

**Marine Life Protection Act Initiative
Public Comments Submitted
through June 23, 2010**

From: Pat Wilson
Sent: Sunday, June 20, 2010 10:45 AM
To: MLPAComments
Subject: Impact to Del Norte County

Please take note of the accompanying attachment. In brief, Del Norte County is on the brink of an reversible trend that needs your attention.
Patrick D. Wilson Capt. ret. USMM

Crescent City Harbor Board

During the operation of Deep Sea Research's recovery operations and archeological mapping of the possible scatter field of the Brother Jonathan I spent two weeks with Willard Bascom, past director of Southern California Coast Water Research Project, (SCCWRP) Scripps Institute of Oceanography to name a few of his accomplishments to our knowledge of the oceans and beaches of the Earth.

While transporting Willard Bascom to the Research Vessel "Cavalier" he said Crescent City Harbor is in it's death throws and will not recover with out a great deal of money expenditure (1996). He stated "Harbor design flaw, entry True North with groins and jetties forming a trap vessel for the "North shore Drift" of sand deposition".

With Tsunami engineering still waiting for approval by State agencies and the withholding of approved emergency funding and like matching funds our harbor is in a quandary. The sand cannot be removed and any further restrictions as to ocean catch or use with in our already overburdened state and federal laws will spell a disaster to the one jewel left for access to a bountiful resource for our community.

Details:

1. Breakwater redesign to allow for natural flushing on a seasonal basis.
2. Permit on an emergency basis for dredge spoils for off shore disposal. And supply funds for that removal and disposal.
3. Tsunami engineered plan enhancement for immediate implementation.
4. U.S. Army Corps of Engineers, U.S. Coast Guard, Blue Ribbon Panel MPLA
5. Have Impact Assessment Inc. do a POST socioeconomic and risk analysis of Del Norte Co. prior to implementation of any action taken by MLPA.
6. Impact analysis on existing movement of ex-vessel product flow and destination, i.e. Ling Cod in the round and fillet marketed in Del Norte County and intra, inter state destinations. Research shows movement of fish in round travel from Crescent City to Fort Bragg by truck and is combined with their catch and is then transported to Clackamas Co, Oregon for processing and then shipped back for retail sales in Del Norte Co. Retail sources say they have a two day window for sales and throw up to 80% of unsold product out.
7. Del Norte County was one of thirteen counties in California that funded the building of the Golden Gate Bridge and has a voting board member on the "Golden Gate Bridge, Board of Directors" Utilize" that resource to the fullest potential.

Solutions:

Funding- Grant writing Bill Gates Foundation, Warren Buffett

Golden Gate Bridge Authority- possible source of used dredge, barge and necessary consultation that may add to direct knowledge of spoils capture release

Complete documentation of socio-economic risk and future impact of State, Federal, City Govt. County Govt. and Bureau of Indian Affairs and the correlation of Del Norte County having slipped from 56th to 58 out of 58 counties of California while having one of the richest natural resources,(plural) in the state. Before any implementation of Marine Protected Areas in or bordering this depressed community.

From: Allen Sansano
Sent: Tuesday, June 22, 2010 9:26 AM
To: MLPAComments
Subject: Conversation with Will White and shortcomings of the SAT modeling

This is a cleaned up version of an ongoing email conversation Ive been having with Dr. Will White. All my comments are in bold and begin with <Allen>. All of Wills comments are non-bold and begin with <Will>. Comments indented to indicate sequence of time. **Blue** are first round comment/response, **Red** are second round comment/response, **Green** are third round comment/response.

One major point to note is that throughout Round 1 and Round 2, the information that the modeling teams have been providing on biological and economic impact is misleading. The modeling was done over an area much, much larger than the NC study region. The area was from Pt Reyes to Cape Blanco. This means that the RSG was getting misleading/faulty feedback on Round 1 (external) arrays and proceeded through Round 2 not knowing any better.

Note that there is also a long discussion on the comment, Assumptions about fishery management outside MPAs influenced the outcomes more than differences between proposed External MPA Arrays. The SAT analysis paints a picture that is broad in terms of possible outcomes. However, the SAT makes no attempts to install a sense of realism into the analysis and completely avoid any conversation about assumptions in fisheries management.

-Allen

<Allen> I made a public comment at the last RSG about the modeling work done. The gist my comment was that there was very little difference in terms out biological improvement (% of virgin biomass) between any of the external array proposals and even the baseline (no MPA's). See the Bioeconomic Presentation, slides 15-16 (<http://nrm.dfg.ca.gov/FileHandler.ashx?DocumentVersionID=31794>). When I say very little difference I am referring to the 1-2% difference, which seems like it's in the noise of these types of models.

<Will>There are a few things going on here. First, in this first round the predictions for biomass and yield were summed up over the entire model coastline, which ranged from Pt Reyes up to Cape Blanco. So the changes produced by the NCSR MPAs were only affecting a subset of the coastline, which would tend to reduce their overall impact.

<Allen> This also means that the economic impact is also portrayed on the low side, right?

<Will> Yes.

<Will>In the revised round 1 results (using more species and the updated habitat map) and subsequent results, the calculations will only be made for habitat inside the NCSR.

<Allen> Where are the "revised round 1 results"?

<Will> Those are still being produced...working on them right now actually. It took us a while to get the new habitat map and the updated larval connectivity data from our various collaborators.

<Allen> But in the meantime the RSG is pushing forward with potentially misleading data. I would like to submit a comment into the record as such. I wanted to check with you before referencing your correspondence in any way. Are you ok with this?

<Will> I would like to clarify the nature of the missing data - in the initial round 1 analysis we had habitat data for the entire coastline except for a stretch just outside of Humboldt Bay, which was mostly sandy bottom anyway, and did not have much of an effect on the

rocky bottom species that we modeled. Then the new larval connectivity data just let us model several additional species (brown rockfish, red abalone, Dungeness crab). So I would not say that the information was misleading, but it was incomplete (if I had thought it would be misleading, I would not have submitted the model results). Not ideal, obviously, but we scientists have been doing our best given the timeline set by the Initiative.

<Will> But even considering that, your point is correct, especially for the MSY-type and Conservative scenarios. That is because there is really not much fishing outside the MPAs in these scenarios, so there is not much difference between inside and outside. You'll notice that there are much greater differences among the MPA proposals in the "unsuccessful" scenario (more like 10 percentage points) because there is a bigger difference in the level of fishing inside and outside.

<Allen> I don't see 10 percentage points in the presentation. For the "Unsuccessful Management" scenario, the UCSB model is showing a 5% difference between each array proposal and the UCD model is showing more like 3%. I'm not looking at the revised round 1 results, so perhaps that has changed?

<Will> Ah, yes, you're right - 10% points is the maximum spread but most of the differences are in the 3-5% point range.

<Will> Beyond that, the lack of major differences among the proposals is really a product of all the other SAT guidelines (size & spacing, habitat replication, etc) which constrain the proposals to be relatively similar to each other. There are only so many ways to meet all of the science guidelines, and generally speaking those other guidelines constrain the proposals to do rather well in the model evaluation. In prior study regions we have occasionally seen proposals that had huge differences in the model evaluations, but those proposals almost always did poorly in the other evaluations, and did not advance to further rounds.

<Allen> SAT guidelines do not explain the lack of significance differences between any of the arrays and the no-MPA option. For the UCSB Unsuccessful Management scenario, the "P0" option (no-MPA) is only ~3% lower than the lowest of all the arrays. For the UCD Unsuccessful Management scenario, the P0 option is also only like 3% lower than the lowest of all the arrays.

<Will> Yes, that's a good point, although I would not use the word "significance" just because it has a statistical connotation that is not really relevant here. What I said before does explain why the MPAs tend to be similar, and it's possible that without the constraint of the guidelines one could design an array that actually does worse than P0, or maybe even one that does much better than seen here, for the particular species being modeled.

<Allen> Didn't mean to use "significance", was trying to type significant.

<Will> But probably a better conclusion is the one you're getting at. Even though the model predicts that the various proposals will lead to very high biomass within particular MPAs (you can see this on the model result maps that we generate), the total impact on coast-wide biomass is much smaller.

<Allen> I think I know the answer, but wanted to make sure I'm clear. When you say "within particular MPAs", you mean within particular MPA ARRAYS right. The outcome is not the biomass within the set aside MPAs themselves, right?

<Will> Actually I meant within individual MPAs. My point was that if you look at the maps of biomass predicted for each array, you see large accumulations of biomass within individual MPAs in the array. So

there may be large local effects even if the coast-wide effect is small relative to Proposal 0.

<Will> It's worth noting that the general impression among a lot of scientists and conservationists that MPAs would be expected to have a large effect on coast-wide biomass is probably derived from some much earlier modeling work. Back when folks were first starting to build models like this, they typically assumed that fishing was outrageously high outside of the MPAs, so there was really no larval production there. And in that case, there is a huge effect of MPAs on coastwide biomass, because without the MPAs the population crashes. But obviously that is not very realistic for most parts of the world, and we have moved away from that assumption. That is still a criticism that folks like Ray Hilborn sometimes raise ("the models assume there is no larval production outside of MPAs") but that is a critique of those simpler early models, not the current ones.

<Allen> Even the first conclusion on the last slide states: "Assumptions about fishery management outside MPAs influenced the outcomes more than differences between proposed External MPA Arrays"

<Will> Yes, that's right.

<Allen> But why would there be any differences at all? The PFMC manages for MSY (40% virgin biomass). They manage for this regardless of whether there are MPA's or not. So while the virgin biomass would go up in the MPAs, I would expect it to go down outside the MPAs to maintain the overall desired management level of 40%. Yes, fish densities (and therefore CPUE) should go down. And the weighted average across the entire ocean space should still be 40%. Any reason the models don't show zero difference in total biomass outcome?

<Will> This is a very good question. Partly this arises from some of the terminology we have been using in the process, which I think may have produced some confusion about what the models are trying to do. In general what we are trying to capture with those 3 management scenarios is the uncertainty we have about the status of most fisheries, both now and in the future.

<Allen> Actually I was asking about the lack of significance difference within and of the scenarios. I understand why there are differences between the scenarios and why the various scenarios are run.

<Will> Ah, I misunderstood the question. Well, I guess we could run a model that simulates a fishery that is always managed to a particular biomass level. But that wouldn't be very revealing in terms of the relative costs or benefits of the proposals, at least in the overall summary values (you'd still see differences in the spatial maps). We figured it would be more useful to compare the different proposals for a given level of fishing effort outside the MPAs.

<Allen> Why wouldn't it be very revealing? The fisheries IS managed to a particular biomass level. I'm sure the space of outcomes is very interesting, but a real world sense must be instilled on it. One must be willing to bridge the gap and make a statement that a particular outcome is more realistic than others. If the science is unable to determine that, what good is it? It just leaves the outcome as equally confusing as it was to begin with.

<Will> OK, fair point. My group is going to be doing some additional modeling to support the adaptive management of the Central and North Central Coast MPAs (and hopefully the other regions, eventually), so including biomass-targeted management is something we will have to look into. For now the modeling in rounds 2 and 3 will almost certainly continue with the same framework of a fixed level of effort across all proposals within each scenario. After all - the PFMC doesn't even know how they are going to do with the biomass issue yet.

<Will> But your question does raise an issue that fisheries folks are trying to deal with - how exactly should MPAs be included in regional stock management. There are really two questions: 1) should biomass inside MPAs 'count' (probably depends on how much connectivity there is) and 2) will the MPAs screw up the methods use to assess the stocks. I've been following this in the literature a bit, but I don't know if PFMC has dealt with it yet. I'll have to ask around.

<Allen> Would be interested in knowing too. I'll ask the PFMC members I know and let you know the result.

<Will> For example, you mention the black rockfish 70% biomass estimate. However, the most recent black rockfish assessment I have read (Sampson 2007) makes it clear that they have had to guess at one of the key model parameters, the steepness (slope at the origin) of the stock-recruit curve. The value they assume is not terribly conservative, although it is in the ballpark of that estimated for some other rockfish species. But all of the estimates of the biological reference points (the critical value of SPR, MSY, and biomass depletion) really depend on that number.

<Allen> Yes but ... if you look at the relative biomass over time, you'll see that the biomass level is twice that of 10 years ago. It begs the question "why?". We can argue whether 40% is the right MSY number. And I personally would like to see it be more conservative (higher!). However, the fact of the matter is that harvest of rockfish today is not limited by MSY targets getting hit. It is limited by quotas on yelloweye rockfish bycatch that effectively limit the harvest of all other species. The harvest on those other species (including all rockfish and lingcod) is at a level that leaves the biomass at a level much, much higher than any MSY target we might discuss. Effectively, MSY management doesn't come into play here and it won't for many years (decades!) to come since it is expected that yelloweye recovery will take a long time. This also means we should be looking at the "Conservative Management" scenario as being more realistic.

<Will> I'm still a little wary of the black rockfish data because the assessment pools the stock over such a large region, and the growth in biomass is to some degree due to a couple of really strong recruit year classes from a few years ago, so there is no guarantee the trend will continue. But my sense is that yes, current management in this area is pretty conservative. There is a lot of debate in the SAT about the right time scale to think about these things, and whether current management is the right guide to use. The argument is that eventually the rockfish stocks will rebuild, the fishery will be opened, and then who knows what will happen. But that is a long way off, and the current management is the only information we have.

<Allen> And I could argue that the crash in the stock was due to a string of bad recruitment years. (Yes, coupled with high harvest). If the current management is the only information you have, then back to my comment above about assuming that we manage to a particular level. We do!! :)

<Will> Of course not all the species being modeled are managed as conservatively as rockfish are right now.

<Allen> They may not be. But they are supposed to be. I don't think we want to get into it species by species, so I won't go there, ok?

<Will> The other difficulty is that the stock assessment pools black rockfish from Oregon and California, but it is likely that the Oregon part of the stock is in much better shape. A recent, independent assessment of black rockfish in northern California only (O'Farrell & Botsford 2006, Ecological Applications 16:977-986) suggested that portion of the stock may not be doing as well. Long story short, even for a species for which we have a lot of data like black rockfish, we are still missing some key pieces that we would need for an unambiguous assessment of how well the stock is doing.

<Allen> Truth is, stock assessments in 2006 or 2007 are already out of date, given the steepness of the recovery (doubling in 10 years). The stock is getting better, it's getting better

at a rapid rate, and it is due to fisheries management practices, NOT MPA's. 10 years ago when the MLPA was first being brought to the table, there may have been a need for it. But our fisheries management has adapted and changed to the point that the need for MPA's is questionable and the effectiveness of them is equally questionable.

<Will> I completely agree that MPAs are not always a necessary or effective tool for fishery management. I would also agree that not all MPAs are effective in meeting their goals (although many do - time will have to tell for the ones that go in on the North Coast). But the catch is that fishery management is not really the goal of the MLPA - the act mentions conserving and rebuilding depleted populations, but it also has language about protecting natural diversity and abundance, operating as a network, etc. So I think it is useful to see how the alternative proposals might affect some of the important fisheries in the region, but just because they may not do much to help a particular fishery does not mean that MPAs won't be placed in order to meet the other goals.

<Allen> Have you seen this recent press release from NOAA?

http://www.noaanews.noaa.gov/stories2010/20100510_swordfish.html

The seminal species over which significant amounts of "Save the Ocean" energy has been spent, the Atlantic Swordfish ... well, that species is recovered and is healthy.

<Will> I hadn't seen that, thanks for the link. I haven't followed the swordfish story too much, but it seems odd to complain that a lot of conservation energy was spent on a species that was in pretty severe decline, and now it has recovered. Surely the conservation effort might have been part of the reason? But if you're worried about the environmentalists running out of causes, I'm sure the same folks are trying to do something about Atlantic bluefin tuna now.

<Allen> The conservations effort is a LARGE part of the reason. I am a conservationist fisherman after all. My point is that fisheries management works, even without MPAs. My second point is that I can now eat swordfish after 10+ years of not doing so!!! Yay!!

<Will> Yes, I agree on both counts.

<Will> Too bad about the Petrale sole decline, though - those guys are really tasty.

<Allen> Petrale sole are harvested using trawling techniques outside the state 3 mile limit. MPA's aren't going to save them either.

<Will> Yes, and they also move around quite a bit. We considered including a flatfish like Petrale in the models, but couldn't get good information on larval dispersal or adult movement.

<Will> So, because there is that uncertainty, and we know that some species are doing better than others, we didn't want to run the models using the same level of fishing for all species, nor did we want to just pick a single level of fishing for each species (because we would probably be wrong, and things might be different now and in the future). So as a compromise we show a pretty wide range of fishing levels in order to capture the range of possible results. Ideally we could weight the results for each species according to which level of fishing is more likely - that is what we did in a paper based on the North Central Coast region (it is still in press; I've attached the page proofs although there are a few typos in that version). So in that example we weighted heavily towards the "conservative" scenario for canary rockfish but more towards the non-conservative scenario for black rockfish, based on our reading of the stock assessments and the other available data. Unfortunately the rest of the SAT has been resistant to that approach in the official evaluations because there is some subjectivity involved in that kind of weighting.

<Allen> Damned if you do, damned if you don't. The presentation of the data makes it easy for readers to assume the worse case scenario as the one that needs attention. This thing of it is, we don't really know, and we're just trying to cover the whole state space. One side takes the conservative approach and the other takes the aggressive approach. Both are probably wrong with the truth lying in the somewhere in the middle. But the truth doesn't matter to most. They've already chosen their religion.

<Will> Hard to argue with that. And of course in the past study regions it seems that the BRTF has ended up with a proposal somewhere near the middle of the pack.

<Allen> **Actually I think they arrived at MPA's that are below the pack. They cherry picked from individual MPA's within the various array proposals. The strength of the individual arrays was that they were built as a whole, with size and spacing, connectivity and habitat coverage in mind. Breaking them apart did no one justice.**

<Will> Now, as to why every scenario does not simply work out to having 40% virgin biomass. The idea with the models is that in the real world, we don't really know what the *actual* values of unfished biomass, MSY, or the minimum biomass needed for persistence. So yes, real-world management targets certain levels of biomass and spawning potential ratio, but whether we actually meet those targets is uncertain because we don't know what the actual values of those targets are. That is why, for example, we managed rockfish with a target of F35% for many years based on an earlier estimate of the stock-recruit steepness, and that turned out to be incorrect and led to depletion, even though the fisheries were meeting the target. In preparing the models, we specify what the actual values of all the key variables are, so in theory the models could do exactly what you say - optimize at 40% unfished biomass every time. But instead what we do is assume that the fishery is being managed for some target, but either we get that target about right (MSY-type management), or we get the target wrong - either erring on the side of too much fishing (unsuccessful management) or erring on the side of too many restrictions (conservative management). So we are modeling the possibilities of what management might do, given limited information, rather than what management is attempting to do (manage right at 40%).

<Allen> **But if you manage for some target (choose one!), why would there be any differences within a scenario between the various array proposals. Why would one array hit/miss the target any more than any other array? Here's an example I like to use.**

The PFMC will still manage to a target MSY level (40% virgin biomass) regardless of what MPA's exist or not. And in doing the math, it will make fishing outside the MPA's worse. How so? Let's say 15% of the region is set aside in MPA's and the biomass density goes up to 100% in those regions over time. That means 15 of the target 40% biomass (again MSY) is in the MPA's. That leaves the other 25 of the 40% biomass to be outside the MPA's. To realize the 25, one only needs to manage the area outside the MPA's to be at 29% biomass ($85\% * 29 = 25$). What just happened here? Well, we just went from 40% biomass evenly distributed to 40% biomass unevenly distributed with 15% in the MPA's and 25% outside the MPA's. The density in the open fishing areas goes down, CPUE (Catch Per Unit Effort) goes down. We still catch the same amount of fish, but it takes more effort to do so.

So choose your target. Fisheries management will ensure the results are the same at the end of the day. If this were true, why then do the models results in different outcomes for a given scenario?

<Will> Yep, I understand your question now. I think I answered back up above - sure we could do that, but I'm not sure how much we'd learn. Part of the point of the model is to figure out how the proposals differ.

<Will> So when reporting these results we call the scenarios "unsuccessful management" and so forth, but we don't mean to indicate that management would switch to a strategy of lower biomass or anything like that. Rather we just mean that fishing would happen to be more than it should be because of the limits of fishery data.

It's also worth mentioning that the model analysis is supposed to capture very long-term outcomes, perhaps even longer than some of the rebuilding timelines. Presumably at some point the rebuilding will end and we will start fishing more intensively again, and of course we may make mistakes again. In a world with perfect information, your comment would be exactly correct. What we are trying to do with the model is represent the idea that our information is imperfect. If we are wrong in one direction (unsuccessful management), we will get one set of results; if we are wrong in the other direction (or if we are about right) we will get another set of results.

<Allen> And while you are trying to represent that our information is imperfect, there are those out there that presume it is entirely perfect. Again, back to choosing religion.

<Will> Indeed. And you can find those folks on both sides of the debate.

<Will> I realize this has turned out to be a very long answer. I hope it helps - if not, I promise I will be better about responding next time!

<Allen> I really appreciate you taking the time to discuss this.

<Will> You're welcome. And thanks for the excellent questions/comments - this has been thought-provoking. Let me know if I can answer (or try to answer!) anything else about the models.

<Allen> Of course the rest of my statement is that due to RCAs 20 fathoms and deeper, and shortened seasons to protect yelloweye, fish stocks such as black rockfish and lingcod are currently at 70% biomass already. So some might argue that 40% target is too low, but in reality we're managing by the bycatch of the weakest link (yelloweye). But the above argument should still hold, I wouldn't expect any increase in total biomass due to MPAs and I would expect fishing to get worse.

Am I missing something?



Support Marine Protection on California's North Coast

Dear

EUREKA CA 955



The coast and ocean are a critically important part of what makes the North Coast of California a great place to live and visit. The Marine Life Protection Act provides us with a unique opportunity to map a vision for our coast that will benefit all Californians. A well-informed network of marine protected areas from Point Arena to the Oregon border will ensure a rich legacy of ocean resources, enduring respect for indigenous cultures, and a vibrant fishery for generations to come.

I urge you to support the protection of the North Coast's diverse marine resources and way of life as implementation of the Marine Life Protection Act proceeds in the region.

MLPA Initiative - BRTF
c/o CA Natural Resources Agency
1416 Ninth Street, Suite 1311
Sacramento CA 95814

RESOURCES AGENCY OF CALIFORNIA

JUN 09 2010

RECEIVED BY
Office of the Secretary

Sincerely,

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