I made such a recommendation at that time, to my superiors.

Unfortunately, they did not follow that idea and I think at this point the committee is well advised in moving on this legislation. I should also like to point out with reference to the functions involved, I would like to call to the committee's attention an additional phrase that might be added, or should be added, in section 306.

I would like to suggest the addition of the words "environmental health" as part of the scope of interest. The reason that I mention this is that this goes back to the man-environment relationship. I think the bill's intent is broader than pollution control only and it certainly seems to me that with the changes that have taken place in the Federal structure, HEW seems to be sort of withdrawing or decreasing its emphasis in the environmental field.

In order to obtain expected benefits from this proposed bill, certain revisions should be considered. The expressed purpose of the legislation is to achieve more adequate environmental programs in the States and in regional areas. Unless the authorizing act specifies the necessity and the procedures for interrelating the center programs with and serving the State and local operating environmental programs, there will certainly be a tendency to take an independent course. The research and demonstration activities may become ends in themselves, rather than means to the ends.

It is suggested that, in the following sections, language be inserted to achieve this needed interfacing mechanism:

In section 307(b) (1) and (2)—Provide for certification of problem lists by the head of the State environmental agency for attention by the centers.

In section 309(a) (3)—Include in the Federal Environmental Centers Research Coordination Board a representative of a State environmental protection agency. In view of the bill's purpose, such representation would be at least as important as other groups mentioned.

In section 310(a)—make positive provision for consideration by the State centers of program recommendations from the State environmental protection agency.

It is noted that section 310 does provide, with respect to the State environmental center advisory boards, for representation from State environmental agencies. This is important and is strongly supported.

My recommendations relating to the three sections above, I think go to the point that was raised earlier in the hearing with reference to making sure that there is responsiveness to local problems.

On the question of funding, the bill provides for very modest levels. There are also certain State matching requirements. Undoubtedly, it will be necessary for the recipients to "gear up" over the first few years. Experience will provide a basis for judging the adequacy of the authorized amounts and the matching formula.

I think in general I would indicate that perhaps there is a need in many areas for regionalizing and grouping of States with similar and related environmental problems.

I also think it might be a good idea to have the bill or perhaps the legislative intent to indicate that there should be a fairly rigorous evaluation of the capability of the applying institutions and of the selection and scope, focus of program.

I think this would get at the point that has been brought up and I am sure is a concern to the committee, of the duplication question, whether this is in fact the type of thing that should be undertaken, and so forth. So, as I say, a rather rigorous evaluation by the administrator for purposes of determining whether there will be the follow-through, the emphasis and the kind of program that the committee envisages in the bill. Thank you.

[Testimony of Mr. Gilbertson before the Senate Commerce Committee, May 31, 1973, follows:]

PREPARED STATEMENT OF WESLEY E. GILBERTSON, IMMEDIATE PAST PRESIDENT, AMERICAN ACADEMY OF ENVIRONMENTAL ENGINEERS, BEFORE THE COMMERCE COMMITTEE, U.S. SENATE, ON PROPOSED DRINKING WATER LEGISLATION, MAY 31, 1973

The American Academy of Environmental Engineers appreciates the opportunity to testify on proposed Federal Drinking Water Legislation now being considered by your Committee. The Academy is composed of over 1100 of the most qualified environmental engineers in the Nation. Our members, certified as Diplomates, administer a large proportion of America's environmental programs, and design and operate a substantial number of our key sanitary facilities, including those in the field of drinking water supply. I am the Immediate Past-Chairman of the Academy, and I am Deputy Secretary for Environmental Protection and Regulation, Pennsylvania Department of Environmental Resources. In 1971-72 I was Chairman of the Conference of State Sanitary Engineers.

The Academy favors enactment of Federal Drinking Water Legislation of the general type before your Committee, but we believe that there has been far too much legislative highlighting of Federal regulatory powers and procedural matters, and far too little emphasis on essential technical research, development and manpower elements. We urge your Committee to rectify, in this legislation, the misplaced emphasis embodied in recently enacted Federal environmental statutes. We recommend, also, that the Congress do what it can to give top priority in the Federal program to the essential Federal role in research, development and manpower activities, through which sound solutions to water supply problems will be derived. Unfortunately, these vital elements have been downgraded and under-emphasized in recent years. We believe that protection of the public health and consumer interests will thus be best served.

In order to illustrate to your Committee the avoidable defects which have been creeping into Federal legislation, I will briefly identify some items which are being widely discussed.

Legislatively mandated deadlines enacted in the absence of foreseeable technical solutions to problems and without indication of costs or where funds will come from. (This is not to say that we shouldn't have targets and goals.)

Legislatively mandated technical criteria and standards which should be subject to revision with advent of new knowledge. (Such technical requirements should be adopted by the rule-setting method.)

Legislated procedural requirements which are excessive, do not contribute to problem-solving, but consume enormous amounts of precious staff time. This adversely affects State and local governmental programs particularly, but also industry and Federal agencies.

Legislated requirements for reporting to the Federal Government—often amplified through regulations promulgated by the Administrative Agency—which do not contribute to real knowledge, generally are duplicative of data already available, and often are far beyond what can be used effectively. Again, the wasteful diversion of staff resources for preparation of these reports slows down real progress.

Federal pre-emptive requirements which stipulate State program formats in great detail and are of doubtful significance, but which mandate Federal “take-over” if not strictly adhered to. Among many State Legislatures and Executive Offices the “threat” of Federal take-over is no longer an effective club. To some it might even be considered an opportunity—considering mounting costs and what some believe (rightly or wrongly) to be unreasonable and unrealistic Federal requirements.

We believe that good Federal legislation on Drinking Water can strike a better balance between the respective intergovernmental levels than recent Acts in other environmental fields. In order to achieve Federal-State partnership, or the “new Federalism”, we need to better define the respective roles. The most important Federal role in the drinking water field is to provide the technical basis for upgrading the quality of water supply operations, where needed, and supply desirable uniformity of quality standards. There is no crisis in the drinking water field—though there are localized serious problems. As for regulatory authority, the States generally have good basic powers, which are currently being used to the extent of available resources.

In the pollution control area, it has been argued that Federal powers must sometimes be exercised to prevent “pollution havens” and ensuing economic advantages, and to correct pollution from one State from damaging another. These points are absent with respect to water supply. The Constitutional basis for Federal Drinking Water Legislation would appear to lie in the theory of preventing the interstate spread of disease (Commerce clause) and “providing for the general welfare.”

Turning to the technical problems in the field of drinking water supply, for quick reference let me list a few problems needing research, from reports of recognized expert groups:

From Publication A:

The Behavior and Persistence of Enteric Viruses in Sewage-Polluted Water. Adsorption, Desorption, and Ion-Exchange (of Chemicals) in Ground Water Flow.

The Effect Upon the Domestic Consumer of Trace Chemical Elements and Compounds in Water Supplies.

Characterization of Tastes and Odors in Public Water Supplies.

Decontamination Efficiency of Water Treatment Plants for Various Radioisotopes.

Effects of Controlled Recreation on Terminal (Water Supply) Reservoirs.

From Publication B:

Viruses pass through sewage treatment plants, persist in contaminated waters, and may penetrate the water treatment plant. The development of an effective method of culturing the virus of infectious hepatitis represents the single most important task for research on water-borne viruses.

Referring to synthetic chemicals—we do not know how to remove them from water. Most important, we do not know the long-range effects of these synthetics on man.

We need to know much more of the effects of mineral salts, organic compounds, domestic and industrial waste components, as well as the etiological agents of infectious disease; and we need to know the effects of deficient trace elements, molybdenum, selenium, vanadium, nickel, zinc, and copper.

From Publication C:

Viruses, such as those of hepatitis, remain a problem.

Substantial contamination of ground water with nitrates from fertilizer may cause death of infants.

From Publication D:

Many water supplies do not meet the PHS Standards, but it is not certain that the Standards are meaningful.

From Publication E:

Long-range planning for water supply and waste disposal facilities should be closely integrated with other aspects of land-use planning and with larger metropolitan or regional plans.

Greater attention (should) be given to health aspects of the drinking water supply through initiation of a comprehensive national program which would provide for development and application of improved methods of protection against disease-producing organisms and chemicals.

Though the foregoing highlighted excerpts of research and development needs which have been urged by nationally known experts for Federal action may sound like "hot" reports prepared in 1972 or 1973, they aren't. A review of the following shows that they are long-standing needs—dating back to at least 1961.

Publication A—"100 Problems in Environmental Health": Prepared by a group of engineers and scientists under a PHS Grant in 1961.

Publication B—"Environmental Health Problems": Report of the Gross Committee to the Surgeon General in 1961.

Publication C—"Restoring the Quality of our Environment": Report of Environmental Pollution Panel, President's Science Advisory Committee, 1965.

Publication D—"Strategy for a Livable Environment": Report by the Linton Committee to the Secretary of HEW—1967.

Publication E—"Changing Environmental Hazards": Report of Task Force on Environmental Health, American Public Health Association, 1967.

My point is simply this: If the Federal program does not set up its priorities and direct its resources to researching and resolving these problems, we will probably have another report in 1974 or 1975 repeating the same recommendations. These scientific efforts would be non-duplicating, problem-solving activities. The problems cited can't be resolved by Federal directives, enforcement orders or court suits.

Establishment of a national program of research and development on water supply, using manpower resources of real professional stature should be the Number One goal of Federal legislation. The program should utilize, not only Federal, but all sources of research and development capability.

The principal inspection and enforcement powers should remain in the States and program grants should be provided to strengthen these efforts. In order to accelerate the national program of water supply inspection, testing, and enforcement, it will be necessary to provide program grants to the State agencies. One important reason for this is that State environmental program emphasis has been shifted away from water supply to pollution control by public pressure over the past decade and by the need to provide State matching grants for air and water pollution control activities.

We are aware that a recommendation has been made to finance the program through a system of charges to the local public water supply agencies and privately-owned public water supply companies. This does not appear to be a realistic approach. If the broad public interest requires more comprehensive surveillance of public water supplies, the Federal and State Governments should fund the program. Undoubtedly there would be great difficulty in obtaining State legislative approval of a levy against local agencies because of their opposition.

The American Academy of Environmental Engineers appreciates the opportunity of commenting on the national water supply issue. We will be pleased to answer questions or provide further information.

Senator HASKELL. Thank you very much, Mr. Gilbertson. Very, very thoughtful statement. I am particularly impressed by your suggestion that we really need technological research and assistance. It is all very well for us to declare standards but cities grew up, industries grew up and we had a different set of rules.

It seems to me it is incumbent upon us to give such assistance as we can. I have no questions. I defer to Senator Fannin.

Senator FANNIN. Thank you, Mr. Chairman. I agree, Mr. Gilbertson, we certainly pay more attention to the problems that exist at the local levels. You say there is much merit in the statutes of the environmental centers of the States which would provide a means for supplying these needed activities helping these problem areas.

But, I am really concerned when you say this legislation directed at problem solving, cooperative, Federal-State approach. Far too much of recent Federal environmental legislation has been devoted to enforcement aspects and far too little has been directed toward the technical means of developing the needed satisfactory solutions.

I am concerned with how much money we are spending and whether or not we will get results. Now, we had testimony from Secretary Lynn this morning that the present efforts of the Government in the area of environmental R. & D. are quite extensive and rapidly growing.

Funds for this purpose have grown from \$556 million for fiscal 1970 to \$844 million in 1972 and an estimated \$1,012 million in 1974. Now, it goes ahead and gives the listing for fiscal year 1974 and I am wondering if you feel that this is not a tremendous amount of money.

Mr. GILBERTSON. I agree with you, Senator. It is a lot of money, but I think what I was trying to indicate in my parenthetical statement was that even larger sums of money are being spent for solving these environmental problems. The issue I think we are talking about is to make sure, first, that these are needed, and second, that what is being spent is being spent in the best possible way.

Senator FANNIN. That is my concern. That is why I asked you the question. I feel the amount of money being spent certainly should be adequate, and if we are increasing to practically double the amount in two sessions of Congress from \$566 million to \$1,012 million with \$590 million of that for pollution control abatement, which should come in the category we are talking about.

I realize some of the money could be in specialized areas. \$160 million for observing and predicting weather and ocean conditions. There are quite a few areas, but we get down to the largest amount involved and this is in the area which we are discussing. Do you feel there should be a realignment of some of these expenditures?

Mr. GILBERTSON. I think what we are talking about precisely is this. It seems to me this bill, particularly, is directed at encouraging and supporting the kind of research and technical work and developmental work which is unique to the particular area in the State or region, tackling the problems that are in that area.

I suspect that generally speaking the encouragement of more basic fundamental research would be done through other mechanisms, although they may be done at these centers, the financing of them apparently is not to be part of this particular package.

I think what I am saying here is we are now confronted with implementing, not only Federal legislation but State laws as well, the standards and regulations that have been adopted pursuant thereto, of coming up with the very difficult intermix of the various pollutant questions, what is air, what is solid waste, all of which seem to be tugging in different directions or pushing in different directions. The land use and energy issues, all of these will have to have basic research and they will also have to have applied and developmental work to fit them to the local scene, so I think what we are talking about here basically is a more comprehensive array of mechanisms to work on these problems.

Senator FANNIN. I feel, perhaps, we should investigate with the Department what is being accomplished. We perhaps need a better co-

ordination of effort, but I doubt whether the amount of money is insufficient when we talk about the increases that we have had in recent years. Thank you very much for your testimony.

Senator HASKELL. Senator Hansen.

Senator HANSEN. Mr. Chairman, I do not think I have any questions. I appreciated those that were asked by Senator Fannin. Possibly, just one. I think you were here, Dr. Gilbertson, when Assistant Secretary Lynn made his presentation.

Mr. GILBERTSON. Yes; I was.

Senator HANSEN. Do you feel he identified in his statement the major areas of concern insofar as the improvement of the environment goes?

Mr. GILBERTSON. The major areas of concern with respect to the substance or are we talking about the administrative questions?

Senator HANSEN. No. I do not mean how well they may be administered, but did he identify the major areas of concern insofar as the improvement of the environment goes?

Mr. GILBERTSON. Well, I did not get the impression that he tried to be that comprehensive. My understanding of his questions were primarily concerned with the administrative questions that came up, duplication, the interrelationship between these centers and the Federal research institutions and things like that.

Senator HANSEN. Well, as I recall, he spoke about the activities of the Geological Survey, the Bureau of Sports Fisheries and Wildlife, dredging activities, nuclear, thermal and hydroelectric power projects, major water resource developments, and about coal research. Do you think, in general, these touch upon the major concerns that we have?

Mr. GILBERTSON. Yes. I think in a broad sense. However, I think I did make note in my testimony of the need to look beyond the question specifically of pollution and look into the other types of man-environment type problems. I believe I recall Senator Bellmon, in his opening statement, entered on the relationship of housing, for example.

This is another kind of environment. It is our living environment. There are other questions, the whole area of synthetic chemicals and so on that might be added to that list.

I think, too, and I want to make a little special point here that most of the discussion in the hearing this morning has dealt with the Federal-State interrelationship. I want to make a special point, the local official, the one that is there day after day, battling it out, trying to work out the problem needs help.

I think, in order to provide this, we have to work out more resources so we can help him out more. I work a lot with the people who run these authorities. For example, the sewage authority. I say they are some of the most dedicated and thankless job—dedicated people for a thankless job that you could possibly get. It is the same way, I suppose, with a lot of the companies. The companies, I think, are changing their views in many ways. The profit margin sheet is still a very important thing, but there are a lot of companies that are trying to resolve these issues.

I am working with some of them on a day-to-day basis and some of these things are pretty tough. I think we have to give it to them and help them out.

Senator HANSEN. Thank you very much. Thank you, Mr. Chairman.

Senator HASKELL. Thank you Mr. Gilbertson. I am very interested in Senator Hansen's line of questioning. Can you, as a representative of Pennsylvania, you have given a couple of specifics. Can you give a couple more specific examples where you think the centers contemplated by the bill would be of assistance that is not now provided at the Federal level of expenditures that were detailed on Mr. Lynn's testimony?

Mr. GILBERTSON. Well, I sort of referred very briefly to one in my testimony. This one that we are facing right now. We have to translate the Federal ambient air standards into emission requirements. When we make that translation, we are doing it in the context of a local situation. It is not—it is pretty tough in water pollution, but it is even tougher when you are dealing with air, because air goes one way, one day and the other way the other day.

You do not have a confined stream. The meteorological conditions are much more difficult and hard to predict. We know less about the chemistry of what happens and so forth, so we are faced, of course, with the problem of trying to translate these ambient standards back into emission requirements.

We are having to do it in a very limited amount of time. As a result, I am sure that we tend to blanket over situations that could receive a lot of benefit from more detailed study. That would be one example. Another one, I can assure you, is coming down the pike in great volume and that is the whole problem of what we are going to do with the tremendous amounts of solid residue, some people call them sludges, that are resulting from the better cleanup of the air and water. These are all kinds of materials. Gunk is a pretty good word for it, which we are going to have to deal with some way.

Senator HASKELL. This would be a local problem.

Mr. GILBERTSON. Yes. These all have to be done locally.

Senator HASKELL. Thank you very much, Mr. Gilbertson. I think you have added a great deal to our hearing.

[Subsequent to the hearing Mr. Gilbertson submitted the following information:]

COMMONWEALTH OF PENNSYLVANIA,
DEPARTMENT OF ENVIRONMENTAL RESOURCES,
Harrisburg, Pa., July 31, 1973.

HON. FLOYD K. HASKELL,
Committee on Interior and Insular Affairs, U.S. Senate, Dirksen Senate Office Building, Washington, D.C.

DEAR SENATOR HASKELL: During the Committee hearings on July 30, 1973, on Senate 1865, Senator Bartlett handed me two written questions after my testimony. I am pleased to furnish the questions and my answers for the record, as directed by the Chairman.

Question 1: A number of Federal laws have imposed environmental standards on States and localities. Is it the gist of your testimony that environmental centers would be valuable in assisting the States in developing the technology and methodology to comply with the Federal Standards?

Answer: Yes. The general policy, as expressed in most Federal environmental statutes, is that the primary responsibility for carrying out the implementation and enforcement rests upon the States. Broadly speaking, this means that the States must formulate implementation plans and conduct monitoring, inspection, laboratory and other technical activities on a wide range of problems in a variety of local situations. The Environmental Centers would provide a resource for developing technical approaches. The technical data could also be used by industry and local government.

Question 2: Do you feel the bill as written provides adequate independence for State Centers—and adequate input or control of research programs by the States?

Answer: In my testimony I suggested three revisions in the bill to aid in assuring responsiveness to States' "operating" needs in programming research and studies by the Environmental Centers. This input is important in keeping the studies closely aligned with actual problems, as perceived by the State Environmental Agency.

With regard to the bill's provision for independence for State Centers, it would appear that the language does not mandate the Federal Administrator to require specific programs or other arrangements. However, considerable latitude is available to the Administrator in adopting regulations for implementing the Act. Since there is no policy direction in this portion of the bill, the Administrator would be free to prescribe detailed requirements which could limit the independence of State Centers.

I appreciate the opportunity to testify on this legislation.

Sincerely yours,

WESLEY E. GILBERTSON,
*Deputy Secretary for Environmental
Protection and Regulation.*

Senator HASKELL. Dr. Richard Schein, from Pennsylvania State University on behalf of the Environmental Centers Advisory Committee of the National Association of State Universities and Land Grant Colleges.

**STATEMENT OF DR. RICHARD SCHEIN, PENNSYLVANIA STATE
UNIVERSITY, UNIVERSITY PARK, PA.**

Dr. SCHEIN. Thank you, Mr. Chairman. I am here to read a statement to you which was prepared by Dr. Roy A. Young, who is vice president for research and graduate studies at Oregon State University.

He has been a chairman of an ad hoc committee on environmental research centers.

Senator HASKELL. Dr. Schein, if you would care to, it would be preferably satisfactory for you to highlight it and submit the entire statement for the record.

Dr. SCHEIN. Yes. I realize it is late and I will be quite happy to do that.

Senator HASKELL. We will include the entire statement for the record.

Dr. SCHEIN. The first paragraph simply says that we have had a committee that has been working on this for some time and we have looked at various aspects of this from the viewpoint of people and State universities and land-grant colleges, which might become the State environmental center should this act come into effect.

Generally, we support this bill. We have made a few suggestions and on page 2, items 1 and 2 are two major suggestions which our committee would make to you. That is we feel matching funds should be required from each State in order to assure appropriate State interest and participation in the State environmental centers program. We even go to the extent of suggesting there should be a match of 1 State dollar for 2 Federal dollars. I do not believe the 1 to 2 is as important as it is we want to indicate that very strong State support should be in evidence.

The second item is that we feel the advisory committee to the administering agency should be broadened and should include representa-

tives from participating State universities, as well as from Federal agencies.

In other words, we feel the advisory committee is too small and not sufficient a representative.

On page 3, the second paragraph makes another substantive suggestion, in which we say that to insure proper coordination of current programs and of activities developed under the proposed legislation, we believe there must be representation from States on the proposed Environmental Centers Research Coordination Board.

We think this is an omission. There should be rather strong evidence of State involvement in the considerations and decisions of such a board. I think that perhaps speaks to some of the concerns voiced by members of the committee this morning.

The next paragraph also is a substitute suggestion, in which we say that we believe there should be representation on this Board from the National Institutes of Health, the Department of Interior, and the U.S. Department of Agriculture for the simple reason that these agencies currently support extensive environmental programs in the various States and regions.

The committee has expressed great concern this morning about redundancy of effort, cost benefit, this sort of thing. This suggestion is directed toward those same kinds of concerns.

The last paragraph on page 3, I think, speaks to another item which the committee has been concerned with this morning. We feel that the administrator of the Centers Act would have discretionary powers as the act is now written. As the act is now written, the administrator of the Centers Act would have discretionary powers which could override State priorities without consultation or appropriate advisory opportunities. The committee has come across this itself this morning so I think we are here just emphasizing and underlining a concern which you are already aware of.

In the last portion which I do not think we need to read has to do with the amount of funds. We share Dr. MacDonald's viewpoint that perhaps the funds are not really sufficient to do the job. If I could, Mr. Chairman, I would like to make one short statement on my own behalf, if I may.

Senator HASKELL. Certainly. Absolutely.

Dr. SCHEIN. In the Pennsylvania State University, I act as the coordinator in environmental affairs for research education and technology and public service.

I have been interested in this bill since its genesis some 3 years ago. I feel very strongly that legislation of this type would take care of several problems which we have in State universities like my own which have large ongoing environmental programs and we cannot do everything that we feel very strongly we should be doing, not just think we want to do, but things that need doing.

One of the things that we often cannot do is to take the initiative to get at a problem that we know exists, a problem which is a State problem, that is, it exists largely within our own boundaries.

You used the word "local" this morning. It is one that is ours. If we know it is there, we know it needs to be attacked. We perhaps even have the people to do it, but we do not have the ability and the funds available to make the decision to go at it right now.

If I could give you a personal example, part of my background and training is in agriculture. When I came to the Pennsylvania State University, I was asked to undertake the task of developing a disease resistant barley for the dairy industry in Pennsylvania. Had I had to apply for Federal grants on a year-to-year basis in order to develop a disease resistant barley, I think you can well understand probably this program would never have been initiated and certainly not executed, but under the Hatch Act which was referred to by Senator McClure this morning, the local initiative and funds were there in the agriculture experimental station.

I had to know the day I took up that job that the money was going to be available for some 5 to 8 years. I would not be able to complete it because of that local initiative we were able to go ahead and solve that problem. For over 10 years that barley was reproduced and has been growing on a quarter of a million acres in Pennsylvania as an example of what local initiative can do.

We are also concerned about problems in the long run. When we go to a Federal agency, we have to give them a 1-year, or 2-year or 3-year project. So many of the problems which need to be worked on are not ones that can be done in that period of time. In many cases, they are not problems where we can really predict what we are going to be doing in 2 or 3 years. A result is that it is very difficult for us to get these initial funds in order to start something which we know needs to be done, but which as a matter of fact we cannot define perfectly, because we do not know the dimensions of the problem perfectly. I think this possessive initiative and continuity of funding, the confidence which can come through a State environmental center knowing that it has continuity of funding, and that if it starts a program today that it can keep that program going for several years and not have to continually come back to the Federal agencies, as I think is implicit in this statement of Secretary Lynn's this morning and which, as a matter of fact, was very strongly a statement of Dr. MacDonald when he appeared twice 2 years ago as a member of the Council of Environmental Quality.

We cannot depend on Federal omniscience. We cannot depend on Federal sensitivity to local problems. I think those are some of the points which Dr. MacDonald wanted to make. We have to depend on local and State sensitivity and we have to have the wherewithal within the States to be able to get at these problems when we identify them.

[The prepared statement of Dr. Young follows:]

Comments on S. 1865

A bill to amend the National Environmental Policy Act of 1969 in order to encourage the establishment of, and to assist, state and regional environmental centers.

(Introduced by Senator Bellmon on May 22, 1973, and referred to the Committee on Interior and Insular Affairs.)

I am Roy A. Young, Vice President for Research and Graduate Studies at Oregon State University, and chairman of an ad hoc committee on environmental research centers appointed by the National Association of State Universities and Land-Grant Colleges. My comments are made as a representative of the committee. A list of the membership of the committee is attached.

Our committee has carefully and thoroughly reviewed the various bills relative to national and state environmental centers that have been before the Congress over the past two years. We have also considered types of administrative organizations, size of operating staff, types of programs, and the level of support required for meaningful state environmental center programs.

The committee has concluded that properly conceived and administered state environmental center and regional center programs that recognize and cooperate with currently active environmental programs in the various states would be of value, particularly from the standpoint of coordinating and providing continuity to state programs.

Programs under the Environmental Centers Act should be organized and administered to take full advantage of the extensive environmental research, education, and extension programs presently conducted within states and

regions by state universities, agricultural experiment stations, the Environmental Protection Agency, the U.S. Department of Agriculture, and other agencies.

After considering the Baker bill, S. 1113, the Bellmon bill, S. 681, Title II of H.R. 56, H.R. 35, and S. 1865, the NASULGC committee on environmental research centers has concluded that if the state environmental centers are to function most effectively, the following changes should be made in the environmental centers bill:

1. Matching funds should be required from each state to insure appropriate state interest and participation in the state environmental centers program. A match of one state dollar for two federal dollars is recommended on all appropriations.
2. The bill should provide for an advisory committee to the administering agency that would include representatives from participating state universities, as well as from federal agencies.

Since the original Bellmon bill, S. 681, was submitted, the Environmental Protection Agency has signed a memorandum of agreement with the U.S. Department of Agriculture to provide for the Cooperative Extension Service to offer educational and training programs for the Environmental Protection Agency. State extension service units are working with EPA regional offices in transmitting environmental information to the public in much the same way they worked for many years with state universities and agricultural experiment stations. The significance of this action in relation to the intent of the state environmental centers bill should be considered carefully. Our committee is concerned that unless there is proper liaison between

universities, state agencies, and the federal agency responsible for administering the program, the new legislation may be in competition with, or could be detrimental to, the environmental programs that are currently in effect at state universities and state agencies. Very extensive environmental research and education programs of many times the magnitude of the support proposed in the legislation are under way at most state universities as well as at a number of private institutions.

To insure proper coordination of current programs and of activities developed under the proposed legislation, we believe there must be representation from states on the proposed Environmental Centers Research Coordination Board.

We also believe there should be representation on the Coordination Board from the National Institutes of Health, the Department of Interior, and the U.S. Department of Agriculture, since these agencies currently support extensive environmental programs in the various states and regions.

One of the objections raised by President Nixon's memorandum of disapproval on H.R. 56 was that the "center approach ignores competence and available capacity of already existing institutions." There is a danger unless a mechanism is provided whereby representatives of state programs have a direct input into planning and development of national policy and operational procedures of the state environmental centers program, that competitive or duplicating programs may develop, or at the very least that maximum advantage may not be taken of programs that are under way.

The administrator of the Centers Act would have discretionary powers which might override state priorities without consultation or appropriate advisory opportunities. This arrangement could cause university programs to adapt themselves to programs not in their best interests or to lose

support. Ideally the legislation should allow each university to develop an administrative scheme consistent with its other programs, functions, and operations. Legislation must supplement and take advantage of existing support for environmental programs. The committee has studied several models of how programs might be conducted within different states. Among those considered were programs in Colorado, Florida, Michigan, Oklahoma, Oregon, Pennsylvania, and Washington. We anticipate that centers in these different states would be administered quite differently to take advantage of programs that are currently under way and of expertise that is available.

We are concerned that the funds to be made available to each state under this act are insufficient to carry out the intentions of the act. After administrative costs have been met, the proposed amounts of money for research probably could serve only as seed money. Development and continuation of programs initiated would depend on the availability of other support. This will detract materially from the ability of the center to carry out its primary mission of identifying state needs and initiating programs to meet these needs. Our committee strongly supports the premise that additional research on environmental problems is needed. They support the general concepts of the Bellmon bill, but believe certain changes should be made to insure maximum coordination of efforts at state, regional, and national levels. Care must be taken to insure that the programs proposed by the act are not just an additional effort that may not relate to and take advantage of current state and federal research, education, and extension efforts.

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Senator HASKELL. Thank you very much, Doctor. You have given a very thoughtful presentation. You made a remark in your prepared testimony on matching funds. The bill starts out with a grant and goes into matching funds.

I think that matching funds from the beginning might be a very good idea because we do not want centers started out just for the heck of it so to speak. We want to be sure that the States are thoroughly desirous. Is that your reason for making that recommendation?

Dr. SCHEIN. Yes, sir, it is. If I may answer your query personally, rather than for the committee, or if the record would show that because I cannot speak for the committee, I might repeat something that I said this morning. The National Association of Land-Grant Colleges and Universities has appointed a committee to study the State environmental protection act and of their administration. It was logical they would draw that committee from universities that had strong environmental programs.

As a result, they have also gathered together several times here in Washington to consider this legislation, looked at it from our viewpoint where all universities that have had environmental programs have research education and public service for many years.

We would not want to undertake this coordination. We would not want to take on these extra duties which are here unless there was very, very strong evidence of State support.

Secretary Gilbertson, who appeared just before me, it would be ridiculous in the State of Pennsylvania, if my university were to be designated a center for us to go to a statewide coordinated effort without the full support of Mr. Gilbertson's department and of his secretary of the Governor of the State and the legislature.

It should be understood in the State and the State interest should be there from the beginning, but if I can go back and recall some of the comments of Senator Bellmon, when Dr. MacDonald appeared in 1971, Senator Bellmon responded to some of Dr. MacDonald's remarks at that time. One of Senator Bellmon's remarks was, "what about the States that do not have anything, what do we do for them?" I think that Senator Bellmon, I must not speak for him, but he certainly showed that day his great concern to have this legislation provide a way for those States that want to get going on something, but do not have the background of history that some others have that this legislation would provide the initial grant fees to allow them to get something going. So, I would like to make those two viewpoints.

Senator HASKELL. Thank you so very much indeed. You know the bill provides a coordinating board directed to avoid duplication of programs. Now, we can never guarantee that there would not be duplication of effort, but do you have any suggestions for perhaps helping us along that road or are you satisfied with the language of the bill?

Dr. SCHEIN. I do not think I can give you direct language. I can only perhaps relay to you something that was discussed at considerable length in the committee. That is that a good many of us came from land-grant universities and, therefore, had long experience with the U.S. Department of Agriculture, Cooperative Extension Service.

The cooperative coordinator liaison arrangement that exists between the State universities and the Department of Agriculture and I think there is a wealth of some 50 to 60 years of experience there in the opera-

tion of local centers for research and education of public service that well could be emulated in this bill, and which Senator Bellmon says, as a matter of fact, was part of the idea, but in getting a Coordinating Board, I think it might be well to look at how the Department of Agriculture, in the past, has coordinated these 50 statewide efforts, which it has done.

Senator HASKELL. In other words, let's not reinvent the wheel.

Dr. SCHEIN. Exactly.

Senator HASKELL. Thank you, Doctor, very much. Senator Bartlett.

Senator BARTLETT. Mr. Chairman, thank you very much. I would first like to comment on Secretary Gilbertson's remarks and compliment him. I was out of the room when it was my turn to question. I did hand him two questions, Mr. Chairman, that I would like to ask that Secretary Gilbertson answer those in writing for the record.

Senator HASKELL. By all means and the record will stay open for 14 days to allow that to occur.

Senator BARTLETT. I would also like to compliment Secretary Gilbertson on his emphasis directed at problem solving. I think this is shown up as the real concern with the tremendous amount of energy that is needed and the solution of some of our environmental problems. So, when we do not have sufficient means of controlling it, such as the emissions standard equipment now available on cars, it helps create and compound other problems. So, I compliment him on that and realize there are the same level of problems at the regional and local level.

Dr. Schein, I thank you for being here and also for your comments.

Dr. MacDonald, in his testimony, said he would very much prefer seeing the Environmental Centers Act stand alone and not as an amendment to NEPA. Would you agree or disagree with that statement?

Dr. SCHEIN. Again, sir, I speak personally and not for the committee. I will express my personal concern for having State environmental centers of which there could ultimately be 50, but in the beginning, there would probably be fewer.

Having those necessarily fly under the flag of the Environmental Protection Agency, which they would do as it is now written, and if this was put through as an amendment to NEPA; my concern is not that I do not think they can do it. It is that it is a new agency which does not have that experience, which I just delineated that the Department of Agriculture has and might say, the Department of Interior has similarly on arrangements with the academic community which is good experience.

As an administrator of an environmental program at a university, I would be much more comfortable working with, perhaps, an independent, a new independent, agency in Washington. Perhaps, created especially for this purpose, incorporating some of these suggestions which we have made here for the purposes of representation from the States and for coordination for the identification of priorities and elimination of redundancy. I would not like to see the program which I try to oversee at the Pennsylvania State University run any risk whatsoever of losing its own initiative and priority to the Federal Environmental Protection Agency. That would worry me very much.

Senator BARTLETT. Dr. Schien, Secretary Lynn suggested to you the university may not be the best place for environmental research.

Would you care to defend yourself as a representative of a major university?

Senator HASKELL. Would the Senator yield? I do not think he said no university. He said there might be some other place that would be better.

Dr. SCHIEN. I am really not going to say that universities are the home of reason.

Senator BARTLETT. What I meant to say was the universities might not be the best place.

Dr. SCHIEN. Let me make one comment that I hope will be helpful. Somewhere in our society there has to be a cadre of people, a body of people, who can look at environmental programs in the most disinterested way that is possible. That is, in a way that is for the benefit of the country and for the benefit of the people, and not necessarily for the benefit of the adversaries in any particular environmental conflict.

Of institutions in our society probably the universities, because of their long tradition, come closer because of their traditions of scholarship, of professing that kind of third party disinterest than any other institution in society.

For that reason, I think in the long run with, of course, some strong adaptation to apply problems on the part of universities which would be necessary, but from that viewpoint, I think we can look forward in the next decades to universities extending this attitude which they have toward problems of national need and looking at it from the viewpoint of one of the people, which is to say, looking at as many of the facets of the problem as there are and not looking at it only from the myopic viewpoint of the adversaries of a problem, and the need to have such institutions as that in our society.

For all those reasons, I think universities are appropriate. I would hasten to add, however, that this legislation would cause universities to some things which are not exactly in the tradition of universities and I think where Mr. Lynn talked about the integrity of the universities, I am sure there were many times when universities would have to go through a sort of soul searching to see whether or not the role that was cast on them was indeed really appropriate to the university, and in the best interest of the universities of this country in the long run, but I do not think those are insoluble.

Senator BARTLETT. Dr. Schien, I thank you for the information you presented and also for your personal observations. I would like to add to the comment you made that Senator Bellmon, 2 years ago, was concerned also with those areas and those universities and those States which did not have the background and knowledge in the environmental area, acquiring as much knowledge as they possibly could.

I believe, Mr. Chairman, that we added to the land use bill as far as the research end of it was concerned. Some research and development moneys and stated that point as to whether the money should go solely to those areas or those universities of known expertise or should it be just distributed to those that obviously did not have the expertise. I think it was the conclusion of the committee that it should go to all areas to be of importance to every area which I thought was a rather significant point, so I appreciate that.

Dr. SCHIEN. Dr. MacDonald said this morning that we have to increase the ability at the State level, to handle these problems.

One way to do that is to get a greater geographical distribution of this expertise, but of course, we must not do it at the loss of expertise in places where we have it now.

Senator HASKELL. Thank you, Doctor. I think you have made a very significant addition to the hearing record and I appreciate it. Our next witness is Dr. John Gibbons, director, Environmental Center, University of Tennessee.

STATEMENT OF DR. JOHN H. GIBBONS, DIRECTOR, ENVIRONMENTAL CENTER, UNIVERSITY OF TENNESSEE

Dr. GIBBONS. I want to thank the committee for inviting me to testify. They say that starvation heightens one's intellectual perception. I hope that works for me.

If it is agreeable to the chairman, I will simply highlight this statement.

Senator HASKELL. I would appreciate it and the complete statement will be included in the record.

Dr. GIBBONS. One of the central questions in this legislation, it seems to me, is how to use, but not subvert the universities from their traditional missions and yet use the resources that are inherently there in helping answer some of our pressing national environmental issues.

There are two problems with this. First, there is usually no mechanism or strong incentive that serves to draw experts together from various disciplines in a university to work on complex problems such as environmental pollution.

These problems certainly require interdisciplinary approaches.

Second, there is usually no mechanism to link existing latent interest to work on socially relevant research and to communicate the results of such efforts into regional, State, and local government as well as commerce.

As a consequence, important potential resources, many of them resulting from federally funded research, are not utilized and relevant information is not transferred to those who need it in trying to solve State and local problems.

Many of these problems in a sense have been directed from the Federal legislation to the States. I have worked at Oak Ridge National Laboratory in the past and I have only recently joined the university, so I see this from the point of view of one who has worked in one of the large Federal laboratories, as well as one now involved in an environmental center of a university.

I have found it very difficult to work directly from a large national laboratory with State or local government. There are some tensions there.

There is a consequent need for the third party, the neutral crowd.

In my testimony that follows, I outline an interdisciplinary project that was tried out at the university, an interdepartmental, in fact inter-scholastic program on coal research that the university found, at least at first order, very promising.

As a result of this, a further commitment was made to problem-focused research by the university board's trustee in early 1972. It established a center under a joint sponsorship of the graduate school and the Institute of Public Service.

This reflects the land-grants college's responsibility, not only for instruction and research, but also for service. This center began its operation late in March of this year when I came onboard. An important concept added in the creation of the center was that it was not only to be the focus and coordination point for environmental research at the university, but it was designed to commit half of its efforts toward assisting State and local government and other constituents of the university with their particular problems. This just added responsibility, research and public service, provided on the one hand a mechanism for research priorities to be influenced through confrontation with actual current local problems and on the other hand, it provided a mechanism for which the great variety of expertise existing within the university could be sorted out and brought to bear on problems through the brokerage function of the center.

It needs stressing at this point that interdisciplinary centers must be designed and developed very carefully if they are to be acceptable overlays onto the basically disciplinary organization of the university.

I outline a few of the things one has to be very careful of in organizing such a center. I would like to give a few examples or vignettes of some of the things we have done over the past 4 months in an attempt to highlight why I believe such centers are potentially very important and very cost-effective.

Page 4, particularly, in my testimony outlines some of these. Let me emphasize a couple for you. Nos. 2 and 3 show the way the center affects or can be a resource to the faculty and students, particularly the graduate students in identifying and focussing on those problems that are in fact the real problems of environment. It enables them to, as it were, level their own research choices to those places that are of greatest need.

Items 4, 5, 6, 7, each are examples of where the center, either through its own initiative or by having been recognized as a potential resource base within the university, has been able to assist States and local government in answering some of its very pressing, immediate problems, as well as assisting the State in preparing, for example, to be able to respond most effectively to the potential land use legislation now before the Congress.

Item 8 indicates that the center is a mechanism through which the university in the sort of neutral ground can cover the great resources of public agencies such as the Oak Ridge National Laboratory and the Tennessee Valley Authority and supply mechanisms through which their expertise can be applied in local and regional situations that otherwise, in my experience have not been easily possible.

From these examples, I think our center can be viewed as a prototype of the center that is called for in S. 1865. It should not be surprising because they modeled partially after the earlier forms of this legislation. During our shortest area of operation and that has just been since the end of this past March. We have every reason to be optimistic about the leverage such centers can have if a proper orientation can be maintained of their pace in the university's life and of their responsibility to constituents outside of the university, then we make several general conclusions about what the center should or should not be on the bottom of page 5.

I think, for example, that number 3 which relates to the administrative vocation of the center within the university is important and in answer to some of the concern expressed by Secretary Lynn.

I think under number 6 such a provision would also help to insure that the expenditures made at the center would be truly relevant to State problems. It strengthens the influence of the advisory board called for in section 310 which I think is a rather important part of the bill.

I would anticipate that given 2 or 3 years of support through this kind of proposed legislation, these States would be persuaded, if the centers are successful, to consider the increase and not assume the full burden of the cost of such centers.

The following pages then give some specific recommendations concerning the bill. I would like to highlight that I believe under section 305 that full-time staff appointments should really be temporary and jobs specific in order not to compete with normal faculty appointments of the university.

It would also provide an extremely appointment area for the university to extend its traditional instructional programs into the area of postdoctoral research in which a person having received his disciplinary degree would learn in a problem-focused area how to apply that discipline along with others, to a particular, social, technical problem. It would make him a much more valuable person in a public service.

I believe, also, under section 306, that it would be interesting and I think important to introduce into the legislation the notion that, for example, at least one-third of the funds flowing through the center would be spent outside the campus on which the center is located. This would nudge the center to look constantly and carefully at other resources within the State or region, in carrying out its program.

I believe in section 307 one should probably add, in addition to the areas in which there is high environmental impact or degradation, one should add a clause which would focus attention also on it, the presence of areas of high environmental importance which were not maintaining their high environmental quality. That is the idea of non-degradation. Special areas should be incorporated in that legislation. We would be remiss in not adding our feeling, it would not be a challenge to establish an adequately maintained environment center for each State that successfully carries out the intentions of this act.

It is considerably more difficult to envisage at this point in time the establishment and practical operation of a multi-State environment center, but we believe the bill displays both charity and foresight in providing for the possibility. If we can assist over the next several years the individual States to face their environmental problems with a requisite level of sophistication, then interstate and regional problems will be that much more easy to attack and coordinate.

The very existence of designated State centers will certainly promulgate the interstate cooperation and coordination.

I want to thank you for inviting me to give this testimony today. I believe we have learned about our own work that the provisions contained in the act, can and will enrich substantially the capacity of educational institutions to meaningfully participate in problem solv-

ing and encourage the vitally needed synthesis and communication process between those who generate knowledge and those who have to apply it to problems.

[The prepared statement of Dr. Gibbons follows:]

PREPARED STATEMENT OF DR. JOHN H. GIBBONS, DIRECTOR, ENVIRONMENT CENTER,
UNIVERSITY OF TENNESSEE

My name is John H. Gibbons. I am director of the Environment Center at the University of Tennessee. A short biographical sketch is appended to this memo. The purpose of this testimony is to relate some experiences we've had in the University of Tennessee Environment Center that give evidence that the concepts embodied in S1865 are timely, workable, and potentially highly productive in helping regions, states, and localities achieve and maintain environmental quality. Some specific recommendations relative to the bill are presented in the text.

This testimony was prepared in cooperation with Dr. F. Schmidt-Bleek, Associate Professor of Chemistry and Director of the Appalachian Resources Project at the University. The interdisciplinary project preceded the establishment of our Environment Center and is now a part of it. I and my associates at the University of Tennessee appreciate the invitation from the committee to present this testimony and pledge any further assistance the committee may ask from us.

Many of our nation's most creative and bright people are found in our universities, as students and faculty. The organizational structure of institutions of higher education is strongly oriented toward disciplinary compartmentalization. This disciplinary focus gives tremendous strength to the development and maintenance of specialized excellence. But this historic tendency within Universities toward achievements within departmentalized units has offered little motivation to look outward toward applying available skills in cooperative ventures to problem solving. The structure of many of our universities mitigates therefore to a considerable degree against the direct use of their resources in attacking socio-technical problems.

First, there is usually no mechanism or incentive that serves to draw experts together from various disciplines to work on complex problems, such as environmental pollution, which require interdisciplinary approaches. *Second*, there is usually no mechanism to link existing latent interest to work on socially relevant research and to communicate the results of such efforts to regional, state, and local government and commerce. As a consequence, important potential resources are not utilized and relevant information is not transferred to those who need it in trying to solve problems. The Agricultural Extension Service has in the past provided a notable exception to these observations and deserves therefore careful consideration when thinking about mechanisms for technology transfer.

Environmental problems arise because of the increasing intensity and scale of resource utilization, augmented by technological developments, and exacerbated by the manner of use. They include problems of pollution, land use, energy, and other activities that affect the natural system and man's quality of life. Solutions are not simple, in part because the problems are usually so deeply woven into the fabric of our social and economic system. In recognition of this fact, the Appalachian Resources Project was established at the University of Tennessee in 1972 under the Vice Chancellor for Graduate Studies and Research as an effort to kindle interest among faculty throughout the University in developing an integrated attack on Appalachian problems (with particular emphasis on coal). As a result, there is now a research project on the Social and Private Costs of Coal, sponsored by the NSF, that is being carried out in a location adjacent to the Environment Center by an interdisciplinary team of faculty and students.

A further commitment to problem-focused research was made by the University's Board of Trustees in 1972 when it approved the establishment of the Environment Center under joint sponsorship of the Graduate School and the UT Institute for Public Service. The Center began operation in March 1973. An important concept added in the creation of the Center was not only to be the focus and coordination point for environmental research and development at the University of Tennessee, but it was also designated to commit half of its efforts toward assisting state and local government and other constituents of the University with their particular environmental problems. This two-sided responsibility, research and public service, provided on the one hand a mechanism for research priorities to be influenced through confrontation with actual, current problems and on the other hand it provided a mechanism through which the

great variety of expertise existing within the University could be ferreted out and brought to bear on problems through the "brokerage" function of the Center.

It needs stressing at this point that interdisciplinary Centers must be designed and developed very carefully if they are to be acceptable "overlays" onto the basically disciplinary organization of the university. Schools and departments within a university are zealous of their territory and autonomy and will welcome new activities only if these are perceived to offer new opportunities. Therefore, the UT Center does not intend to develop its own instructional curriculum. Neither is it designed to acquire a large professional staff or become a degree-granting unit. Rather, it assists in curriculum development and participates in instruction. It serves as internal broker and as a resource base for information and assistance to faculty and students. It provides common space and facilities for environmental research projects which involve several disciplines. It serves as a base to manage more complex projects. It provides the interface between the University and its constituents who have environmental problems or questions. But its strength comes from the fact that all units of the University have access to it because it belongs to all of them. It reports directly to the Vice Chancellor for Graduate Studies and Research. Such an administrative location gives the Environment Center an ideal position for its activities.

Here are a few vignettes to illustrate some of the things we do.

(1) We have assisted in organizing and teaching of interdisciplinary seminar courses in Energy, Environment, and Society.

(2) Faculty members have sought the Center's advice and counsel on the status of various environmental problems and funding opportunities, on the promise of new ideas, and approaches they might take in shaping their (disciplinary) research so that it was more relevant to environmental issues.

(3) Graduate students have come to the Center, some sent by their research advisors and some on their own initiative, to seek guidance in the choice of their research and career opportunities.

(4) The Center developed and presented to the Governor of Tennessee's staff a memo on the kind of response the State might make to the national energy problem. This was followed by the formation of a Task Force on Energy by the Governor and the director of the Center was appointed to the Task Force to represent the University.

(5) The Mayor of Knoxville requested assistance from the University in a siting study for a controversial regional wastewater treatment facility. The Center, in cooperation with the University administration, assembled a task force of experts and carried out an intensive interdisciplinary study over a one-week period, in time for the Mayor to meet tight decision deadlines.

(6) The resources of the Center are being used for a variety of special tasks in support of the University's Institute for Public Service. These tasks include assistance to industry and municipalities in their pollution control plans; speeches and lectures before workshops, seminars, and public groups.

(7) The Center has been called on by the Tennessee legislature to assist the State Office of Planning in developing techniques for land use analysis in the state in anticipation of the pending federal legislation (e.g., the National Land Use Policies Act).

(8) The Center is working with the Oak Ridge National Laboratory and the Tennessee Valley Authority, to coordinate more closely environmental research and planning to take advantage of each other's special expertise, and to develop joint projects when appropriate.

(9) The Appalachian Resources Project issues and distributes regularly reports which are intended to inform specific user groups on results obtained from its NSF-sponsored research and other activities.

(10) The Appalachian Resources Project was invited to testify on strip mine legislation before the joint U.S. House of Representatives Subcommittees on the Environment and Mines and Mining on April 17, 1973. Draft Number 3 (July 16, 1973) of the consolidated House Surface Mine Bill was transmitted for comments to the Appalachian Resources Project. Members of this Project have also been invited to participate in working conferences on coal-related problems, most recently the NSF-sponsored meeting in Pittsburgh on research strategies and the workshop on cost-benefit analysis at Brookhaven National Laboratory.

From these examples our Center can be viewed as a prototype of the Center called for in S1865. This should not be surprising since its approach was modeled in part after earlier versions of S1865. During our short history of operation we have every reason to be optimistic about the leverage such centers can have if a proper orientation can be maintained of their place in the University's life and

their responsibilities to constituents outside the University. Our experience in operating an Environment Center leads us to several general conclusions:

- (1) The Center should not be involved in the granting of degrees.
- (2) The Center should not engage in any hiring for the purpose of undergraduate or graduate teaching.
- (3) The Center should not be administratively located within any particular unit of the educational institution, but rather at a university-wide level.
- (4) A central but separate physical location is highly desirable, offering space for (temporary) interdisciplinary projects.
- (5) The Center should be created at an institution which is favorably disposed toward public service and information transfer.
- (6) All funding to be made available under the provisions of S1865 should flow through the Environment Center so that it can maintain central fiscal control of expenditures.

Given these general conclusions, derived from working in an Environment Center within an academic institution, we have the following specific comments to make on the proposed act:

Section 301 (and throughout S1865): We believe the term "environmental" should be replaced by "environment." An analogy would be that one might establish an "energy center," not an "energetic center."

Section 302(b) (Page 2, Line 6): Insert the word "interdisciplinary" before the word "environmental" and change the word "environmental" to "environment."

Section 302(b) (Page 2, Line 18): Change "concentrated" to "comprehensive."

Section 303(4) (B) (Page 3, Line 21): After the word "institutions" add "such as laboratories of state or federal agencies."

Section 303(7) (Page 4, Line 9): After the word "dissemination," add "assists state and local government, and performs other functions..."

Section 305(4) and 305(5) (Page 7): We caution against the appointment of a large professional staff, especially any staff appointments to carry out undergraduate or graduate instruction, unless made jointly with a disciplinary department or other teaching units. Most full-time staff appointments should be temporary and job-specific in order *not* to compete with positions within academic departments or to even imply a potential threat to the responsibilities of academic departments. We feel that appointments to these centers may profitably be concentrated into post-doctoral fellowships. This would allow a person who has developed specific disciplinary skills to broaden himself and to apply his skills to complex problems of interdisciplinary nature. Someone who has finished a formal graduate degree (e.g. M.S., Ph. D., etc.) and has spent a year or two working in a Center should be considerably better prepared to enter the job market than one without such post-degree experience.

Section 306(b) (2) (Page 9, Line 20): Change the words "may also" to: "is encouraged to..."

Section 306(b) (2) (Page 9, Line 21): After the word "arrangements" insert the following words: "to the extent of at least one-third of its funds derived from section 307(a) of this act." This gentle nudge will help insure that the Center will reach out beyond the campus on which it is located and make use of other resources throughout the state or region.

Section 306(b) (2) (A) (Page 9, Line 22): After the word "centers" insert: "public and private."

Section 306(c) (Page 10, Line 10): After the words "in the fields of" insert the words: "technical services."

Section 307(b) (Page 11, Line 16): After the words "centers, and (2)" insert the following: "the presence of areas of high environmental importance which warrant maintaining their high environmental quality (non-degradation), and (3)..."

Section 309(a) (2) (C) (Page 13, Line 3): Change "the Smithsonian Institution" to: "the Department of Interior." That agency should have considerably more to do with environmental problems associated with natural resources and energy than the Smithsonian.

Section 310(a) (2) (Page 15, Line 10): After the word "recommendations" insert the following: "to the responsible administrative official of the educational institution(s) and to the Governor(s)"...

Section 310(f) (Page 17, Line 20): After the word "board" insert the following: "or official committees of the advisory board;"...

We would be remiss *not* to add our feeling that it will be a challenge to establish and adequately maintain an Environment Center for each state that successfully carries out the intentions of this act. It is considerably more difficult for us to envisage at this point in time the establishment and practical operation of multi-state Environmental Centers. But we believe the bill displays both charity and foresight in providing for this possibility.

In closing this testimony we would like to express our sincere gratitude for having been given the chance to share with you some of our experiences with a functioning environment center. We enthusiastically support S. 1865 because we have learned in our own work that the provisions contained in this act can and will enrich educational institutions substantially and encourage the vitally needed synthesis and communication process between those who generate knowledge and those who apply it.

GIBBONS, JOHN H., DIRECTOR, ENVIRONMENT CENTER, UNIVERSITY OF TENNESSEE

Born January 15, 1929, Harrisonburg, Va.

Ph. D., Physics, Duke University, 1954; B.S., Mathematics and Chemistry, Randolph-Macon College, 1949.

Work experience

Research Associate, Duke Nuclear Structure Laboratories, 1954;

Physicist, Oak Ridge National Laboratory, 1954-1969;

Head, University Participation Program, Oak Ridge Associated Universities, 1962-63 (on loan from ORNL);

Member, National Defense Study Group under E. P. Wigner, ORNL, 1964-65;

Group Leader, Nuclear Geophysics Group, Physics Division, ORNL, 1966-69;

Director, Environmental Quality Study Program, ORNL, 1969-70;

Director, ORNL-NSF Environmental Program, ORNL, 1970-73;

Director, University of Tennessee Environment Center, 1973 to present.

Professional Organizations, Professional Committees, Honors, Awards:

American Physical Society (Fellow);

American Association for the Advancement of Science (Fellow);

International Association of Geochemistry and Cosmochemistry;

Ecological Society of America;

American Academy of Political and Social Science;

Member, U.S. Atomic Energy Commission's Nuclear Cross Section Advisory Committee, 1969-70;

Sigma Pi Sigma, Pi Mu Epsilon, Omicron Delta Kappa, Phi Beta Kappa, Sigma Xi;

American Men of Science, Who's Who in Atoms, Who's Who in the South and Southwest;

Member of the board of directors and chairman, Environmental Committee, Scientists and Engineers for Appalachia;

Member, Governor's Task Force on Energy (Tennessee), 1973;

Member, Board of Directors, Knox County Air Pollution Control Board, 1973.

Publications:

Approximately 30 publications in the fields of nuclear structure physics; neutron capture cross sections; stellar nucleosynthesis and origins of solar system material; use of proton reactions for trace light element studies; technology and social change; waste management. Contributed chapters or sections to 13 books. Several invited papers at both domestic and international conferences, most recently on "Waste Management: Some Physics Principles," at the American Institute of Physics Corporate Meeting, New York, September 1971, and "Energy Demand Growth: Can We Cool It?" before the American Physical Society (Washington, April 1973).

Other Interests and Activities:

Member, Sierra Club (1956), The Wilderness Society (1958), founding member, Tennessee Citizens for Wilderness Planning; Member, Board of Directors or Trustee of: Planned Parenthood Association of the Southern Mountains, the Webb School of Knoxville; founding chairman, Knox Environmental Coalition; President and member of the board of directors of Oak Ridge Development Corporation; Past member of the board of directors of the Oak Ridge Chamber of Commerce; Chemical Separations Corporation, and ORTEC, Inc.

Senator HASKELL. Thank you, Dr. Gibbons. I think you brought a great deal to this hearing in view of the fact that you, in effect, operate one of these centers, assuming this bill becomes law. Let me just ask you one question. The bill has a combination of grant and matching funds. Do you have a comment on this? Dr. Schien suggested that it should all be matching rather than outright grant to insure that a State was going into it seriously and was not just setting up a center for the sake of taking advantage of Federal funds. I must say that had some appeal to me, but I would appreciate your views.

Dr. GIBBONS. I believe ultimately not only should there be matching funds, but as time goes on, if this is truly an effort to assist in State and local decisionmaking, that the full burden of responsibility for this should pass to those States. Hopefully, if they are successful, this could easily be called for. However, I believe in the initial phases, such as the first year or perhaps 2 years, very much similar to the way foundations make grubstake funds available, that it would well be considered to provide very heavy Federal funding on the front end in order to enable these institutions to prove themselves to Federal, State, and local officials.

The tradition for increasing the high level of expertise in solving problems at the State and local level is not historic. It needs to be developed, I believe a year or 2 will show you, would be an excellent way to institute the program and, therefore, to move within say 1 or 2 years to a very heavy degree of fund matching approach would be fully legitimate, but I believe for the first year or two, it should have a minimum number of dollars from Federal support that is not contingent immediately upon State and local support.

Senator HASKELL. I see. Thank you very much, Dr. Gibbons. I appreciate having you here. Senator Bartlett.

Senator BARTLETT. Thank you, Mr. Chairman. Dr. Gibbons, I see, among the publications that you have published, a very timely publication, "Energy Demand Growth: Can We Cool It?" that you gave before the American Physical Society on Energy of this year. Can we?

Dr. GIBBONS. I believe we can, but it will not be easy.

Senator BARTLETT. This pertains to this whole area of environment and energy interface which is so important. Most of the testimony we have had, there is probably a limit and the rate of growth probably cannot be over too much without damaging job opportunity program progress, social programs, the war on poverty, these things. But, I am glad to hear that you think we can.

Dr. GIBBONS. I not only think we can, Senator, but I think we can because we must. It would be nice to have an infinite supply of energy available at no cost, but that is, unfortunately, not the fact of life.

One thing I have done through the center, for example, is to work with State governments and this has enabled us to establish a Task Force on Energy in the State of Tennessee by Governor Dunn.

One of the central activities of that group will be to try to see what might be done in curtailing the rate of growth of energy demand without adversely affecting the quality of life and economic growth within the State.

Senator BARTLETT. Is there a way I might obtain a copy of this publication?

Dr. GIBBONS. I have written a talk for a meeting this fall and I would be happy to pass a reprint to you.

Senator BARTLETT. Fine, I appreciate it. Thank you. I have just one question. It pertains to the question of Senator Haskell in the area of financing. How do you feel it is to have outside financing, that is non-State or non-Federal, such as industry or another?

Dr. GIBBONS. Although I do not recall the exact section of the bill in which this is addressed, it is important to divide up the task. As it were, the funding. I can give you some examples of our center at the University of Tennessee.

There are areas in which we have received a request for information or rather assistance from say, particular industry within the State. It is left to our best judgment whether to reply to this request simply by diverting our efforts under our present funding or whether to respond to the industry that can help them out.

We think it will cost them so much money in terms of the professors' help and simply respond in that way and have done both. We have given specific aid to industries, particularly the smaller industries in facing and responding to particularly the Federal pollution statutes.

There is one for instance I did just before I came up here today in which a request was received. We located the source of expertise on this problem within the university and connected that particular industry with this particular individual to do the work for them, which he will do on extra-service pay.

Senator BARTLETT. Dr. Gibbons, thank you very much for your testimony and your comments and answers. Also, for waiting for quite a late lunch. I would like to point out that the record will remain open for 14 days and the hearing is now adjourned.

[Whereupon at 1:05 p.m. the hearing was adjourned.]

APPENDIX

[Under authority previously granted, the following statements and communications were ordered printed:]

STATEMENT OF BETTY A. LITTLE, ENVIRONMENTAL ECONOMIST AND EDUCATOR,
BASKING RIDGE, N.J.

My name is Betty A. Little, I am an Environmental Economist and Educator with twenty-five years experience, fourteen as an economist and security analyst for leading banks and investment houses in N.Y. and Denver, seven teaching finance at Fairleigh Dickinson University, Madison, N.J., and four in environmental concerns.

Currently, I am State Legislative Chairman for the N.J. Division of the American Association of University Women, have just completed a term as a National Financial Advisor for AAUW, am Vice President of Citizens for Conservation, a member of the Task Force on Environmental Quality for the N.J. Council of Churches, a Trustee for the Passaic River Coalition and an environmental consultant.

My experience in environmental studies dates back to 1948 to an interdisciplinary study of the Missouri Basin at Oberlin College under ecologist Paul B. Sears and Economist Harvey Wooster. In the hearings in May 1970 on the Environmental Quality Act, in which I participated, a consensus of the participants defined environmental education as: 1) multi-disciplinary; 2) interdisciplinary; 3) community oriented; 4) and designed to change attitudes if not life styles. It has quickly become apparent to me that the education process must range from the technical and monitoring sector to the implementation sector and that we can not divorce the concept of centers from the concept of education. Education itself must be designed so that decisions are made on the basis of findings. I had expected as an environmental educator to be in the classroom or the natural environment and I find myself in the public forum attempting at the last minute to educate decision makers before they make future commitments of our limited resources.

Last year with great expectation I headed a program for 23 high schools in Morris County, N.J. which resulted in the awarding of 400 President's Environmental Merit Awards nearly 9% of the national awards. It was an attempt to carry out the goals set forth at the May 1970 hearings. The academic structure did not invite a multi-disciplinary, interdisciplinary approach and though temporary commitments were made long term attitudes had already been formed and we were in a sense too little and too late.

While I agree wholeheartedly with the comments made about the need for environmental education and centers as expressed by Senator Bellmon in the May 22, 1973 Congressional Record, my own experience leads me to believe that the scope of S. 1865 is so narrow that instead of improving our understanding and concern for the environment it may provide further difficulties in solving our problems—the flow through process by which technology and new ideas is accepted and adopted by the community must be almost instantaneous. For this we must find the most dedicated citizens in every State.

In the spring when I became aware that the funding for environmental education might be discontinued, I contacted 100 community leaders across the nation with whom I had participated in two National Environmental Protection Agency-AAUW conferences on The Environment and Citizen Action and asked each to inventory environmental education and center activities in their States with a view towards supporting legislation which would support those programs with a demonstrated ability to combine community resources for effective change. Results so far indicate that there are a variety of ways in which centers and educational programs are developing and that what you are looking for is not a single college or institution but individuals with expertise and an on going program.

The National Budget with its heavy long term commitments does not permit us to squander even a dollar of the potential funds for environmental education. We must invest it in every area where it will be most effective. In heavily urbanized areas such as New Jersey we must find a way to bring the experts together with the community. I would suggest that efforts such as those of the watershed associations which have drawn on the expertise of many campuses and all educational levels should be given consideration. By placing funds only in the hands of a single institution in each State we eliminate the possibility of drawing on the best available talent, the use on a regular basis of qualified volunteers, the involvement of every education and age level, and the implementation of education in the decision making process. We have passed the time when we can do pure research or simply make material available—we must seek every method so that each year we improve our understanding and handling of the environment.

What I suggest is that:

(1) The National Environmental Protection Agency rather than the Governor of the State be authorized to distribute funds so that environmental concerns can be eliminated from the political arena.

(2) That an inventory be made of existing environmental education and environmental centers programs to determine which have been effective and offer through grants support for Colleges, Watershed Associations, Institutes or other organizations which have already established a staff and programs.

(3) That especially in urban areas or where distance presents difficulties more than one center per state be considered.

The most pressing of our environmental problems is not one of technology but one of social arrangements and implementation, of law and consensus. We must draw together the disciplines and not separate them, the community and the college. It is my view based on years of experience that in many areas the private sector will provide the greatest momentum because protection of the environment is in a sense "their vested interest". If this bill is amended to expand its meaning, I shall be among its strongest supporters both in New Jersey and across the nation.

WASHINGTON STATE UNIVERSITY,
Pullman, Wash., August 14, 1973.

Senator FLOYD HASKELL,
Chairman, Subcommittee on Public Lands, Senate Committee on Interior and Insular Affairs, Dirksen Office Building, Washington, D.C.

DEAR SENATOR HASKELL: Washington State University supports the enactment of Senate Bill S. 1865, The Environmental Centers Act of 1973. We believe that this bill contains several improvements over earlier versions, particularly the provision for a coordinating function inserted at several points.

We recommend one further revision to the bill to introduce an additional subsection in section 309, which would establish an executive committee of state directors for the purpose of advising the National Director on program administration, coordination, development, and operation of the National Environmental Center's program. We believe that this mechanism for interaction between the State Centers and the National Directors is essential for good liaison between the state and national programs.

This statement is submitted for inclusion in the hearing record of the July 30 hearing on S. 1865.

Sincerely,

W. H. MATCHETT,
*Associate Dean and Director,
Grants and Research Development.*

UNIVERSITY OF MARYLAND,
THE GRADUATE SCHOOL,
College Park, July 27, 1973.

Hon. FLOYD K. HASKELL,
Chairman, Subcommittee on Public Lands, Senate Committee on Interior and Insular Affairs, Dirksen Office Building, Washington, D.C.

DEAR SENATOR HASKELL: I am pleased to have the opportunity to express support for Senate Bill 1865, The Environmental Centers Act of 1973.

Despite the enormous amount of time given to environmental problems by all sectors of our society, we still lack an effective and coordinated system for de-

veloping solutions for these problems. More often than not, actions are taken in an atmosphere of crisis frequently with insufficient and inadequate understanding of the full consequences than can be expected from these decisions. Responses are often emotional and sometimes stated as "either or" propositions—either jobs or pollution, either economic growth or environmental purity, either industrialization or a pristine environment. But the problems and certainly the solutions are almost never so clear-cut and simple—almost never simply economic or ecology.

The characteristic and intricacies and complexities of environmental issues together with the high state of technical capability require that we develop an improved institutional organization to effectively respond to issues before us. It is my judgment that the provisions as stated in the Environmental Centers Act would contribute constructively in this direction.

Sincerely yours,

MICHAEL J. PELCZAR, Jr.,
Vice President for Graduate Studies and Research.

NEW YORK STATE COLLEGE OF AGRICULTURE AND LIFE SCIENCES,
CORNELL UNIVERSITY,
Ithaca, N.Y., August 30, 1973.

Hon. FLOYD K. HASKELL,
Chairman, Subcommittee on Public Lands,
Senate Committee on Interior and Insular Affairs,
Dirksen Office Building,
Washington, D.C.

DEAR SENATOR HASKELL: We strongly endorse Senate Bill S1865 to amend the National Environmental Policy Act of 1969 to encourage the establishment of state and regional environmental centers. Such centers would provide vital assistance to states and regions by providing a reservoir of environmental knowledge and by stimulating much needed interdisciplinary and multi-professional activity in the environmental area.

The breadth of such centers could and should cover not only the effects of traditional concerns such as air, water and land pollution on the environment, but also the interrelationships of these and other concerns as they affect the people. Examples of latter concerns include housing, transportation, health, food production and recreation.

The College of Agriculture and Life Sciences, a statutory college of the State University at Cornell University, has initiated an Environmental Studies Program to accomplish many of the same items described in S1865 and articulated by Senator Bellmon in the Congressional Record on May 22, 1973. The goals and aspirations of the Environmental Studies Program are remarkably close to those of S1865.

The accomplishments of the College's Environmental Studies Program are testimony of the success that can occur when adequate administrative support is available. The participation of individuals in many disciplines and in a number of administrative units has been very positive. Very interesting and broad based activities are underway in the education, research, and public service areas as a result of the initiation of the Environmental Studies Program. Such accomplishments would be vastly magnified throughout the nation as a result of the passage of S1865.

In spite of the many reports on the environmental problems facing the nation that have been developed over the past decade, little action has been taken on most of the more pressing items. Part of the inactivity has been due to the lack of qualified individuals capable of understanding the breadth and interrelations of environmental problems, by the lack of definable and comprehensive environmental resource inventory locations, and by placing the environmental problems into artificial compartments such as air, water, pesticides, etc. S1865 would remove these bottlenecks and stimulate action on the pressing environmental problems.

The educational and information dissemination components of the bill are well spelled out in Sections 305 (2), (3) and (4). The research components are not as clear although the intent is described in Sections 302(b) and 305(1). It would be useful to more clearly indicate that the bill is intended to stimulate and support basic and applied research in the broadest sense. That is to say, basic and applied

research at the laboratory, pilot plant, and especially full scale level to develop fundamental scientific and technical knowledge and to demonstrate the application of such knowledge to actual problems in the states and regions. Both the development and demonstration of knowledge are vital to the solution of the nation's problems and to the education of the people.

As indicated earlier, we strongly support Senate Bill S1865 and look forward to its rapid passage and implementation.

Sincerely yours,

W. K. KENNEDY, *Dean.*

NEW YORK STATE COLLEGE OF AGRICULTURE AND LIFE SCIENCES,
CORNELL UNIVERSITY,
Ithaca, N.Y., July 30, 1973.

Senator FLOYD K. HASKELL,
Chairman, Subcommittee on Public Lands, Senate Committee on Interior and Insular Affairs, Dirksen Office Building, Washington, D.C.

DEAR SENATOR HASKELL: I am writing in support of the *Environmental Centers Act of 1973*, S. 1865, which is scheduled for a hearing before the Senate Committee on Interior and Insular Affairs on July 30, 1973. My present capacity is that of a professor in the New York State College of Agriculture and Life Sciences, a Statutory College of the State University of New York at Cornell University. I have served on appointment in the College since 1932; from 1938 until 1957 as Professor of Entomology and Head of the Department of Entomology and Limnology; between 1957-1959 as Director of Research, the New York State College of Agriculture and the New York State College of Home Economics, and Director of the Cornell University Agricultural Experiment Station; from 1959 until 1972 as Dean of the New York State College of Agriculture and Life Sciences, and since 1972 as the Liberty Hyde Bailey Professor of Agricultural Sciences. During the period of my administrative duties, I served on committees of the National Association of State Universities and Land Grant Colleges that dealt with water resources and more recently with environmental quality.

S. 1865, the *Environmental Centers Act of 1973*, has real merit. Based on experience with other legislation that has been in existence over a period of years, including the Hatch Act of 1887 and the Water Resources Act of 1964, universities and colleges have been successful in developing programs designed to solve problems and to provide educational services for the people of the states, regions, and the nation with the assurance of reasonable continuing support. Many states are in a position to initiate or to expand programs with assistance such as is proposed in the environmental centers legislation. Through the development of environmental programs functional at state and regional levels oriented toward research, education, and public service in environmental matters, a national program can emerge with a strong clear purpose.

Many of the problems of the immediate and longer range future must be dealt with initially in terms of the best information at hand while attempting to develop guidelines for research that hopefully will provide new and more effective information for future action. With the fast moving changes in our society, anticipation and preparation for change is essential before it overtakes us. Thus we need to marshal the resources of the many private and public educational institutions in each state and region that are willing to contribute to the solution of local and regional problems as well as to the national focus on improved environmental quality. S. 1865 proposes a mechanism for bringing about the coordination of many of the sources that will be useful in attaining this objective, as well as a mechanism for projecting useful information into the solution of current problems. Further, it would assist in providing *continuing essential support* to institutions in each state and/or region that would serve as a nucleus for attracting supporting funds from other sources for improving environmental quality. The state or regional environmental center would be a focal point for action involving many participants. The reliability of this approach has been amply demonstrated.

It is worth stressing the value of continuing formula funds for programs at educational centers. The great technological strength of agriculture and its supporting sciences in the United States today would never have attained its ability to serve this nation without the long term, ongoing support for agricultural research provided by the Hatch Act of 1887. Excellent progress has been noted in building a national research and training program in water and marine resources through similar cooperative effort among our universities.

As with other efforts in research, scientists achieve advances through investigation and experience, yet many of the problems are never solved completely. New knowledge makes possible new advances or improvement in old practices. It takes a definite commitment of firm support on a continuing basis for faculty and staff that are dedicated to years of teaching, research, and public service. Often, short term grants are most valuable in support of definite projects, but they are not a substitute for long term support that can be used to maintain a staff of highly qualified individuals who will devote their efforts on a continuing basis to the important aspects of a field of study. S. 1865 does provide this type of support for environmental quality.

Developing and maintaining a suitable environment is essential to every individual. Unless satisfactory methods are devised whereby the people of the nation have compatible relationships with their environment, the latter can easily become a limiting factor in their activities.

A well planned, forward-looking program of research, training, and public service is required for the foreseeable future. Universities and colleges are well qualified to assume a leadership role through the Environmental Centers Act of 1973. They can provide the focus for training young men and women who will be the leaders of tomorrow. The university utilizes its resources in a multidisciplinary approach to research and provides public service and continuing education as ongoing components of its established program.

I favor the enactment of this legislation.

Sincerely yours,

CHARLES E. PALM, *Professor.*

THE UNIVERSITY OF MICHIGAN,
Ann Arbor, July 26, 1973.

HON. FLOYD K. HASKELL,
Chairman, Subcommittee on Public Lands, Senate Committee on Interior and Insular Affairs, Dirksen Office Building, Washington, D.C.

DEAR SENATOR HASKELL: The University of Michigan strongly supports Senate Bill S. 1865, "The Environmental Centers Act of 1973." The University has a long and distinguished history of concern about the environment, starting in 1881 with the first formal course in forestry to the present with our School of Natural Resources, and Institute for Environmental Quality, and many other teaching and research units engaged in activities bearing on the fundamental concept of ecology and the pervasive interrelationships between man and his environment.

The establishment of Environmental Centers would enable selected universities to increase their research, training, and public service activities and would enable several states to work together to address themselves to common environmental problems. By providing matching funds, the federal program would encourage and support state efforts to the extent that each state assigns priorities and resources.

I am convinced that the magnitude of our nation's environmental problems requires a cooperative effort on the part of federal and state government as well as the active involvement of the major universities of the various states in order to solve or at least ameliorate those problems. I am convinced also that our nation's universities can make a valuable contribution and that the creation of Environmental Centers would enable states or regions to make significant progress in the years ahead toward providing an adequate environment. I appreciate the opportunity to share my convictions with you and to express my support of S. 1865.

Sincerely,

R. W. FLEMING.

MICHIGAN STATE UNIVERSITY,
East Lansing, Mich., July 26, 1973.

Senator FLOYD K. HASKELL,
Chairman, Subcommittee on Public Lands, Senate Committee on Interior and Insular Affairs, Dirksen Office Building, Washington, D.C.

DEAR SENATOR HASKELL: This letter is in support of the concepts proposed under Senate Bill 1865, "Environmental Centers Act of 1973." As a member of an ad hoc committee on environmental centers for the National Association of

State Universities and Land Grant Colleges, I am familiar with the numerous attempts to introduce legislation relating to national environmental laboratories and state environmental centers.

Since environmental issues transcend local, State, and even National boundaries, it is of considerable importance that mechanisms be devised to bring the various expertise available in the university community, State and National agencies, local planning groups, and industry to bear upon exceedingly complex environmental problems and responsible land-use and community design programs of the future. This can not be achieved through demand or decree, but more through the design of State and/or regional environmental centers that highly complement the talents and objectives of these most important segments of our society. A close working relationship, between the developers of new knowledge with the universities and research and development institutions, and the policy makers and planners within local and State agencies, in concert with the economic development objectives of industry, can provide attainable solutions to immediate environmental problems, as well as future planning programs compatible with a high quality of life for man and a high quality natural environment.

Although Senate Bill 1865 incorporates the desired philosophy behind State environmental centers and provides through the Environmental Protection Agency the necessary relationship of State programs to regional and National objectives, it is suggested that additional language might improve the ability of the State environmental centers to carry out the objectives of this bill. Section 307(a) provides base operating monies for continuing programs of the State environmental centers in research, education, and public service. The receipt of these monies by the State environmental center is not contingent upon State appropriated matching monies. It is possible that a State environmental center, once designated by the Governor of that State, might not be capable of designing administrative and subcommittee structures that would incorporate the interests and the programs of those segments of the State who presumably they will represent, i.e. university and research and development institutions, local and State agencies, industry, and the educational community. It is suggested that a requirement of matching monies by the State under Section 307(a) would insure that a proper interface is initially established and maintained by the State environmental centers and the respective resources in public and private sectors. Without this initial endorsement by the State legislators and the components that they represent, it is highly unlikely that the State environmental centers would receive the endorsement or State matching monies necessary under Section 307(b) to become effectively engaged in complex environmental problems at the State or regional level.

It is also suggested that the amounts of money available under Section 307 (a) are not adequate to maintain the base operation of a truly comprehensive environmental center. It is recommended, therefore, that the amounts of money authorized under Section 307(a) be increased to \$14 million for the fiscal year ending June 30, 1974, \$18 million for the fiscal year ending June 30, 1975, and \$28 million for the fiscal year ending June 30, 1976.

Section 309 of S. 1865 describes the Environmental Centers Research Coordinating Board. While adequate representation is made under 309(a) (1) for the Environmental Protection Agency, (2) Federal functions and institutions, and (3) the private sector, there does not appear to be an adequate input or representation from the State environmental centers. It is suggested that the Directors of State and regional environmental centers constitute an advisory committee, a representative of which would be a member of the Environmental Centers Research Coordinating Board. It would appear that a lack of duplication of research, education and public service efforts between State or regional environmental centers might be more effectively achieved at the working level of a committee of Directors of State or regional environmental centers, at the time of initiation of programs, rather than at a later time when it comes to the attention of the Environmental Centers Coordinating Board.

I hope that these comments will be of some assistance to you in your public hearings on S. 1865. I would be very pleased to provide you with any further information relating to the comments and recommendations that I have made.

Sincerely yours,

JOHN E. NELLOR,
Director, Center for Environmental Quality.

STATE OF FLORIDA,
July 25, 1973.

HON. FLOYD K. HASKELL,
U.S. Senator,
Senate Committee on Interior and Insular Affairs,
Dirksen Office Building,
Washington, D.C.

DEAR SENATOR HASKELL: Senate Bill 1865, the Environmental Centers Act of 1973, would benefit Florida and, I believe, other populous States with environmental problems caused by rapid growth and development. For your scheduled hearing on July 30, 1973, I would appreciate your recording my strong support for this bill.

In Section 309 of the bill, provision for an advisory board of directors of State and Regional Centers would complement the central board already proposed.

Your consideration of this kind of legislation is most appreciated.

With kindest regards,

Sincerely,

REUBIN ASKEW,
Governor.

THE FLORIDA STATE UNIVERSITY,
Tallahassee, Fla., July 24, 1973.

Senator FLOYD K. HASKELL,
Chairman, Subcommittee on Public Lands, Senate Committee on Interior and Insular Affairs, Dirksen Office Building, Washington, D.C.

DEAR SENATOR HASKELL: This letter is in response to the scheduled hearing on S. 1865, The Environmental Centers Act of 1973, on July 30, 1973. I wish to indicate my strong support for this bill. The State of Florida will benefit greatly by the passage of this legislation.

I would like to make one suggestion regarding the administration and coordination of the act. I think it would be helpful to include an advisory board made up of representatives from the directors of state and regional centers in addition to the coordination board identified in Section 309.

Thank you for your consideration of this matter.

Sincerely,

EDWARD A. FERNALD,
Director of the Florida Resources
and Environmental Analysis Center.

SIERRA CLUB,
San Francisco, July 31, 1973.

HON. HENRY M. JACKSON,
Chairman, Senate Interior and Insular Affairs Committee, Senate Office Building,
Washington, D.C.

DEAR CHAIRMAN JACKSON: In lieu of testifying I am writing on behalf of the 140,000 members of the Sierra Club in support of S. 1865, the Environmental Centers Act of 1973, on which your committee is holding hearings. I would appreciate your including this letter in the hearing record.

The Club agrees with the policy and purposes expressed in S. 1865 that "it is the policy of the Congress to support basic and applied research, planning, management, education and other activities necessary to maintain and improve the quality of the environment through the establishment of environmental centers, in cooperation with and among the States, and thereby to achieve a more adequate program of environmental protection and improvement within the States, regions and Nation . . ." and we commend you and the Interior Committee for considering this legislation to further environmental research, training, education and dissemination of information to the American public.

As you know, the bulk of this measure is devoted to setting forth the procedures of establishing centers, stating the organization of them, and outlining the functions of state or regional environmental centers. The enumeration of these points is specific, and it would serve no constructive purposes to elaborate on them. However, we would like to make one recommendation with respect to the appointment by the Environmental Protection Agency Administrator of members to serve on the Environmental Centers Research Coordination Board and with respect to the appointment by state Governors of members of the individual Environmental Center Advisory Boards. While we concur with the proposed rep-

resentation on these two kinds of boards, drawing as they will from all corners of communities and including individuals of varied disciplines and expertise, the Sierra Club thinks it would be useful to solicit the recommendations initially from these communities for the ultimate appointments to the boards. In that way the public's participation in these centers can be assured from the start and, thus, would fulfill the intent of Congress certainly concerning the accessibility to the information and activities of these centers.

We hope you will consider including this concept in S. 1865 because of the wide public support for environmental centers it would generate, and we look forward to your reporting this measure at the earliest possible date.

Yours truly,

MICHAEL McCLOSKEY,
Executive Director.

NU MINE, PA., July 25, 1973.

HON. FLOYD K. HASKELL,
*Russell Office Building,
Washington, D.C.*

DEAR SENATOR HASKELL: I support the bill you cosponsored, Senate 1865, to amend the National Environmental Policy Act of 1969 in order to encourage the establishment of, and to assist State and regional environmental centers.

This is a very realistic proposal, and I am hopeful the Congress will act promptly on this measure.

I would appreciate it very much if you would send me an autographed picture of yourself.

Thank you for your time and consideration.

Sincerely,

JIM McKEE.

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