Who Studies Water? Geological Survey Finds Political Path Is Well Strewn With Pitfalls

The U.S. Geological Survey has emerged in somewhat battered condition from a journey along the political crags and crevasses of Capitol Hill. In the rush of government events, its experience is of minor importance—it received virtually no press notice—but it is an instructive example of the infighting that goes on among federal agencies involved in scientific work of one sort or another, and of the need for government science to develop political lifelines.

The Survey, part of the Interior Department, has pretty much minded its own business—rocks, water, sand, and minerals—since it was founded in 1879. It employs about 7000 persons and has a current budget totaling $77.4 million. It rarely issues press releases, nor has it gone to any pains to cultivate support in Congress. It found assurance of its future in its widely acknowledged reputation for excellence. Traditionally, the field has by no means been limited to the Geological Survey—the Department of Agriculture, the Weather Bureau, the Army Engineers, and about a dozen other agencies are also concerned with it to some extent. But the Survey has managed to get along fairly well in this company.

Water

In 1956, as concern grew over the nation's water resources, the Survey's Water Resources Division began to engage in basic research on water. The division previously had worked almost solely on collecting data on water—stream flow, chemical quality, temperature, and water levels. The basic research was funded at a modest level—it rose to $1.4 million last year—and brought the division into work on fundamental hydrology. For the first time, the division also ventured into education in hydrology by cooperating in the establishment of hydrology courses, leading to undergraduate and graduate degrees, at the University of Arizona. In characteristic fashion, it has moved slowly in its research and educational undertakings. It has maintained extremely close supervision over its educational grants and it has undertaken no tasks beyond the reaches of its manpower resources. This is an oldfashioned way to approach the matter, at least as far as some of the bigger and harder driving agencies are concerned; one way to convince Congress of the need for additional support is to bite off more than can be chewed, thus proving the need for more help.

While the Survey's Water Resources Division was slowly moving along in hydrological research, Congress assigned the Public Health Service broad responsibilities in water pollution control. The PHS Committee on Environmental Health, an advisory group to the Surgeon General, interpreted the congressional mandate as giving the PHS "the primary Federal responsibilities for water pollution control and in so doing assigned it the role of a major Federal water resources agency." The Committee, with an instinct wholly lacking in the Geological Survey, also noted that: "Since concern has been expressed that the health orientation of the Public Health Service limits its effectiveness in dealing with water resources problems, actions be taken to assure Congress and the public of the Service's full capacity for dealing with all aspects of the Federal water quality program, and that its program is an activity of major proportions which deals with quality management for all water uses."

In its recommendations, the Committee sought to stake out a fairly broad area for the PHS by proposing establishment of a "national water quality center in which can be conducted programs of basic and applied research on water resource problems of national significance."

The Survey, which is devoid of empire-building instincts, saw no threat to its own role in the PHS pollution control activities, but the scope set forth for the proposed center, along with the Public Health Service's aggressive interpretation of its place in the federal water hierarchy, was the cause of considerable alarm. In addition, Survey officials became gloomy when they asked the PHS where it proposed to find personnel for basic water research. The reply was that they would be hired away from the Geological Survey.

A number have already been lured to the PHS, Survey officials say, including two senior men in recent months. In trying to resist this flow, the Survey is at a disadvantage: As a very stable agency, with relatively little growth from year to year, it has maintained a slow rate of promotion; the PHS, as an expanding agency in the field, has jobs to fill all along the scale and has been able to offer better salaries, as well as better positions, to attract people from other agencies.

The Survey decided that the best response to this threat would be that of putting increased emphasis on its own water research activities. Its interest in this direction was quickened by what it regarded as the PHS encroachments, but the initial motive was provided by President Kennedy's natural resources message of February 1961, which called attention to the need for basic research on water problems. Following the message, the Survey proposed the establishment of an Institute of Water Research to carry on basic research within its water resources division. For this purpose, it told the Administration, it would need a budget increase of $1.9 million, plus the use of $900,000 that it currently spends on research. The "Institute" would not be a building, nor in any sense a new undertaking; it would simply be a slight expansion of existing activities, grouped under one label. The label would provide visibility for the Survey's basic water research activities, an attribute not to be scoffed at when various agencies are squabbling for jurisdiction, and it would certify Administration and congressional sanction for the Survey's presence in the field.

Just what happened as this proposal trickled through various layers of officialdom is not easy to determine. The proposed Institute is known to have been the subject of several stormy sessions—with the Survey and the PHS pitted against each other—before the water resources committee of the Federal Council on Science and Technology, which was set up to bring harmony and cooperation into federal scientific undertakings. The President's science adviser, Jerome B. Wiesner, is also reported to have been closely involved in the matter.

The question of who is responsible for what in basic water research apparently was not resolved to either party's satisfaction, but Wiesner, in his recommendations to the Bureau of the Budget, supported the budget request for the Institute. The support was not at the expense of the PHS, since expansion of its water research activities were endorsed to the Bureau of the Budget. (Survey officials contend that a substantial part of these PHS activities directly overlap their own work, particularly in the establishment of sam-

pling stations. They feel that Wiesner, while supporting them, also took the easy way out by refusing to draw a distinct boundary. PHS officials deny any duplication, stressing the view that there is plenty of work for all interested parties. They also say they fail to see just what it is that has the Survey up in arms.)

The scene shifted next to Capitol Hill, where the House and Senate appropriations subcommittees dispose of what the Administration proposes. In the long and complex process that determines the directions that government science will take, these are enormously important points, for it is these subcommittees that can say yes or no to requests for money. The subcommittee decisions can be overcome but Congress rarely chooses to do so. In practice, the subcommittees generally tend to go along with the Administration's requests for funds for scientific activities—few science administrators complain about the manner in which the Congress treats their proposals. In regard to the PHS the subcommittees are more than just agreeable, for year after year they pile on more money than the Administration requests. This year was no exception. The PHS request for water control activities of all sorts was $23.6 million; the House subcommittee increased this by $1 million. The Senate subcommittee has not yet reported its decision, but it tends to outdo its House counterpart in generosity.

The subcommittee that handles the Survey's budget is not afflicted by this spirit of largesse, nor is the Survey particularly adept in congressional relations. (As one White House aide put it, "The Public Health Service comes to the Hill with a brass band, the Geological Survey comes up meekly and isn't quite sure just what's going on.") The big agencies, such as the National Aeronautics and Space Administration, the Atomic Energy Commission, and the Public Health Service, operate on the conviction that there are no immaculate conceptions in government. They pay meticulous attention to the cultivation of congressional support as a lever to open new jurisdictions and as a barrier against intruders. Rapid technological developments, shifts in national interests, and the proximity of their areas of interest tend to make them keenly aware of their boundaries. In addition, political sensitivity has been forced upon them by the acute interest that Congress takes in their multibillion-dollar activities. The Survey, however, operates in a different world. It does not have a legislative liaison man, or lobbyist, on its staff. It entrusts this function to its parent, the Interior Department, which considers the Survey one of its least troublesome and, politically, least interesting subdivisions.

In its appearance before the House subcommittee the Survey immediately ran into trouble when discussion arose on the proposed Institute of Water Research. Luna B. Leopold, the Survey's chief hydraulic engineer, pointed out that the nation now spends $10 billion annually on water control activities but very little on basic water research. "The available basic information," he stated, "the program of collection of basic information, and the basic hydrologic research on which this tremendous expenditure must rely, is actually concentrated in the Geological Survey. That basic research," he continued, "only amounts to $900,000."

Leopold then attempted to justify the Survey's view of itself as preeminent in the basic research field by pointing out that whereas the efforts of other agencies tend to be related to specific problems, such as pollution and flood control, "with respect to general knowledge of the hydrologic relations of streamflows, to geology, to vegetation, etc., in a general sense, and of the quality of that water, all agencies, public and private, depend on the records of the Geological Survey."

Committeeman Objects

These views did not sit well with at least one member of the subcommittee, Rep. Ben F. Jensen, Republican of Iowa. Addressing himself to the subject of the proposed Institute, Jensen stated that no matter what role the Survey played in basic water research, "the facts are that all other agencies authorized to make studies into all of these problems of water resources are still going to carry on as always and ask each year for more people, more appropriations. . . . It has been the experience of this committee, and this is the 20th year I have been a member of it, that whenever we establish an additional subagency, it finally ends up as a large agency that employs people no end. . . . I have the greatest regard for the Geological Survey," Jensen explained. "I think you have done a marvelous job. You have done a pretty good job of holding down personnel. The record will show that every agency in Government that holds down its personnel does a better job than agencies which are overloaded with people. Doctor," Jensen added, "I shall take a good long look at this."

Leopold, who holds degrees in geology, civil engineering, and meteorology, was then treated to a solution of the nation's water problems by Jensen, who, en route to his congressional career, did not linger in the classroom beyond high school. "I realize," Jensen said, "that water is liquid gold, so to speak, and it is very necessary that we conserve moisture every place in America. So I have been a great advocate of soil and moisture conservation and watershed treatment, because I know there is only one way to conserve water, and that is to stop as many raindrops right where they fall as is humanly possibly to do. You can carry on all the research you want to from now until doomsday, unless you can get the American people dedicated to the proposition that everyone must try to stop the raindrops where they fall. When all the American people or a great majority of the American people are practicing that program, then your water problem is over. It is just that simple, Doctor.

"You can carry on the research from now until doomsday and any other course you want to take, and you can get all the brains you want, soil conservation technicians, working on this program which you envision, but unless the thing is done as I have explained it, you are spending a lot of money for nothing," Jensen declared.

The Survey was directed to prepare a study of all water research activities carried on by federal agencies, and the matter was dropped. The appropriations report subsequently issued by the subcommittee denied the request for funds on the grounds that it had not been given any assurance that the proposed Institute would not duplicate the work of other federal agencies. The Senate appropriations subcommittee took the same action.

The episode has been bewildering and frustrating for the officials of the Geological Survey. They are now acknowledging that perhaps they have been too preoccupied with their assigned subject matter to look to the political facts of life that have a great deal to do with the rise and fall of agencies on the federal landscape.—D. S. GREENBERG