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To: Delta ISB <[disb@deltacouncil.ca.gov](mailto:disb@deltacouncil.ca.gov)>

**Subject: Comments on 7/14/2020 Draft Report--The Science of Non-Native Species in a Dynamic Delta**

Thank you for the opportunity to review & comment on the public draft of the report. The report is an informative & useful beginning for addressing non-native species issues in the constantly changing Delta. It is needed & timely as non-native species are one of the five fundamental drivers of ecosystem change & a multi-dimensional issue. The report provides an impressive compilation of voluminous scientific information in a form that will help agencies understand & manage the consequences of invasive species of plants & animals in the Delta as well as elsewhere in the San Francisco Estuary. Kudos to the DISB for their efforts!

These comments are based on substantial experience with non-indigenous species policy & program development & management over an extended period in the past.

From my perspective, the scope of the report is limited by language in the authorizing legislation & Delta Plan which will reduce the effectiveness of future management efforts developed based on it. Those controlling documents refer to invasive species of plants & animals. The distinction between "non-native species" & "invasive species" is recognized in the introductory material (pages 2 & 6), but elsewhere in the report the focus is primarily on invasive species. Is this because the term "invasive species" is used in the controlling documents? "Invasive species" may reflect common usage in the community & could be synonymous with "non-native," but that does not appear to be the case. Does recognition of this distinction reflect a preference that could not be realized due to the policy constraints?

Numerous titles have been employed as titles over the decades to succinctly describe & encapsulate the non-native species issue. Loose use of titles can be innocent, uninformed or undisciplined, but this is confusing or distracting, sometimes to the point of contention. The extent such titles succinctly convey the scope & focus of efforts going forward can have significant, even profound, impacts on the nature of the research & management programs established. Focusing on invasive species is inherently more reactive than a focus on non-native species. Once a new species is detected & recognized as invasive, the community can only try to control it or must accept it & its consequences. It is a losing battle.

Focusing on the broader context of non-native species is a much more proactive posture in that opportunities to more effectively prevent introductions are created thereby avoiding adverse consequences & costs. It changes the nature of research & management activities employed. Rather than focusing primarily on control actions,

resources can be devoted to other more potentially effective actions. This would include ongoing identification of pathways by which non-native species might be introduced, assessing the potential impacts & risks of possible introductions & seeking to block those pathways before introductions occur or react sooner to introductions that do occur.

Under either approach, comprehensive, timely monitoring of the ecosystem will be required. Also, all proposed intentional introductions should be rigorously assessed using established protocols with the entity proposing the introduction bearing the burden of proving introduction will cause no harm. This latter requirement will require more research to ensure the protocols are adequate to assess introductions needed for the ecosystem to adapt to climate changes.

A related concern is that the report focuses only on plants & animals consistent with the authorizing documents. Presumably all organisms in the animal & plant kingdoms are included in those categories. But introductions of organisms from other kingdoms such as fungi & bacteria can also be harmful & should be included in the scope of the report. Even non-living entities such as viruses should be included.

These concerns can be addressed at least in part by editorial clarifications & some additional language. If useful, I will provide specific suggestions. If not resolved now, these concerns should be addressed with future reports &/or in deliberations within the communities of interest going forward.

Regards,

Bob Peoples