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APPLICATION OF RESEARCH TO MANAGEMENT

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In my opinion the method of application of any research finding to management is dependent upon the number and type of people it is necessary to influence in order to change an operation or a policy. Application can be simple and rapid if few people are involved and if they are directly concerned. For example, if a new fish disease treatment is successful, most hatchery managers will readily accept it. On the other hand, application can involve a complex selling problem and can be quite slow if it is necessary to influence many people who are less directly concerned. For example, it is the general conclusion of many studies that, under most states' licensing structures, the planting of catchable-sized trout for immediate harvest is an economically phony form of fish management. Yet, to my knowledge, only a very few states have been able to either put their catchable programs on a paying basis or else stop them altogether. Thus, I believe that to successfully apply research findings to management operations, in all but the simplest cases, you have to go through a selling process. To do this, particularly when your final "board of directors" is the angling public, your research findings may have to be rewritten by people who know how to sell things, and even then your selling will seldom be immediately.

For example, let's consider Montana's experience in stream preservation. By the mid-1950's, Montana fisheries workers knew that channel straightening ruined fish habitat, that it was widespread, and that it was almost certain to increase with the planned acceleration of the construction of the Interstate Highway System. Knowing this, we prepared a study plan, completed two years of specialized survey, and wrote a report. If our effort had ended there we would have done no more

than to document a portion of the demise of Montana's stream trout fishery. But that wasn't the end. We prepared several slide series and conducted a concentrated effort to sell certain groups of people. Groups whom we convinced, in turn convinced others, and the result was the nation's first stream preservation law in 1963. That law has been instrumental in reversing the trend of stream destruction by highway construction in Montana.

As an example of how a research report must metamorphose before it is likely to influence any decision makers, let me compare some statements from one of our original project reports with those from the slide series that was presented to our legislators.

Consider first Table 1 which lists the number, type and length of man-made channel alterations measured in 1962 on the St. Regis River in western Montana, (Boland, 1962). These data were later included in our widely distributed 13 Streams Report (Alvord and Peters, 1963). While the data on this table may be of considerable interest to a fishery biologist contemplating a similar study, the table is entirely too complex to attract the interest of a layman. Statements like those in the first footnote, which are expected to tell other workers exactly what was done, represent only a confusion factor in a public presentation.

The data from this table and 12 others like it were combined into one table in the 13 Streams Report. They were condensed further into a cartoon for our slide series. This cartoon depicted a bulldozer straightening a channel with the statement "Out of 750 miles of stream, 250 miles were altered and 70 miles were cut off and lost."

Some researchers object to their very complex and sometimes equivocal statements being made shorter and more definite. Certainly no I&E man or administrator should ever add conclusions to research that really aren't there. But I submit that if researchers cannot agree with the version of their report that it takes

Table 1. DISTANCE AND NUMBER OF MAN-MADE CHANNEL ALTERATIONS RECOGNIZED ON THE ST. REGIS RIVER, MONTANA, 1962.

Type of alteration	Railroad construction		Road construction		Urban and industrial development		Agricultural activities		Total	
	Feet* altered	No. of alterations	Feet* altered	No. of alterations	Feet* altered	No. of alterations	Feet* altered	No. of alterations	Feet and miles altered	No. of alterations
Relocated channel	19,805	17	8,934	6	0	0	0	0	28,739 5.44 Mi.**	23
Riprapping	43,888	34	35,996	49	4,039	4	0	1***	83,923 15.89 mi.	88
Channel clearance	0	0	0	0	0	0	0	0	0	0
Diking	370	3	824	5	4,355	2	0	0	5,549 1.05 mi.	10
Total	64,063 12.13 mi.	54	45,754 8.66 mi.	60	8,394 1.59 mi.	6	0	1	118,211 22.38 mi.	121

*This is the net amount of channel altered. In some instances the same footage was altered more than once.
**This 5.44 miles of relocated channel resulted in the loss of 6.39 miles of natural stream. The stream was reduced in length by .95 miles.
***This 168 foot alteration occurred in an area which had been riprapped previously.

to sell the public, then their research was not ready to be sold. A definition of all one's methodology and a discussion of all the possibilities for the final conclusions simply will not convince a busy layman to change his vote in the legislature or to change his mind on what has been to him a commonly understood policy.

I am not proposing a reduction of precision and caution among fishery researchers. Research needs to be carefully planned and skillfully executed. Research so done will frequently have its findings considered by management as a basis for operational or policy changes. But in most cases in our business, once such a decision has been made, the form of the presentation of research facts has to be altered greatly or those facts will never be applied to management.

BIBLIOGRAPHY

Alvord, William and John C. Peters

1963. Channel Changes in Thirteen Montana Streams. Mont. Fish and Game Dept. Misc. publication. 23 pp.

Boland, Ralph W.

1962. Habitat Destruction Survey. Mont. Fish and Game Dept. Unpublished Job Completion Report. D-J Project F-12-R-9, July 1, 1962 through June 30, 1963. 9 pp.