to determine whether the suggestion that all of the rare plants were in the environmental preservation zone, whether in fact that was correct or not.

Mr. PAUL BUXTON: I think perhaps it lies in the definition of "rare", and I'm not sure that I can speak to that.

EXAMINATION BY THE PANEL - THE CHAIRPERSON

THE CHAIRPERSON: Mr. Buxton, I'd like to talk a little bit about scientific sampling, or the sampling approach that has been used. This is of some interest to us.

It was referred to earlier in Mr. Wittkugel's presentation, and the scientific sampling approach or the sampling approach which is referred to as the scientific approach is important because it produces information or data, and then that data, as you well know, is used in a number of different ways.

Some of the ways that the data has been used that you and your colleagues have collected have been to establish VECs to create baselines. I presume they're used in defining the pathways that exist in the ecosystem approach, but the ones that are mostly of interest to me are long-term monitoring.

I think that long-term monitoring makes... is addressed using some presumptions and as well as adaptive management, which you mentioned again this morning.
and which, as I said last time, you mention at least 140
times in the EIS and various places.

So adaptive management, long-term
monitoring are two things which are of considerable
importance, and you have stressed them repeatedly. And they
are based, to some extent, on the quality of the data that
you have. That is, you have to have a sound baseline in
order to make comparisons down the road.

You might say that that baseline
information is a kind of lynchpin.

I would like to read something to you.

This appears in Volume 4 of the EIS, and it's 6.7, and it's
just one paragraph. It says:

"The overall approach to preparation of
the Environmental Assessment Impact
Statement is science based and uses
scientific methods of investigation.
The scientific research procedure
included literature research and, most
importantly, involved original on-site
research. On-site research followed
acceptable scientific methods of
investigation and, in some cases,
modelling of various environmental
components. Research was also conducted
through public consultation meetings,"
There are two elements in that paragraph that I would like to deal with. One is, I would like to have you clarify for me, you or your colleagues, clarify for me what the scientific method of investigation is.

What are "accepted scientific methods"?

Can you define those for me?

Mr. PAUL BUXTON: I pass that question, first of all, perhaps, to Mr. Wittkugel, and then I'll confer with Mr. Kern and see if he can add further clarification.

Mr. UWE WITTKUGEL: I would think that that is certainly duveck(ph) specific or duveck (ph) dependent. There are certain ways of undertaking vegetation analysis for example. There's certain accepted, scientifically accepted ways of identifying rare species.

For example, when it comes to the rare species, we follow the prescribed approach or the approach prescribed by the Nova Scotia Department of Natural Resources, which starts at a 100 kilometre radius and slowly
moves into a smaller scale.

Those are what we would think scientifically and professionally accepted methods. And each discipline, I would think, has a different approach.

Toward noise and air quality, the measurements taken around the site are again based on other principles that don't apply to, perhaps, other valued eco assessment components. So we could go through each one of them, but in general I would think the standard question is repeatable.

Is someone there that's going out doing the same exercise and arriving at the same results? Is it in line with the existing guidelines and specifications? That's the kind of standard the environmental assessment would tend to achieve.

THE CHAIRPERSON: Thank you, Mr. Wittkugel. Could I hear from Mr. Kerns, what he has to say?

Mr. DAVID KERN: I think I would follow what Mr. Wittkugel had to say in that each discipline would have their own set of scientific methods and standards that they would follow that are acceptable within their profession.

THE CHAIRPERSON: Is there anyone else with an opinion?

Mr. PAUL BUXTON: Excuse me. Perhaps... Would it shed any light if you asked a specific element and
THE CHAIRPERSON: What I'm addressing is the way in which data was collected and the statement within the EIS that it was collected according to scientific methods or the generally accepted format of science.

Has anyone in the group heard of the "scientific method"? The "scientific method", which is the accepted method whereby scientific research is carried out?

It's a well accepted, well agreed upon, widely used and generally it defines the way in which science is done. It involves observation, which you have done, analysis, hypothesis, testing, additional hypotheses, and a great deal of replication.

There is a well defined process which, as far as I can tell, doesn't warrant the paragraph that has been used over here because there hasn't been a scientific approach except in the sense of a rigorous observation.

Now, I'm not trying to say this to mince words or to...or to back you into a corner. What I'm saying is that a cornerstone to the process that you're involved in is the gathering of data of a certain level of respectability, a certain acceptable level which we would call the baseline level.

That baseline level, it would subsequently be used to monitor. It's the baseline against which monitoring is done. And in addition, adaptive
management depends on baselines that are rigorously prescribed.

Now in your paragraph, you argue that that is what you've done, but neither one of the two individuals has given me what I consider to be an acceptable response.

Now, when you look at some of the data, for example, that has been collected, the floral survey, the faunal survey, the odonata survey, the coastal sediments, the benzoic sediments, the various photographs that have been taken, and you can even, if you wish, include some of the mammal surveys, all of these have been done by people who are competent, but they've done it in a relatively short window of time.

For example, if you go out and collect benzo and you collect 10 samples and the grab brings back 4 or 5 samples, then what you have, in effect, is 4 or 5 samples taken on one day. That's not replication. That doesn't lead to anything more than a spot sample.

It can be good data, but the question then becomes, is it adequate? Is it sufficient, in fact, to make comparisons with or is it sufficient to monitor against?

Well, scientific colleagues would say no. Now, the regulatory agencies might say: “Yes, it is an acceptable minimal level”, but you are arguing in the EIS
that you're attempting a higher standard. You're suggesting, in fact, that adaptive management is the process that you will be using, and I'm saying adaptive management requires a different set of standards.

So it seems to me that the... First of all, I believe that the paragraph which has been written here is not appropriate given the standards against which you're setting yourself. It may be acceptable within other standards.

Now the second part of that paragraph, I would like to raise the subject of public involvement, which we raised on Saturday.

Now it seems to me that we ended on Saturday with the view that public involvement was less than it could be. It seems to me, if I recollect exactly, it was something to the effect that: "We have an open door policy. We encourage people to come", but it doesn't necessarily engage the community to the full extent, perhaps, that CEAA would like.

I'd like to know where the public consultation, the traditional community knowledge and so forth is in your surveys. Can you point to specific cases where the knowledge about tides and currents and formal surveys and all the rest of it is?

Mr. PAUL BUXTON: Yes. I'm not quite sure that I would agree that that's where we left off