Ray Hilborn presentation

I am Ray Hilborn, a professor at University of Washington, and I am testifying on behalf of the American Sportfish Association. I have received no consulting fees or benefits for my testimony before the SSC and the Council.

I want to bring over 50 years of fisheries experience to the discussion of the quillback assessment and rebuilding plan.

I want to start with 3 uncontestable facts.

1. **Stock assessments, even with the best data can get it wrong.** I believe many would agree that the International Pacific Halibut Commission has perhaps the best data in the world; surveys, length, age; they have it all and they have had some of the best stock assessment scientists in the world doing their assessments. Yet twice in the last 35 years the IPHC staff have recognized that their assessments were way off, perhaps a factor of 2. Once they were underestimating the population size, another time overestimating it. Within the Pacific Council, the assessment for widow rockfish mistakenly (in retrospect) identified the stock as overfished, and mistakenly (in retrospect) identified petrale sole as not overfished. Getting the status of widow rockfish wrong had very serious negative impacts on the fishery, getting the status of petrale sole wrong does not seem to have caused any long term conservation problems.
2. **Stock assessments relying almost exclusively on fishery dependent length data are** much less reliable than stock assessments with survey data, age data and fishery independent size data.
3. In mixed stock fisheries under current U.S. management approaches, a mandatory rebuilding plan for a single species can dramatically decrease the social and economic benefits derived from a fishery.

The net result of these is that as we assess more and more species in the mixed stock fisheries, and the data for these species are increasingly data poor, we are in danger of closing fishery after fishery based on assessments that later prove to have been wrong.

Now let's consider the benefits of a rebuilding plan.

If you look at the California quillback assessment Figure 57 you will see that in its current state as estimated in the base case model the stock will produce about 8 tons of long-term yield compared to 10 tons at MSY, and even worse, at the rebuilding target the yield will also be about 8 tons. But the Council is being asked to effectively close the inshore fishery "system" is saying that we have to effectively close the inshore rockfish fishery, in order to build a single stock that will achieve no increase in yield, but at an enormous cost to the yield of other species. We have gotten into a management approach that produced this totally unreasonable trade-off. What sensible manager would close a highly valuable sport and commercial fishery to increase one single species yield by a theoretical 2 tons. It makes no sense and it seems to me the Council should find a way to avoid this. Indeed I suggest the Council would be irresponsible if they do not simply say "this is absurd."

Now let's dive into the rebuilding plan a bit.

A fatal flaw in the rebuilding plan and the assessment is that it ignores the large portion of the habitat that is closed to fishing or effectively inaccessible to fishing. The assessment is really assessing the stock status in the fished areas, and ignoring all the fish found in the unfished areas.

The data shows the average length of fish is now as high as it has ever been, which is where the major signal for level of stock depletion should be coming from. Furthermore, looking at the relationship between spawning output and recruitment (Figure 25), the average recruitment at low spawning stock sizes (below 8) is certainly as high or higher than at larger spawning stock sizes, so we don't seem to be recruitment overfishing. Figure 32 shows that the best fit to the data is with the highest natural mortality rate evaluated, 0.12, and that if 0.12 is used in the assessment (Figure 34) the stock is above the management target. Figure 63 shows pretty poor fits to the recent commercial length frequency data.

Finally, the idea that the stock is so depleted and exploited at such a high rate even though much of its habitat is closed to fishing seems very unlikely. One of the proposed purposes of MPAs is to protect stocks from overexploitation and rather than relying on precautionary catch limits, the closure of much of their habitat should provide the needed protection for the species. Some will argue that the assessment may be too optimistic, but you always have a large proportion of the habitat protected from fishing as insurance.

In summary, the assessment model used for California quillback rockfish may be the only available science, and the authors did a very thorough exploration of the sensitivities. But in the end, the assessment conclusions rely on specific assumptions about mortality, growth and selectivity and ignore the unfished areas. The choices of parameters, and ignoring unfished areas is simply not best available science. In my opinion there are far too many uncertainties associated with the rebuilding plan for it to be used as the basis for a major change in the management of the inshore rockfish fishery.