

AMENDMENT NO. \_\_\_\_\_ Calendar No. \_\_\_\_\_

Purpose: To provide a complete substitute.

**IN THE SENATE OF THE UNITED STATES—109th Cong., 1st Sess.**

**S. 517**

To establish the Weather Modification Operations and Research Board, and for other purposes.

Referred to the Committee on \_\_\_\_\_ and ordered to be printed

Ordered to lie on the table and to be printed

AMENDMENT IN THE NATURE OF A SUBSTITUTE intended to be proposed by Mrs. HUTCHISON

Viz:

1 Strike all after the enacting clause and insert the following:  
2

3 **SECTION 1. SHORT TITLE.**

4 This Act may be cited as the “Weather Modification  
5 Research and Development Policy Authorization Act of  
6 2005”.

7 **SEC. 2. PURPOSE.**

8 It is the purpose of this Act to develop and implement  
9 a comprehensive and coordinated national weather modification  
10 research policy and a national cooperative Federal

1 and State program of weather modification research and  
2 development.

3 **SEC. 3. DEFINITIONS.**

4 In this Act:

5 (1) BOARD.—The term “Board” means the  
6 Weather Modification Research Advisory Board.

7 (2) RESEARCH AND DEVELOPMENT.—The term  
8 “research and development” means theoretical anal-  
9 ysis, exploration, experimentation, and the extension  
10 of investigative findings and theories of a scientific  
11 or technical nature into practical application for ex-  
12 perimental and demonstration purposes, including  
13 the experimental production and testing of models,  
14 devices, equipment, materials, and processes.

15 (3) WEATHER MODIFICATION.—The term  
16 “weather modification” means the purposeful or in-  
17 advertent changing or controlling, or attempting to  
18 change or control, by artificial methods, the natural  
19 development of atmospheric cloud forms or precipita-  
20 tion forms which occur in the troposphere.

21 **SEC. 4. WEATHER MODIFICATION SUBCOMMITTEE.**

22 (a) ESTABLISHMENT.—The Director of the Office of  
23 Science and Technology Policy shall establish a Weather  
24 Modification Subcommittee to coordinate a national re-  
25 search program on weather modification.

1 (b) MEMBERSHIP.—The Weather Modification Sub-  
2 committee shall include representatives from appropriate  
3 Federal agencies, including the National Oceanic and At-  
4 mospheric Administration, the National Science Founda-  
5 tion, and the National Aeronautics and Space Administra-  
6 tion.

7 (c) CHAIRS OF THE WEATHER MODIFICATION SUB-  
8 COMMITTEE.—A representative from the National Oceanic  
9 and Atmospheric Administration and a representative  
10 from the National Science Foundation shall serve together  
11 as co-chairs of the Weather Modification Subcommittee.

12 (d) IMPLEMENTATION PLAN.—Not later than 180  
13 days after the date of enactment of this Act, the Director  
14 of the Office of Science and Technology Policy shall de-  
15 velop and submit to Congress a plan for coordinated Fed-  
16 eral activities under the national research program under  
17 subsection (a) and the plan shall—

18 (1) for a 10-year period beginning in the year  
19 it is submitted, establish the goals and priorities for  
20 Federal research that most effectively advances sci-  
21 entific understanding of weather modification;

22 (2) describe specific activities required to  
23 achieve such goals and priorities, including funding  
24 of competitive research grants, training and support

1 for scientists, and participation in international re-  
2 search efforts;

3 (3) identify and address, as appropriate, rel-  
4 evant programs and activities of the Federal agen-  
5 cies and departments that would contribute to the  
6 program;

7 (4) consider and use, as appropriate, reports  
8 and studies conducted by Federal agencies and de-  
9 partments, and other expert scientific bodies, includ-  
10 ing the National Research Council report on Critical  
11 Issues in Weather Modification Research;

12 (5) make recommendations for the coordination  
13 of program activities with weather modification ac-  
14 tivities of other national and international organiza-  
15 tions;

16 (6) incorporate recommendations from the  
17 Weather Modification Research Advisory Board; and

18 (7) estimate Federal funding for research ac-  
19 tivities to be conducted under the program described  
20 in subsection (a).

21 (e) PROGRAM SCOPE.—The national research pro-  
22 gram under subsection (a) may include the following ac-  
23 tivities related to weather modification:

24 (1) Interdisciplinary research and coordination  
25 of research and activities to improve understanding

1 of processes relating to weather modification, includ-  
2 ing—

3 (A) cloud modeling;

4 (B) cloud seeding;

5 (C) improving forecast and decision-mak-  
6 ing technologies;

7 (D) related severe weather research; and

8 (E) potential adverse affects of weather  
9 modification.

10 (2) Coordination with relevant organizations  
11 that engage in weather modification research.

12 (3) Development through partnerships among  
13 Federal agencies, States, and academic institutions  
14 of new technologies and approaches for weather  
15 modification.

16 (4) Scholarships and educational opportunities  
17 that encourage an interdisciplinary approach to  
18 weather modification.

19 (f) ANNUAL REPORT ON ACTIVITIES.—Beginning  
20 with the first year occurring more than 24 months after  
21 the date of enactment of this Act, the Director of the Of-  
22 fice of Science and Technology Policy shall prepare and  
23 submit to the President and Congress not later than Janu-  
24 ary 31st of each year an annual report on the activities

1 conducted pursuant to this section during the preceding  
2 fiscal year, including—

3 (1) a summary of the achievements of Federal  
4 weather modification research, including Federally  
5 supported external research, during the preceding  
6 fiscal year;

7 (2) an analysis of the progress made toward  
8 achieving the goals and objectives of the plan devel-  
9 oped under subsection (d), including the identifica-  
10 tion of trends;

11 (3) a copy or summary of the plan and any  
12 changes made to the plan;

13 (4) a summary of agency budgets for weather  
14 modification activities for the preceding fiscal year;

15 (5) any recommendations regarding additional  
16 action or legislation that may be required to assist  
17 in achieving the purposes of this Act;

18 (6) a description of the relationship between re-  
19 search conducted on weather modification and re-  
20 search conducted pursuant to the Global Change Re-  
21 search Act of 1990 (15 U.S.C. 2921 et seq.), as well  
22 as research on weather forecasting and prediction;  
23 and

24 (7) a description of any potential adverse con-  
25 sequences on life, property, or water resource avail-

1 ability from weather modification efforts, and any  
2 suggested means of mitigating or reducing such con-  
3 sequences if such efforts are undertaken.

4 **SEC. 5. WEATHER MODIFICATION RESEARCH ADVISORY**  
5 **BOARD ESTABLISHED.**

6 (a) **ESTABLISHMENT.**—There is established in the  
7 Office of Science and Technology Policy the Weather  
8 Modification Research Advisory Board to make rec-  
9 ommendations to the Weather Modification Subcommittee  
10 on matters related to weather modification.

11 (b) **MEMBERSHIP.**—

12 (1) **COMPOSITION.**—The Board shall consist of  
13 9 members, each with a field of expertise in atmos-  
14 pheric science or civil engineering relevant to weath-  
15 er modification, and appointed by the Director of the  
16 Office of Science and Technology Policy as follows:

17 (A) At least 1 member shall be a rep-  
18 resentative of the American Meteorological So-  
19 ciety.

20 (B) At least 1 member shall be a rep-  
21 resentative of the American Society of Civil En-  
22 gineers.

23 (C) At least 1 member shall be a rep-  
24 resentative of the National Academy of  
25 Sciences.

1           (D) At least 1 member shall be a rep-  
2           resentative of institutions of higher education or  
3           research institutes with experience in the field.

4           (E) At least 1 member shall be a rep-  
5           resentative of a State organization that is cur-  
6           rently supporting operational weather modifica-  
7           tion projects.

8           (2) TENURE.—A member of the Board shall  
9           serve at the pleasure of the Director of the Office of  
10          Science and Technology Policy.

11          (3) VACANCIES.—Any vacancy on the Board  
12          shall be filled in the same manner as the original ap-  
13          pointment.

14          (c) INITIAL MEETING.—Not later than 30 days after  
15          the date on which all members of the Board have been  
16          appointed, the Board shall hold its first meeting.

17          (d) MEETINGS.—The Board shall meet at the call of  
18          the Chair.

19          (e) QUORUM.—A majority of the members of the  
20          Board shall constitute a quorum, but a lesser number of  
21          members may hold hearings.

22          (f) CHAIR AND VICE CHAIR.—The Board shall select  
23          a Chair and Vice Chair from among its members.

24          (g) DUTIES OF THE BOARD.—The duties of the  
25          Board shall include the following:

1           (1) Advising the Weather Modification Sub-  
2           committee on recommendations concerning legisla-  
3           tion, policies, administration, research, and other  
4           matters related to weather modification.

5           (2) In order to assist in expanding the theo-  
6           retical and practical knowledge of weather modifica-  
7           tion, the Board shall advise the Weather Modifica-  
8           tion Subcommittee on the research and development,  
9           studies, and investigations with respect to—

10                   (A) potential uses of technologies and ob-  
11                   servation systems for weather modification re-  
12                   search; and

13                   (B) assessments and evaluations of the ef-  
14                   ficacy of weather modification, both purposeful,  
15                   including cloud-seeding operations, and inad-  
16                   vertent, including downwind effects and anthro-  
17                   pogenic effects.

18           (h) POWERS OF THE BOARD.—The Board may con-  
19           duct public meetings, gather information, and issue re-  
20           ports.

21           **SEC. 6. COOPERATION WITH THE WEATHER MODIFICATION**  
22                                   **SUBCOMMITTEE.**

23           The heads of the departments and agencies of the  
24           United States and the heads of any other public or private  
25           agencies and institutions that receive research funds from

- 1 the United States related to weather modification shall,
- 2 to the extent possible, give full support and cooperation
- 3 to the Weather Modification Subcommittee.

Amend the title so as to read: “To establish a coordinated national weather modification research and development program, and for other purposes”.