

**REVIEW**  
**of**  
**WESTWATER**  
**RESEARCH CENTRE**

**1992**

**(copy of original documents attached)**

THE UNIVERSITY OF BRITISH COLUMBIA



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M E M O R A N D U M

June 30, 1992

To: Westwater Faculty  
Richard Paisley

From: Mike Healey  
Director  
Westwater Research Centre

Here is a copy of the review of Westwater. I will be preparing a written response to the Dean. I would be interested in your comments.

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Michael C. Healey

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## REVIEW OF WESTWATER RESEARCH CENTRE

### INTRODUCTION

At the request of Dr. John Grace, Dean of the Faculty of Graduate Studies, we reviewed Westwater Research Centre on March 31, 1992. Terms of Reference for the Review are given in Appendix A. The review took all day and consisted of a series of meetings (scheduled in advance) with various people associated with Westwater. We met, one at a time, with all of the faculty members associated with Westwater (including the Director, Dr. Michael Healey), the Chairman of Westwater Advisory Council, the Dean of Graduate Studies and the Academic Vice-President of the University of British Columbia. We also met with Dr. Les Lavkulich, Chairman of the Resource Management program, which has interactions with Westwater; and at the end of the day, we had an informal meeting with Dr. Peter Larkin, former Dean of Graduate Studies.

Everyone we met was extremely helpful, volunteered information readily and responded to questions in a very open and friendly way. We greatly appreciated their courtesy. However, we did not meet with the secretary, Mrs. Jerry Pladsen except to say "hello", nor did we meet with any students. In hindsight, this was a mistake, as students and staff are important constituents of university units.

Subsequent to our visit, we learned that Professor Dorcey had been appointed to chair a new federal provincial Fraser River Management Program, under the federal "Green Plan". This will be a serious blow to Westwater as he will be on leave for 3 years. At the same time, since Professor Dorcey had been so closely identified with Westwater over the years, his selection emphasises the widespread esteem in which Westwater is held.

## BACKGROUND

Westwater was set up over 20 years ago in response to a Canadian Government initiative to encourage the setting up of a number of interdisciplinary water resource research centres in Canada. Under this initiative five year development grants were provided with the expectation that each centre would become financially self-supporting after the five year period. This seems to have been partly in response to the dawning environmental awareness at the time and partly because such centres had been set up at many American universities. Prior to setting up Westwater, a UBC study of water resource centres in the US found that they seemed to fall into one of two categories: either they were dominated and run by engineers or they were coalitions of scientists who were not engineers. One of the main aims in setting up Westwater was to try and span the various disciplines without it being dominated by any one. The first director, Irving Fox, was selected mainly because of his social science background and his record in getting physical and social scientists and professionals to work together.

As the federal development grant funding for Westwater decreased, the University had to pick up the slack. All members of Westwater staff were then funded with "hard money", in all cases with part time cross appointments in other departments and part time in Westwater. It provides an interesting example of how the university was able to benefit from a transient government program and also how such a program can permanently affect a university. In the Westwater case the university was able to adjust to the provisions of the development grant. However, the experience emphasises that the University should be very careful about accepting funds for a short lived federal initiative if that might constrain its activities in the long run.

In the event, Westwater seems to have been highly successful. It is well thought of and its work is highly respected, nationally, internationally and locally. All the other water resource centres set up in Canada as a result of the federal initiative have disappeared, as have most of those in the US. Westwater has managed to continue spanning the various disciplines involved with water - the physical and social scientists and, to a lesser degree, the engineers working with water quantity and quality. However, its main strengths seems to have been the quality of its work on policy and institutional issues, its high quality physical science work on water and integrating both of these. This owes much to the original director Irving Fox, who set the direction for Westwater and to the assistant directors, Professor Dorcey on the social science side and Professor Hall on the physical science side. Both worked with and have since followed in the footsteps of Professor Fox in maintaining the mix of activity that he initiated and the emphasis on high quality integrated research work.

#### HEALTH AND VITALITY OF WESTWATER

Westwater is a small centre with minimal support from the university (other than salaries). Despite this it has done well and has built an enviable reputation for first class applied research in issues related to water resources. Its work has focussed primarily on British Columbia and the Lower Mainland in particular, but it has also worked overseas in response to funding opportunities. The staff at Westwater seem happy and fulfilled, proud to be associated with Westwater and well satisfied with their careers. In addition to their research work, which is usually done "in Westwater", all contribute to normal university faculty activities, including teaching and the supervision of graduate students, generally through their disciplinary departments. Thus the staff seem to be doing everything that university professors

should be doing, doing it well and enjoying it. UBC can be proud of Westwater and its achievements.

### MANDATE

Unlike industrial groups, university groups normally do not have specified "mandates" that they must adhere to and against which their effectiveness can be judged. However, Westwater has a special status and recognizes that the goal of the Centre should be to conduct interdisciplinary research on policy and institutional issues in the water resource field. This is an important activity and one which is extremely difficult to achieve. Current environmental and resource management problems are such that interdisciplinary approaches are essential. The "integrational" disciplines, such as resource management, environmental management and parts of ecology and geography have been much slower to develop than the physical disciplines, which lend themselves much better to specialization, isolation of specific problems and experiments which can produce definitive answers. However, disciplines such as water resource and environmental management are extremely important to society, as pressures on resources increase and the issues become increasingly complex. Also they are strongly affected by local conditions, which makes it important to cultivate local expertise. The cultivation of such expertise becomes a responsibility of local educational institutions, such as UBC which is a provincially funded university.

The "mandate" of a unit such as Westwater, tends to shift with time and the interests of the participants. However it will be important for the Advisory Council to try and keep the "mandate" appropriately well focussed. If it becomes too narrow, this would defeat the aim of bridging between the physical and social

sciences concerned with water management. But if it is too wide, it could dissipate the efforts of this relatively small group.

## STRUCTURE

As Vice-President Birch stated, the function of Institutes and Centres is to draw together talents from disciplinary departments to focus on particular research themes. As priorities change, units come and go. Limited core funding is provided - in the form of fractions of the salaries of the individuals associated with Westwater. In these terms, the structure seems appropriate. However, it is a precarious structure in that it is highly dependent on a few people. The fact that Westwater has survived so long and achieved so much is almost entirely due to the dedication, talents, abilities and willingness of the team members to work together and to continue to do so.

There were some suggestions that Westwater should develop a graduate program of its own. However, this does not seem appropriate for a unit the size of Westwater. There are sufficient mechanisms on campus to allow students to enrol in existing departments or interdisciplinary programs. However, Westwater should probably provide a graduate seminar to give students a background in interdisciplinary studies, teach skills needed for such work and provide a forum for students and faculty in the water resource field.

The Faculty of Graduate studies provides the faculty umbrella for Westwater and about two dozen other disparate groups. It thus acts almost as an orphanage for groups with no other obvious homes on campus. "Looking after" such institutes is quite a separate activity from the main activity of the Faculty of Graduate Studies, which involves providing for graduate students the services that the Registrar's office provides for undergraduate students. It probably would be better if these

separate functions of the Faculty of Graduate Studies were to be more cleanly separated - with at least an associate dean "looking after" the various centres.

## ACHIEVEMENTS

The achievements of Westwater have been out of all proportion to the resources available to it. For this it deserves recognition and congratulations from the University. Westwater has quite a wide public following and its activities have enhanced the University's reputation with the local community interested in water resources and the environment. Much has depended on the two assistant directors (who "cover" the physical and social science activities of the centre) and their close working relationship with one another and with the director.

## PROBLEMS

### General

Although Westwater has been very successful, especially in the light of its limited resources, there are some problems. These include:

- the demands of disciplinary departments on the time and energies of Westwater faculty, which reduces the time and energy available for Westwater;
- the pressures on new faculty with joint appointments to put almost all their efforts into their disciplinary departments, again leaving little time for Westwater.
- the fact that interdisciplinary applied research is more time consuming than more specialized research and the feeling on the part of Westwater faculty members that there is not only little recognition of the additional difficulties but also that applied research is somehow considered by the university community to be inferior to pure research.



- Westwater does not seem to attract participation in its projects from faculty members other than those directly associated with it.

### **Influence of University Structure**

Some of these problems result from the university structure, not from constraints at Westwater. In general, the university is organized on the basis of single discipline units that provide strong sources of expertise in their individual fields. This system emphasizes state-of-the-art performance, motivates faculty to achieve single discipline expertise within their units and provides appropriate rewards, when it is achieved and demonstrated. Centres such as Westwater should be able to draw on expertise from these units thereby obtaining the support of highly qualified experts in their fields; and examples were quoted of other centres successfully operating in this way. However, the emphasis on specialized expertise also tends to work against interdisciplinary activities and faculty involvement in a Centre such as Westwater, which is deeply involved in complex policy and institutional issues. As a result of the university system, many faculty feel stronger loyalties to their departments than to other units on campus or towards the university as a whole. This influences both the weight of departmental responsibilities placed on Westwater members (which they seem to accept readily) and the willingness of "outsiders" to join in Westwater activities.

The university system and the problems which it creates for a centre such as Westwater, are not something which can be dealt with by Westwater on its own. They need to be addressed at a higher level in the university administration. Although it is almost an article of faith that, in a university, initiative should flow upwards from individual faculty members rather than downwards from the president, encouraging and supportive leadership can have a very strong influence on the academic "climate", which in turn, affects feelings of loyalty towards

individual units and to the institution as a whole. We believe that the senior administration at UBC should be more openly supportive of interdisciplinary and collaborative research initiatives on campus.

Particularly affected by the existing university system are new, young faculty members who feel constrained to "stick to their knitting" within their own departments, largely because of perceived pressures from the Senior Appointments Committee. They feel that the additional effort involved in interdisciplinary work is not recognized, nor appreciated and that they cannot afford to take the risk of pursuing it - at least until after they have been granted tenure. Unfortunately by the time they do get tenure, they may be so entangled in their knitting that they cannot break free to participate meaningfully in Westwater's interdisciplinary activities. The tyranny of the Senior Appointments Committee in forcing everyone into the same procrustean bed as the pure scientists is probably more apparent than real. Nevertheless that is the perception and it negatively influences young faculty as far as contributing wholeheartedly to Westwater is concerned. It also affects established faculty through the perception that pure research is somehow more valuable than applied research. Again Westwater is not in a position to refute these perceptions.

#### **Interactions with Other UBC Groups**

By virtue of its "mandate", one would expect Westwater to be actively interacting with several other units on campus, as well as with groups outside the university. However, apart from a few long term collaborators, this interaction appears to be limited. Westwater seems to have been relatively unsuccessful in drawing in other UBC researchers for short term collaboration. Perhaps they have been unable to define applied research issues that are attractive to UBC researchers outside the centre. The fact that Westwater has been relatively self-contained, and may not

have wished to expand, is probably an important reason for the continuing small size of the centre, and perhaps also for its ability to successfully sustain its central themes.

Part of the reason why Westwater has not been able to entice other UBC researchers to participate in its activities could be because it is such a close knit group with such good working relations amongst its members. Ironically the main reason for its success could also be the reason why it has not expanded and one of the factors that has adversely affected interactions with others on campus. Deliberately loosening the internal bonds in an attempt to widen the group could involve high risks for the continuing integrity of the centre. By the same token, attempting to merge Westwater with one or more seemingly compatible groups on campus, to widen its sphere of activities could prove fatal to its morale and effectiveness. But with a new leader, the old bonds have now been loosened. Perhaps this is the time to try and widen the scope of the centre's activities and the number of people and units on campus with which it interacts. With a larger group of collaborators, Westwater would be less vulnerable in the event of a loss of experienced staff.

### RECOMMENDED CHANGES

We recommend three main changes, two for Westwater and one for the Faculty of Graduate Studies, the administrative unit, under whose purview Westwater falls:

- Westwater should develop a modest teaching program at the graduate level;
- Westwater should become more active as a fund-raiser, promoter and coordinator of integrated studies;
- The Graduate Studies Faculty should become much more active in encouraging, supporting and "protecting" small units, such as Westwater, which while doing

very useful, worthwhile work find themselves swimming against the academic tide in UBC and having to fight for survival.

We believe that teaching graduate students is one of the most effective ways to disseminate research findings. Also, everyone agrees that an integrated approach should be taken to complex issues such as those involving water resources. But the integrated approach is not (and cannot) be taught in single discipline departments. Practitioners have had to learn on the job. Nonetheless formal education would obviously speed the learning of these increasingly important skills. Westwater is well placed to teach such concepts. We believe that a graduate seminar (for academic credit) would be the appropriate medium. This could also have the advantage of introducing faculty from other departments to Westwater and to its students.

We believe that Westwater should become more active in promoting integrated research studies by developing the concepts, assembling interdisciplinary research teams (from a wider pool of people on and possibly off campus) and raising funds. The Fraser Basin Project is an example of this approach. In other words Westwater should be developing more of a marketing orientation than has been the case in the past. For example, the annual report could be re-structured to be more of a promotional document and the Advisory Council could be used to promote more contacts with potential users of Westwater's findings. Leading a more market oriented centre would inevitably consume a significant part of the time and energy of the Director. But this is a vitally important function and probably necessary to the continued viability of Westwater.

Integrated, interdisciplinary studies are becoming more important in our increasingly complex world. Many of the units on campus involved in such activities fall under the umbrella of Graduate Studies. But a unit such as Westwater is very

exposed in a university culture, which while not actively hostile, is certainly not very supportive of interdisciplinary, applied research. Westwater (and probably other similar units as well) needs a senior level "advocate", who would provide moral support, encouragement and reassurance that its efforts were respected and appreciated. Also such an advocate, (who should probably be an associate dean) could provide a useful link between junior faculty members and the Senior Appointments Committee, helping to straighten our misperceptions on both sides. A key function of the "advocate" would be to champion Westwater in disputes with Department Heads over the amount of time that faculty members devote to teaching and research, in their Departments to ensure that Westwater does not get short changed.

## RECOMMENDATIONS

We recommend that:

- The Faculty of Graduate Studies appoint an administrative "advocate" specifically responsible for Westwater to promote recognition of its interdisciplinary work, encourage Westwater and take its part in disputes with other units within UBC. (The same person could provide similar services for other units within the Graduate Studies Faculty, but we are here concerned only with Westwater);
- Westwater give a graduate seminar for academic credit - to promote the teaching of integrated approaches to complex interdisciplinary problems;
- Westwater not have its own degree program. There are sufficient opportunities for graduate students to enrol with other units on campus.
- Westwater keep its emphasis on policy related interdisciplinary water resource research;
- Westwater take a more active role in promoting interdisciplinary water resource research on campus. This would involve:
  - developing interesting research concepts and "selling" faculty members on them;
  - assembling teams and acting as the research project promoter;
  - using all resources such as the annual reports and the advisory council to "market" and promote the image of Westwater;
  - dissociate itself from some of the research undertaken by its faculty members, where these do not contribute to its main theme.

**Review Committee: Michael Church (UBC Geography), Mac Clark (Environment Canada), Denis Russell (Chair, UBC Civil Engineering) and Dixon Thompson (University of Calgary).**