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These summary minutes are intended to capture broad areas of discussion only. An additional set of Questions and Answers arising from the Workshop discussions is also appended to these summary minutes.

The workshop was convened by IPHC Executive Director, Dr. Bruce Leaman. Attendees gave self introductions, identifying goals for the workshop including concerns about catchability, stability, and conservation. Bruce stressed that we are not making decisions at this meeting, and that a 'food fight' can be an unfortunate consequence of allocative processes. The intention is for the workshop to be interactive, using the provided Widget to evaluate policy. Bruce introduced the agenda and process for the workshop and noted the necessary characteristics of candidate apportionment methods. He discussed the expected workshop output and summarized the present state of the halibut stock, with a series of slides illustrating trends in CPUE, bycatch mortality, age of captured halibut, and removals vs. contributions to the spawning biomass.

Dr. Juan Valero gave a historical perspective of the changing exploitation over areas and time. The current condition is that the center of distribution is now in central Alaska, and very few older fish reside in Area 2B. Historically, the relative contribution of different areas to the total catch has changed dramatically. On a perspective of the last 100-120 years the distribution of older fish (>age 15) has changed dramatically, particularly in the more eastern areas. Juan introduced questions from the last workshop (BAW08) and the 2009 Annual Meeting, and presented the widgets as a tool to explore these situations. He presented the major widget assumptions, including area-common growth, maturity and selectivity, eastern migration, and time-invariant recruitment estimates. The audience asked for clarification of a number of the widget assumptions, and for the source of the historic data. Juan replied on early data sources as developed by Thompson and Van Cleave as being CPUE based, with Bruce commenting that these early estimates were fairly coarse.

A long discussion followed regarding downstream effects of bycatch. Responding to questions about relationships between Areas 2 and 3, and the effects of the large trawl bycatch in Area 2B, Bruce said we don't know the direct link between Area 2 spawning and recruitment, and identified that as a primary question. Juan clarified that we are talking about legal sized fish, bycatch of which should have little downstream effect, while the bycatch of sublegals likely does have an effect. Dr. Hare further explained the 'pound for pound loss' statement for sublegal bycatch, having a bit more of an effect in the Bering Sea due to the smaller size of the bycaught fish. Historically we thought that migration was largely complete by age 8, and the impact of bycatch losses was mainly local. With new evidence of continuing adult migration beyond age 8 y there is likely more of a downstream effect, but even so it should not be major because most of the migrating fish are still small and their selectivity to upstream halibut commercial fisheries is low. Responding to a question about migration and density, and whether recruitment is density driven (*vis-à-vis* the trawl bycatch removals), Bruce said we have done no analysis re: density effects on recruitment. There followed a discussion of upstream-downstream effects of migration, and how so many fish could historically have been taken out of Area 2. Questioned as to whether Area 2B bycatch was taken from spawning fish, Steven and Bruce both responded that the most of the bycatch is not from spawning fish, and that most spawning is over by the time we have commercial removals. Juan mentioned that one of the first fishery regulations taken by the Halibut Commission was to implement a winter closure to protect spawning aggregations.

The use of early Area 2 data as a historical guide to the future was questioned. Bruce and Juan both stressed that historical data is used to give perspective and not as a predictor of the future.

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Following a break, Bruce presented criteria or metrics of performance for consideration. Steven followed with a presentation on the development and performance evaluation of the IPHC harvest policy. The major points of the policy include it being based on female spawning biomass, incorporating a historical minimum, and having removals governed by limit and threshold reference points, and a constant harvest rate, with long data sets used to get an idea of the historical behavior of the stock. He discussed how harvest control rules work and the criteria we use to evaluate a management regime. On the topic of density dependent growth, he said that we might not see high growth rates for a while, and that growth depression could result from density dependence competition with other flatfish species, especially arrowtooth flounder.

Discussing the harvest policy analysis, Steven said Juan's widget considers factors at the equilibrium situation while he [Steven] looks at the whole process. The spawning biomass plot was questioned as showing us at a currently high spawning biomass, disagreeing with the current stock assessment (250 Mlb vs. 350 Mlb). Steven pointed out that the simulation slides dealt only with Areas 2 and 3A. A 20-year time horizon for projections was suggested, particularly for the color harvest policy evaluation graphs presented by Steven. Staff discussed the longer projections, and stated the intent to try to provide the shorter term simulations, noting that they are not forecasts. Steven continued with a presentation of age composition and female maturity. Questions were asked about gear selectivity differences affecting age selectivities or distributions in different areas, and what these distributions looked like 15 years ago. Staff replied that the pattern seen in survey and commercial age distributions were very similar, with both data sets showing younger fish being caught in Area 2 as a whole. As to whether staff adjusts for different fishing patterns in Area 2B that could affect commercial age distributions, Steven said he is not factoring in different fishing patterns, but Juan said the overall pattern of lack of older fish in age distributions of Area 2, would not change, since we also use the survey data which are not affected by changes in commercial fishing patterns. The depth distribution of the survey was presented as mirroring very closely the depth distribution in almost all areas.

After a break, Steven continued presenting survey-based apportionment methodology. There was a long discussion about the survey data source, including comments about the depth coverage, the potential difference between systematic vs. random distribution of survey stations, gear hauling speed, and survey timing relative to the commercial fishery, with up to six weeks to a month difference from year to year. The large survey grids were questioned as not capturing the true essence of halibut density, and it was pointed out that at the annual meeting commercial CPUE by month was presented as showing a trend in Area 2B; two of the months are usually significantly lower. Dr. Webster replied that our station pattern in Area 2B should give an unbiased estimate within that area. Ray noted that grid meshes well with bottom depth and should mesh well with density, and there should be no systematic bias. Regarding survey timing, staff commented that if fish are not at one station then they should be found at another, and that data is smoothed over three years. Staff discussed the systematic nature of grid layout, and clarified that each year we fish the exact same stations but the original design used a random starting point for the grid. There were also comments regarding possible local depletion on survey stations, the effects of shifting the survey grid on some random pattern, and that our grid data are now being used for apportionment purposes not anticipated in the original survey design. Ray replied that shifting grid points would compromise the continuity of the grid data. Regarding the multipurpose use of the current survey, staff replied that the original purpose, to detect trends in abundance, as well as the more recent use to apportion via CPUE, have the same requirement (an unbiased estimate of relative abundance) and should not change the survey design.

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Steven continued to present the data which goes into each area's apportionment, with a slide for each area. He discussed the more complicated method we use in Areas 4CDE, using the NMFS trawl survey to get an overall density.

There followed a discussion of survey bait, including bait condition, hook competition, and sand fleas. Steven presented the bait adjustment model developed Bill Clark. Comments included observations on staff's bait classification criteria on gear retrieval, as well as factors effecting bait attractiveness. There was a comment that there is a large variation in the bait conditions on returning hooks which are classed as 'bait'. Steven replied that these are all complicating factors, and at least currently out of our control. It was noted that the bait corrections are hard for harvesters to accept in areas 4CDE and that the bait corrections could result in large swings in CPUE from year to year. Steven continued with a slide on area-specific hook competition factors. It was commented that the new apportionment method assumes catchability is constant, but some of the adjustments that staff investigated at industry's request could be interpreted to indicate that catchability may vary, so why is this any better than using CA assessments, with their different catchabilities? This was discussed by staff, as well as the difficulty of finding a design to compare catchabilities. Steven commented that if any area might use a closed assessment, it would be 4B. Oceanographic and bathymetric features of that area suggest that an assumption of it being a closed-system might be more likely than making that assumption for other areas. However, we still do not know what happened to the PIT tags released in Area 4B.

After lunch break, Dr. Webster discussed adjusting survey CPUE for prior removals. Staff noted that we get 80 to 90% of the fishing logs for commercial removals, including tribal removals. Bruce replied that it would be impractical to restrict commercial fishing prior to our survey fishing due to the size of our survey grid.

The discussion returned to the proportion of commercial catch taken prior to surveys. Some removals were called disproportionate in Areas 2A and 2C (high) and 4 (low). It was noted that in area 4C the fish come in very late. When asked how the trawl survey factors into consideration of Area 4, staff replied that estimate for 4CDE is leveraged off the trawl survey, and that there are essentially no removals prior to the trawl survey, very little directed fishing in the areas of trawl survey, and that bycatch removals are generally of very small fish, below the size caught by the hook survey.

A short discussion ensued regarding the workings of the last annual meeting, particularly the final apportioning which was done by the Commissioners, where the total quota was maintained, but weak areas were given increases over staff's recommendations as the expense of 'strong' areas. This was typified as having the "rug pulled out from under them".

Bruce then discussed the characteristics of historical catch shares for apportionment, which was suggested by industry at the previous workshop. This is a fixed value approach and they reflect catch limits that were based on a methodology (Closed-Area assessments) that we now know to have been biased given current knowledge of migration patterns. Historic catch shares would be unresponsive to stock changes, so that using those historic shares as a starting point would be perilous if those shares are not appropriate to stock biomass distribution.

Bruce then introduced the evaluation process. There was quite a bit of discussion, particularly regarding which metrics to use. Present data for 20 year olds was questioned, since the size of this group is driven by two very strong year classes. It was suggested to use an age of 95% maturity, maybe 16 and up, a group where fish are more fully mature. Since a peak yield of the resource is ages 11 to 16, that would also be a useful metric. Staff was also asked present a 20-year period of the widgeon run, rather than 100

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years or the 5 year projections made for the annual meeting; it was pointed out that you could have a run of bad recruitment over 5 or 10 years, and a broader look was called for. Steven replied that our harvest policy is applied to the coastwide stock, and the apportionment tool is bringing this down to a closed areas level. We don't have the some of the reference point metrics for the small scale areas; we have to downscale to each closed area. Bruce clarified that harvest rate determines the quota. It was suggested that there may be a bias in the model, like the retrospective bias in our stock assessment model, and that this should be discussed at a subsequent meeting. There was a request for a metric which measured how an option causes a redistribution of shares between areas; whether the method being evaluated would shift the shares around, and if so, to what extent. A further request was made for a metric which measured the economic stability over time of a particular method.

After a break, Juan introduced the new widget. There was a discussion about the migration numbers in the widget, in particular in Area 2A, and also in Area 4B, since the table shows no movements into this area. Several attendees noted the uncertainty among the migration numbers, and questioned their validity. Juan replied it's a 'what if', not that we believe in those 100%. We know that they are uncertain, and may change by age, length, sex, and year. Responding to questions, Juan replied this we use an 'all fish' matrix, using whatever numbers we have by age. Tag data does not have sex information on recoveries, and wire tag data has problems with reporting rate. He responded to questions showing how to enter apportionment fractions and how to incorporate the size at age feature over years. Juan commented that small proportions at young ages are expanded substantially to estimate recruitment, which imparts some variability. A question was raised wondering whether large year classes settle out with a different distribution to small year classes, like sablefish. Juan said there is a graph in the answers to the first workshop that shows this data.

Steven noted that the recruit distribution was based on the single selectivity method, and was asked for about area specific selectivity. This was discussed, as regards Area 2B having its own selectivity rate and our going to a single selectivity in 2006. Juan explained including the bottom area apportionment option, that while the survey is better, it is based on a short time span of 10 years. Staff was requested to build in some kind of stability factor, like 'fixed shares' with some variance bounds, recognizing that this would entail some risk in favor of economic stability. Juan said this is what the slow up fast down (SUF) does, and Bruce added this would make the application of the strategy much fuzzier, downs will be deeper, and we will lose on the upside. Concerning the use of shares from the last coastwide assessment as the apportionment tool, and using different trajectories of slow up fast down to see how that would compare, Steven commented that some areas do not have a closed area assessment (e.g., 2A and 4ACDE), these areas being fractions of neighboring areas. It was suggested that Area 2B be allowed to have a unique selectivity with alternate trajectory, slow up fast down, or to look at some variance on historical shares. Bruce noted that more options equates to less clarity. A variant of historical shares was then suggested, managing the regulatory area to allow historic shares to be achieved over time. This was discussed at some length by staff, noting the difference between harvest rate, apportionment, and harvest control rules (e.g., SUFD, reference point changes in harvest rate). Steven said some questions are not answerable by the widget in its current state and Bruce commented we might not ever get to historic proportions, since some were not sustainable. Social factors were again put forward to be included in the model; tools that can be used to assess how stable the fishery is, or would be, with various options. Other model options were presented, including one from the forum, a hybrid model with coastwide assessment then apportioning by survey and 15-yr catch shares weighted two to one. A second suggestion was using closed area assessment shares with unequal selectivity assumption; or blending survey CPUE with closed-areas assessment proportions. Bruce pointed out that closed area assessment proportions could not be simulated dynamically, they could only be used as fixed values and

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would be unresponsive to any stock changes. This would have the effect of diminishing the sensitivity of the combined apportionment method. Steven pointed out that the last three closed area assessments used the same selectivity for all areas. He commented that running a closed area assessment year after year is getting more difficult. Participants restated that while there were problems with closed area assessments, there are also problems with coastwide, and folks want to see what these models will show, what are the tradeoffs, what are the gains. Steven discussed problems with closed vs. coastwide models, re the 'blend' requested. He did not know how the model could be made accurate with this blended information. Area 3B was discussed as an area that has not behaved well nor been fished properly, and depleted relative to what it was 10 years ago. Staff doesn't think it is depleted, and suggested that it is more a case of an unfished population, declining once the fishery started. Area 2A received additional commentary with notes on the lack of older females in Area 2A, and whether this is driven by their removal as smaller fish. Staff replied that there are not just lower average ages, but there are also holes in the age distribution. In the discussion it was suggested that perhaps these fish are there, but just not caught for some reason, either catchability, or survey timing.

Bruce adjourned the first day of the meeting, and asked attendees to think about what they would want staff to do, and to present their thoughts in the morning.

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Day two of the Apportionment Workshop was called to order by Director Bruce Leaman. Bruce commented that some changes were made to the widget overnight, and showed a matrix detailing some of the requested changes or investigations.

Dr. Juan Valero opened with a description of what can now be done with the widget, and pointed out the new features which had been added. He commented that the widget runs for 120 years, and can use as starting parameters migration data from the pit tag model, a user-chosen harvest rate, balanced or unbalanced HR, a choice of growth options and recruitment distributions. Juan then showed effects of choosing different recruit distributions, and demonstrated how the report card will use 'stop-light' type color designations for output. Juan then illustrated the use of the widget to explore alternate scenarios.

Replying to questions about why the recruitment distributions based on survey data is averaged only from 1998-2004, Juan explained that more recent years have fewer data points, and are far less reliable; 2004 is the most recent relevant year, giving only 3 or 4 years view of a cohort with low selectivity for younger ages. Steven Hare expanded on the uncertainty of using more recent values. Replying to questions about changing the Ebio input to the model, with respect to the percent given to each area, Juan replied there are no assumptions about the Ebio distribution, just about the recruitment distributions. Steven and Juan both clarified this, suggesting that you could increase an area's Ebio by choosing the recruitment distribution that is based on bottom share, but that Ebio is not a direct input in the current widget.

There was a discussion regarding Area 2A. It was suggested that since the area has such a small percentage of total biomass, and some have questions on the statistical certainty of the biomass estimate for this area, could we put a fixed catch level for 2A, then work the rest of the model and see what the total impact would be on the coastwide abundance? For example, giving Area 2A a constant catch with a minimum level, and let everything else work with harvest rates, to see the impact on coastwide stock. Juan replied that having a fixed catch (rather than a fixed harvest rate) could be very dangerous for Area 2A (or for that matter, for any area) since it would be insensitive to changes in that particular Area. He further illustrated that the impact of a particular strategy (such as the requested fixed catch for 2A) cannot be evaluated by looking only at the potential coastwide impact but it has to be looked at the regulatory area level also.

It was then suggested that the PAT tag study does show some movement in and out of Area 2A, which is different than the current migration assumptions used in the widget for that area. Proponents argued that this could support having a quota based harvest strategy in that area, which could be 'protected' by a set minimum for removals, since it was only a destination area.

Replying to a question about the model trend of the realized harvest rate increasing with time, Juan indicated that these derive from the coastwide assessment itself. Juan showed slides illustrating that we are actually fishing harder to get that higher exploitation rate, fishing more skates to get the catches. In the case of using higher harvest rates in the eastern areas, the widget is trying to recreate the realized harvest rates derived in the assessment. There was further discussion about how the model is treating Area 2A, with questions about how tribal allocations have perhaps redistributed catches, and that we may now be exploiting different stocks than in the past. When asked about perceived absences of larger fish in Area 2A, and whether there ever were large fish in this area, both Juan and Bruce mentioned the large historical harvests taken from this region, and that depletions in these areas was the original reason for formation of the Commission.

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Steven presented more details of the changes in Area 2A in recent years, showing large decreases in commercial CPUE and skyrocketing effort to catch quotas amid dramatically declining abundance indices. He pointed out that you don't need a model to see why the IPHC is concerned in the region. Asked about the models showing increasing harvest rates in recent years, Steven explained that while catches have remained the same, but the estimated stock size is much lower.

In a discussion of how bycatch data are used, Bruce said legal bycatch is included in removals but sublegal bycatch is treated as phantom population and worked through its projected life under the existing mortality rates in order to correctly calculate the impact of its loss. Sublegal bycatch is dealt with the same in every area. Steven replied that if we treated sublegal bycatch as we do legal, parts of Area 4 would no longer have a commercial fishery. If sublegal bycatch was treated as a pound for pound removal in the Area of origin, the Areas 4CDE would not have a commercial fishery. Discussing Area 2B bycatch, Bruce said it was about half and half legal vs. sublegal. Steven explained that the yield loss is greater for smaller fish, in Area 4 more than a pound for a pound. In Area 2A it is less, since they are larger fish. Steven reminded the audience that there will be a bycatch workshop later this year.

Bruce presented the following table showing apportionment and harvest scenarios which had been requested by attendees during the previous day. Bruce commented on the feasibility of using the widget to look at each of these.

#	Apportionment method
1	Survey CPUE
2	Survey CPUE with Hook adjustment factor
3	Survey CPUE with Timing adjustment factor
4	Historical Catch Shares
5	Survey CPUE:Historical shares (2:1)
6	"Sticky" historical catch shares (10% max change)
7	CA* proportions with variable SUFD** trajectories
8	CA* proportions with variable SUFD** trajectories and unique Area 2B selectivity
9	Survey CPUE: using CA* proportions (1:1)

*Closed Area **Slow-Up Fast Down

Bruce commented that Numbers 2 and 3 cannot be done dynamically, since the factors would change every year. These could be done with the most recent fixed values. Number 4 is in the widget now. Number 5 can be done as a blend. Number 6 is not an apportionment method; it is more of a harvest control rule. Number 6 was discussed in some depth, and was clarified as using historical shares within some narrow range of constraints. Numbers 7 and 8 both use variable harvest control rules on closed area proportions and represent examination of harvest control rules, not apportionment methodology. Number 8 has a different selectivity for Area 2B, which would be very difficult to simulate since it involves a different definition of exploitable biomass for Area 2B. Bruce explained that when you change selectivity, this changes other variables as well. Steven commented that a unique selectivity for Area 2B would compromise the other rules, and would jeopardize the Area 2B stock. Number 9 was typified as doable but could only use fixed-values for the CA proportions and therefore would only represent a scaled version of number 1.

The various scenarios were discussed. During these discussions, there was further comment about the timing of the surveys, as it might affect survey CPUE. This was followed by a request to have performance measures by 10, 20, and 30 year periods, in addition to the endpoint, to see when effects are most evident or first seen. Staff stressed that short-term simulations would be strongly influenced

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by starting point values and that such short-term runs are not forecasts. The widget is a tool for exploring the effects of different policies, not forecasting exact stock conditions in any given year. Participants noted that their planning horizons are much shorter than those staff uses for policy evaluation and they wanted to estimate impacts on their fishing within their participation time in the fishery. Staff acknowledged this and, noting the foregoing concerns, agreed to show shorter-term results.

There was extensive discussion about the starting point inputs to the widget, particularly concerning the recruitment scenarios. Steven pointed to page 69 in the 2009 Annual Meeting Bluebook as an indicator of current age composition from survey data for all ages and both sexes. The discussion focused on using currently estimated distributions of biomass as the distribution of recruitment for the simulations. Staff agreed that it could be done but noted that there was a high degree of circularity in such a process because the current area-specific estimates of biomass are based on survey apportionment.

In response to discussion about using the results of closed-area (CA) assessments for apportionment purposes, Steven commented that it is getting more difficult and time consuming to run CA assessments, when they are not the primary path of the assessment. He also noted that many of the CA assessments are VERY bad fits to the data; hence produce uncertain estimates of biomass. Staff also pointed out that historical catch shares, in general, reflect the CA assessments because catch limits were based on the CA assessments. Commission decisions, including SUFD, obviously had some influence on those catch limits but the historical catch shares are a reasonable proxy of the CA assessment proportions. Participants noted that the CA assessment proportions allowed each area to have independent catchability over time for the commercial data in the assessment. Bruce pointed out that the assessment also includes the survey data, where catchability is not allowed to vary over time. It was noted that evaluation of apportionments will tell how areas will change relative to each other, but recruitment seems to drive how long this will take to occur. Staff agreed that this is largely correct over the short term but not for the longer term simulations. It was questioned whether methods 2 and 3 could be run as an additive process? Bruce replied these could be done, noting that one would have to use fixed AFs (Adjustment Factors) because there would be no way to estimate them into the future and that one would want to do them separately, and then together. The lack of realism in using fixed AFs (say, from the most current three years) into the future was highlighted.

There was a great deal of discussion on method 6 – the ‘sticky’ historical catch shares, constrained by a maximum change limit. It was not clear how the requirement for change would be implemented. If the maximum change were tied to changes in the coastwide biomass, then this method is not examining apportionment, it is simply looking at a harvest control rule. The short-term effect on regulatory catch limits would be largely dependent on starting conditions. The long-term effect would be to make the harvest strategy less responsive to stock changes; the lows would be deeper and yield would be lost during stock increases similar to the effect of the Conditional Constant Catch strategy examined several years ago. In considering methods 7 and 8, staff noted that they would have to use fixed CA proportions from the most recent CA (2007, or averaged over the 2005-2007) but in reality these methods are evaluating harvest control rules, not apportionment methods.

The subareas within Area 4 were discussed, and staff responded that we have less information for these areas, and the model at this point is primarily for those areas where we do have good time series of information. Concerning socioeconomic impacts, staff commented that while various scenarios detailing impacts on yield can be documented, evaluation of such impacts belongs in discussions among industry and the Commissioners.

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Dr. King, the Canadian Scientific Advisor, requested performance metrics that are used in the Canadian process for evaluating assessment and management. Bruce and Steven noted that some metrics used by national agencies cannot be calculated within the Commission's assessment framework because the Commission uses a dynamic harvest policy evaluation involving environmental influences on recruitment, rather than an equilibrium evaluation with no environmental input. They also noted that reference points such as the threshold and limit reference points were available for the coastwide assessment but cannot be calculated for each area. Staff agreed to work with Dr. King to determine what might be possible in this regard.

There followed a discussion of the Slow-Up/Fast-Down (SUF) policy, and its biological implications. Staff noted that the policy had been evaluated in the past and that the net effect was to have slightly more fish in the water over the long-term and to require a reduced harvest rate because the stock dropped below the threshold reference point less often than without the policy. Bruce noted that many agencies use a buffering policy for catch limit changes and, while the Commission's asymmetric (SUF) policy was currently unique, recent research pertaining to North Atlantic fisheries had noted the merits of such an asymmetric policy. The discussion returned to Area 2B, and whether it had a unique nature which would require separate or unique treatment. Steven pointed out that the previous use of a unique selectivity for Area 2B was an artificial approach that was used to deal with poor fitting behaviour of the CA assessment for this area. Changing selectivity is not just a simple process of using a different selectivity – it means doing CA assessments, with all the attendant problems that led to the coastwide assessment approach that has now been adopted. The two assessment approaches cannot be combined.

There was discussion of recruitment, and whether the pattern between areas changes with the size of the recruit class, and how this might affect the model. It was pointed out that our figures show a range of variability between areas: in 2002-04 a ratio four to one as compared to three to one in 2007-08. It was suggested to include a scenario with recruitment distributed in proportion to spawning biomass changing distribution. Staff noted that some of the alternative scenarios suggested during the meeting were beyond the intended scope of the widget and in the realm of the Management Strategy Evaluation that staff is undertaking,

In a discussion of the various adjustments to survey CPUE which have been investigated recently, it was suggested that when we have corrections to survey CPUE we should wait at least a year before they are incorporated, to give industry and others a chance to discuss and respond to these suggested changes. It was commented that some of our adjustments to survey CPUE caused large problems to the Conference Board deliberations, and resulted in them rejecting staff recommendations.

Juan presented an updated widget version that included areas 4 CDE and 4B and explained reasons why the current version of the widget does not include them. He illustrated modifications to the widget that allow having trended harvest rates, setting variable harvest rates, and added requested age category metrics. He commented that the patterns of differences between western and eastern areas resulting from this widget remain the same.

Juan presented the "Report Cards" which summarizes the widget results. It was requested that there be a metric for a cumulative yield change, either overall or even for each year and then showing an 'average annual change in yield'. This was explained as something to capture stability over time. There were repeated comments about the need to reduce volatility in harvests. Staff cautioned that evaluating a harvest policy performance over the short term may not be a good tool for evaluating its values for stock sustainability, compared to long term evaluation; short term evaluations may be driven

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by transient effects. This was discussed, and Bruce again expressed concern about using the widget as a forecast tool. Bruce then reviewed what widget runs would be done and where we go from here. Staff will keep the discussion forum open for ongoing dialogue, noting that we would have 'report cards' available for those runs which can be made as soon as possible. They will be posted on the website, along with summary minutes and a Q&A section, similar to that from previous workshops.

Registrants/Attendees

Alverson, Robert	Robinson, Gary
Ashcroft, Chuck	Secord, John
Behnken, Linda	Shaw, Bill
Bodenmiller, Don	Sporer, Chris
Cameron, Russell	Tracy, Chuck
Cedergreen, Mark	Wilderbuer, Tom
Chapman, Alan	Williams, Sarah
Comstock, Earl	Williamson, Gary
Conrad, Robert	Wurm, Rob
Cox, Sean	Yonguen, Gao
Crowley, John	
Culver, Michele	
Daugert, Doug	
DeGreef, Peter	
Delaney, Nick	
DiCosimo, Jane	
Dole, Ken	
Erikson, Wes	
Falvey, Dan	
Ginter, Jay	
Hagen, Jennifer	
Hansen, Ed	
Hoard, Ralph	
Johnson, Larry	
Joner, Steve	
Kaufmann, Wes	
King, Jackie	
Lane, Jim	
Logan, Gary	
Meyer, Scott	
Moreland, Stefanie	
Morrill, Doug	
Murphy, Peggy	
Northcut, Kris	
Olsen, Eric	
Parker, Peggy	
Peterson, Pete	
Pierce, Lyle	
Richmond, Laurie	

