

Watershed Conference
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Good morning. I am here to present the Bay Area Watersheds Science Plan. Let me begin by trying to answer some questions about the plan that I commonly hear.

Q: What is the Bay Area Watersheds Science Plan?

A: It is a set of written instructions for the scientific assessment of Bay Area watersheds. There are copies of the plan available from SFEI.

Q: What is the purpose of the plan?

A: The purpose of the plan is to provide the scientific understanding needed to establish local goals for watershed health, and to monitor their health relative to these goals. It also hoped that the plan will nurture a public sense of ecological belonging - a sense of ecological place and purpose - by connecting people to government through watershed health care.

Q: Where did the plan come from

A: It probably has more origins than I know about.

For some contributing authors it is continuation of work begun 60 years ago.

Science is accumulative - the foundation of the plan is a masonry of scientific findings large and small.

The institutional history may be important to consider. It involves the decision by the USEPA to interpret the Clean Water Act in terms of watershed protection. This resulted in an EPA directive to assist the states in watershed management. And this resulted in the California State Water Board directing the Regional Water Boards to write watershed management initiatives. And so we see these agencies reorganizing around watersheds with the hope of more integration of pollution and erosion control, storm water management, flood management, natural resource conservation, and so forth.

In support of the Watershed Management Initiative, SFEI was encouraged by state and federal agencies to develop a plan of science. So we have.

We can also look at the plan's origin in the context of the emerging strategy for regional ecological health care. Let us make three assumptions.

1. let's assume that the Bay Area can be separated into three major landscapes, the bays, the tidal wetlands, and the watersheds.
2. on-going care of these landscapes requires monitoring their condition relative to our shared ecological goals (e.g., safe drinking water, abundant wildlife, acceptable limits to flooding and landslides, etc.)
3. goals and monitoring should be supported by scientific understanding - that there are technical aspects to the cultural subjects of ecological health and well being.

Then based upon these assumptions, we can see why ecological health care is more advanced for bays than for the wetlands, and for advanced for wetlands than for watersheds - there is simply not enough scientific understanding of local watersheds, in most cases, to support shared ecological goals or to direct monitoring of watershed health. In this region, the focus of science is literally expanding upstream, from bays, where the focus has been for a century, to wetlands, which began to come into focus in the 1970's, to watersheds, which are still pretty blurry. In most of our watersheds, there are intensive debates about alternative solutions to ecological problems that are not well defined.

Again - the purpose of the watershed science plan is to provide the scientific understanding needed to establish local goals for watershed health, and to monitor their health relative to the goals. It also hoped that the plan will nurture a public sense of ecological belonging - a sense of ecological place and purpose - connecting people to government through watershed health care.

Q: What does the Plan say to do?

A: Simply stated, it says to develop local, quantitative ecological goals based upon a scientific understanding of the past, the present, and change. It also says what to measure in the field and office, and how to interpret these measurements, to develop this understanding.

Q: OH. Okay, but what does it say to do?

A: It says to focus the scientific effort on the relationship between water and sediment supplies. It says that the distribution and abundance of desirable ecological services, (things like natural pollution control, groundwater recharge, and the support of people and wildlife), are largely controlled by processes of water and sediment input, storage, and transport through watersheds. It says that the physical processes and land uses that control water and sediment supplies comprise a dynamic template for ecological functions. It says to start with an understanding of watersheds as physical systems, and then proceed to the analysis of ecological function.

Q: But why start with the past? Why do historical studies?

A: If you have the resources, you can start everything all at once. There is no compelling reason to start with an understanding of the past. But the past must be understood. To explain the present, and to forecast the future.

There is another good reason to conduct historical studies. One of the few things most watershed residents will agree they share is the history of their home watershed. We have found that the harshest of adversaries can come together through an effort to describe their shared history. As a result, they literally come to terms with each other (i.e., develop a shared language), have a shared understanding of their problem (usually the problem is redefined) and are therefore better able to face the present and future together. Besides, local history is fun.

Q: Why is a regional plan necessary?

A: There are lots of different plans to assess watersheds. It seems like everyone has one. And there are many good assessments going on, in and out of government, in local watersheds throughout the Bay Area. But there is very little consistency in scientific approach, methods, or interpretation. Know one can answer the basic question, what is the health of the Mill Valley Watershed, how does it compare to any other watershed, or what

is the general health status of watersheds in the region? If we want to answer these kinds of questions, then a regional plan is required. In fact, the agencies that implement the Clean Water Act are required to answer these questions.

Q: So how do we get started?

A: A good start requires a partnership between watershed residents and a local agency that wants to implement the plan. WE say that the initial implementation should involve a watershed of about 10 square miles in size. It could be the tributary of a larger watershed. At this size, local partners can master the science and technology with a successful assessment within 18 or 24 months. It is important to have early success.

Q: How much does it cost?

A: I don't know. Based upon a work to date, we think the maximum costs could be \$10,000 per square mile, not including in-kind services from local agencies. The cost comes down fast when there is existing technical expertise and strong partnerships. There may be huge cost savings due to improved understanding of problems, better solutions, and better government overall. The plan needs to be tested.

Q: What would be the role of SFEI?

A: SFEI is being asked to transfer science and technology to local partnerships through training in the field and review of the findings. Thereafter, SFEI would serve as a regional library of monitoring results, and as a source of regional assessments of watershed health.

So, I'm looking for work.

Thank you very much.