

MINUTES OF MEETING
August 26 and 27, 2003
Regional Water Board Workshop
Regional Water Board Hearing Room
5550 Skylane Boulevard, Suite A
Santa Rosa, CA 95403

On, August 26, 2003 at 1:12 p.m. the Regional Water Quality Control Board-North Coast Region workshop for the Humboldt Watersheds Independent Scientific Review Panel (ISRP) Phase II report was called to order by Chairman William Massey.

A workshop was conducted to provide the ISRP and the Regional Water Board members an opportunity to engage in discussion of the Phase II ISRP report. There were no interactions with the Regional Water Board staff, discharger or other members of the public.

1:00 p.m.

i. Pledge of Allegiance

Shawn Harmon led the Pledge of Allegiance

ii. Roll Call

Board Members Present: Shawn Harmon, Bev Wasson, John Corbett, and Richard Grundy, Gerald Cochran and William Massey

Absent: Dina Moore

iii. Workshop for the Humboldt Watersheds Independent Scientific Review Panel (ISRP) Phase II report

Chairman Massey introduced the Board members and turned the meeting over to the Executive Officer, Catherine Kuhlman who explained the process of the day's workshop. Ms. Kuhlman then turned the meeting over to Holly Lundborg who provided more details on the structure of the workshop.

Ms Lundborg explained the process and rationale behind requesting early submittal of questions to the staff from Concur Inc. who then forwarded the questions to the Panel for their review prior to the workshop.

Dr. Scott McCreary (Concur, Inc.) introduced the individual Panel members and described their specific field of expertise. He also covered the presentation outline and background of the workshop.

Panel members who participated in the workshop were: Andrew Collison, Ph.D.; Fred Everett, Ph.D.; William Haneberg, Ph.D.; and Robert Twiss, Ph.D. Each gave an overview of their professional background, with a focus on field (muddy boots) experience.

Dr. McCreary described the context of the workshop and the Panel's recommendation that the workshop be formatted to allow the Panel to present their findings and engage in dialogue with the Regional Water Board members. A secondary objective was to allow the Panel to consider and respond to questions from readers of the report. Five letters were submitted to Concur prior to the workshop. A powerpoint presentation was developed to guide the presentation.

Dr. McCreary gave a brief history of the Panel and the process leading to the formation of the Phase II Report, which grew out of two prior activities.

In early 2000, the Regional Water Board attempted to bring together in mediation Pacific Lumber Company, Petitioners to the Regional Water Board, and other local stakeholders (collectively the Convening Committee) to craft a locally developed solution to sedimentation and flooding issues in the five Humboldt County Watersheds. Concur Inc, providers of environmental dispute resolution, was selected to undertake the process. The mediation process started with a situation assessment (a series of structured interviews with the parties in dispute). One of the key finding of the assessment (other than across-the-board skepticism that mediation could work) was that the current relationship between parties was characterized by considerable disagreement over scientific information and its interpretation. As a result, Concur, Inc. recommended to the Regional Water Board that central to a mediation process, a joint fact-finding or joint sharing of information and recruitment of independent scientific review should occur. The convening-committee met in a series of five meetings over a month, which eventually resulted in an impasse. Results were presented to the Regional Water Board in June 2002 with the finding that parties to the mediation had made substantially process in organizing a scientific review of relevant issues. In response, the Regional Water Board passed a series of motions directing staff to move forward with recruitment and convening of an independent scientific review panel. The Regional Water Board directed staff to seek advice of stakeholders but to retain final authority over recruitment of the scientific review panel. A series of selection criteria were established (included in Phase I report). The Panel was seated in August of 2002.

The Phase I scope of work for the Panel was to examine the relationship between rates of timber harvest and sediment loading. They were also asked to evaluate management options available to reduce flooding conditions and impacts to beneficial uses. The Panel met in person and with affected stakeholders in Humboldt County in October 2002. They deliberated over a several month period resulting in the completion of the Phase I Report which was presented to the Regional Water Board in January 2003. The Panel noted that the format of the January meeting segued from the Panel report to Regional Water Board staff recommendations to public testimony without the opportunity for the Regional Water Board to discuss or absorb the Panel's findings. Additionally at the January meeting, the Panel noted criticism that the Panel did not give the Pacific Lumber Company Habitat Conservation Plan (HCP) sufficient weight in their review process. As a result, the Panel suggested examining the role of the HCP process in water quality protection, that Phase II be structured around submittal of relevant information by the Pacific Lumber Company and the HCP implementing agencies, and to structure the presentation of the Phase II report in a workshop format.

The structure of the Phase II deliberations and format of the August 2003 workshop were based in large part by the Panel's suggestions. The Phase II Terms of Reference asked the Panel to evaluate the

1. Scientific basis of HCP/SYP/THP management measures in achieving Basin Plan water quality standards.
2. Time required to achieve water quality standards.
3. Applicability of Dunne Report No. 46 to five watersheds.

Dr. McCreary explained that the Panel's task was to review and assess existing scientific studies, plans, and methodologies and not to conduct an experiment.

Dr. Twiss elaborated on the difference between a scientific review and a science experiment. Concern was expressed by both the media and in letters to the Panel that the Panel created no new scientific information nor proposed and evaluated management measures. He explained that the Panel was in neither the management nor the experiment business but rather that the Panel was asked to look at the science basis of the documents, reports, data, etc. used in the decision process. He also point out that science basis is just one of many support systems for making decisions, others include common sense, trial and error, use of professional practices, and accepted business practices. Thus, when the Panel expresses concern about a process (e.g. the

SYP) it is based on their understanding and review of the scientific underpinnings of the practice, not making a judgement call about whether it is good or bad.

Dr. McCreary summarized the development of the Phase II Terms of Reference (TOR) (the Panel's assignment) and the difference between development of the Phase I and Phase II TOR. In contrast to the Phase I process (stakeholder and Regional Water Board staff driven), the Phase II TOR was advised by the Panel and discussed and finalized by the Regional Water Board.

Preparation of the Phase II report was a highly interactive process between all seven of the panelists. All panelists had input in the drafting and finalizing of the responses to each of the questions contained in the Phase II TOR. The report was worked on from late May to early August. Concur's role in the process was to serve as secretariat; they compiled drafts, consolidated editorial suggestions and served to keep the Panel at "arms length" from Regional Water Board staff, landowners, regulatory agencies, residents, and environmental advocacy groups. He also explained the process used to ensure that the licensing requirements were met for the respective professions (geology, forestry, and engineering); Regional Water Board staff provided review, comment and the required licensure for the report.

To begin their Phase II deliberations, the Panel invited submittal of documents from Pacific Lumber Company, agencies, stakeholders and other watershed scientists that summarized work underway in the five watersheds. They wanted to get the most current data, reports and professional judgement that was driving implementation of the HCP process. On May 5, 2003 the Panel held an information gathering meeting in Eureka which consisted of a series of presentations and a great deal of give and take between Panel and presenters (resource agencies, Pacific Lumber Company, consultants, watershed scientists and others). About fifty documents were received by the Panel for their Phase II deliberations.

Dr. McCreary introduced Dr. Bill Haneberg, who was selected by the Panel to provide a summary of the overall findings in the Phase II report and to cover Question A.

In preparing for the workshop, the Panel wanted to be sure to clearly present the most significant pieces of information in the Phase II report in a take home message. First, a preponderance of scientific information correlate high disturbance rate, particularly from logging, with low water quality. Second, the difference between press and pulse disturbance make it difficult to calculate rates of recovery. Third, approving timber harvest plans (THP) without a watershed analysis in place fails to account for cumulative impacts from harvesting. Fourth, the HCP/SYP/THP process cannot be relied on to achieve water quality objectives.

At 1:55, Chairman Massey noted for the record that Vice-chair Dina Moore joined the workshop after being delayed by the Confusion Hill slide.

A) Examine the cause and effect relationship linking protective measures undertaken through the HCP/SYP/THP process and the actions needed to ensure protection of water quality, including a clear discussion of the logic of the relationship.

Dr. Haneberg stated that there were four reasons why the HCP/SYP/THP processes cannot ensure water quality protection. Although the plans have admirable goals, they do not specifically address water quality

1. Water quality is incidental to the purpose of the plans and its protection is not enforceable.
2. The Plans have multiple goals, which cannot be maximized simultaneously. Multiple goals result in compromise and do not ensure minimum water quality standards.
The focus of the SYP is on maintaining, enhancing and restoring high quality timber yield while it gives consideration to environmental and economic values. The THP incorporates the environmental and economic objectives but water quality is not explicitly addressed.
3. The Plans are based on untested assumptions about effectiveness.

Plans are statements of intent, they do not ensure that goals will be achieved. Presumed effectiveness of best management practices (BMP) must be borne out by monitoring. The Panel asked for monitoring data but received very little. The assumption is that activities outlined in the Plan will result in zero net sediment discharge, an assumption based on computer models.

4. Procedures often are subjective and lacking in impartial review. Dr. Haneberg stated that the panel concluded that the current approach to geologic assessments is limited for a number of reasons, such as: the forest cover obscures topography, simple field inspections alone tend to be unreliable and uncertain, and geologic mapping is important but is insufficient and inherently subjective

Three panelists presented findings relative to Question C. Dr. Robert Twiss provided the introduction. Dr. Haneberg presented findings relative to the Freshwater watershed analysis. Dr. Collison addressed sediment budget models.

- C) **Evaluate the water quality protection measures provided by the HCP/SYP (including the intended performance under full versus current level of implementation) in the context of water quality standards specified in the Basin Plan. Comment, from a science perspective, on the way in which the HCP/SYP and the corresponding watershed analysis and adaptive management process does or does not address the Basin Plan standards over different time intervals.**

Dr. Twiss indicated that the HCP/SYP/THP cannot be relied upon for water quality protection due to eight shortcomings. The Panel had concerns of the structure of the HCP/SYP/THP. Dr. Twiss also noted that THPs continue to be approved without the watershed analyses having been in place. Dr. Twiss stated that when HCP agreement was made, maps could have enabled resource agencies to identify risks of accelerated sedimentation and assess the extent of potential harvest activities on areas of mass wasting concern/implications for water quality. Although there were maps of mass wasting areas of concern prepared by both PALCO and the California Geological Survey, the Panel found no evidence that there was good geological mapping available when the agreement was crafted. If these type of maps were available perhaps a better understanding of levels of risk, and an expectation of lower timber harvest rates, may have appeared at that time which may have eased the pressure on the level of disturbance that is seen today. This question (level of disturbance) was raised by the Panel at an earlier workshop and at earlier sessions with John Munn and others (CDF). It appeared to the Panel that an assumption was made that the area of the Five Watersheds was generally available for timber harvesting, with some areas off limits. However, it appeared that board feet estimates were based on those off-limit areas being generally available for some kind of harvest

At their earlier workshop, the Panel also asked about the status of future geologic mapping. The Panel was interested in the future plans for geologic mapping. They raised questions at the workshop, such as would there be a peer review of the geologic assessment procedures and would a process be developed that would move the understanding of underlying geology forward or is there movement towards a more subjective, field based review, 11th hour review. Dr. Twiss stated that based on the Panel's understanding, it appeared that the more subjective approach to geologic review was going to be used in the future. Also the Panel expressed concern about reliance on the checklist approach which results in evaluation late in the review process with little opportunity to do subsurface investigation.

Dr. Twiss stated that the conservation measures in the HCP are appropriate for habitat conservation measures but are not appropriate for water quality protection. Dr. Twiss described a schematic of HCP protection practices. Dr. Twiss used the example of the HCP conservation measure regarding stream buffers. The HCP calls for wide buffers on larger stream with fish, with

headwater tributaries getting smallest buffers. This practice is understandable for fish issues (e.g. vegetation, canopy) but not if the concern is for mass wasting where undercutting of slides along streams occurs, as shown on the geologic map. If water quality considerations drove the prescriptions, wider buffers would be provided to headwater streams and narrower buffers on larger streams. This is just one example of how measures would be different from a water quality perspective with the formation of different prescriptions, guidelines and rules.

Dr Twiss described the logic of the watershed analysis process (HCP, watershed analysis flowing to THP). The Panel is concerned that because watershed analysis has not been done, perfected and used to advise the THP process, there is a gap in the middle of the process (page 33 of Phase II report). Analysis is good but an assimilation of the analysis and re-thinking of the practices and adjusting of measures to take account of information in analysis is lacking. Signatory agencies have informed the Panel that they will be doing that. The Panel is concerned that a good feedback loop between prescriptions, analysis and response to analysis, and protective measure are lacking.

Ms. Dina Moore asked Dr. Twiss what degree of peer review was done of the analysis?

Dr. Twiss informed the Regional Water Board that Dr. Marston did the most with this issue. Dr. Twiss felt that Dr. Marston would say "yes" that there was some peer review that had occurred and that it was useful and helpful. The concern was more with the extent that the analysis would find its way back into the policy, regulatory and practice adjustment.

He stated that the Panel had been informed by agency and PL commentary at the May 5, 2003 workshop that there was an expectation that watershed analysis would result in relaxation of prescriptions compared to the existing stringent standards. The Panel is concerned that in other states and other situations this analysis could result in either relaxation or tightening based on the analysis. In an adaptive management process, there's a need to be even handed and have some openness and transparency to the process.

Dr. Twiss also stated, based on the HCP and commentary from CDF (John Munn) view, that BMPs are expected to result in a net sediment reduction or even a positive response in sediment yield. This results in the assumption that more harvest is better because the BMPs will more than offset the sediment yield from harvesting. Dr. Twiss stated that the Panel did not find in the majority of scientific literature or in data from the 5 watersheds, a credible science base to defend this assertion. In fact, studies show that BMPs often have to be tightened up over time, as problems occur. If the Panel was asked if a scientific basis for the "more is better" assertion exists they would have to say they did not find it.

Mr. Corbett asked for the reasoning behind this view and if it was based on a zero net discharge analysis, or how did they come up with more being better?

Dr. Twiss responded that he was unsure how CDF came to this conclusion.

Mr. Corbett stated that usually a no effect is viewed as neutral and wanted to know what the elements were that would result in the view that more is better.

Dr. Andrew Collison responded that the assumption is the BMP practices like decommissioning roads will get rid of the "loaded guns" in the watershed.

Dr. Twiss described the architecture of the HCP. When the agreement was crafted, decisions had to be made in a "dark room." Since not much information was available at that time, so they adopted stringent conservation measures, then a detailed watershed analysis would be produced and then a THP would follow based on the analysis. But there was also recognition that logging

needed to continue so that THPs would continue to be produced. This architecture resulted in a lot of scientific data (e.g. maps, data, and response) now populating the "dark room." He pointed out that was what the Panel meant when referring to the speculative nature of the HCP. This approach puts a heavy burden on after-the-fact effectiveness monitoring and the importance of the feedback loop.

Dr. Twiss informed the Regional Water Board that the Panel did not do an exhaustive review of the THP process. However, the Panel is concerned that THP is not the appropriate tool to do a serious cumulative watershed effects assessment.

Mr. Corbett asked about the difficulty of cumulative watershed effects assessments, within an individual permit process, and the need to look at cumulative impacts from a watershed view. He asked if this was also the Panel's view.

Dr. Twiss responded that it is difficult to handle multiple project evaluation (cumulative impacts) at the project level (e.g. at the THP level) which is why the Panel looked to the next highest level (e.g. SYP) and they did not find the evaluation at the higher level either. Dr. Collison pointed out that this finding was also made in the Dunne 46 Report as well as in the Phase II ISRP Report.

Dr. Twiss explained that the primary role of the SYP is to ensure that more trees are growing than are being cut down on an individual ownership, not on a watershed basis. If the HCP/SYP/THP is to be used as a water quality tool, staff could recommend that the SYP/THP include certain minimum information that could help make determinations. The SYP could be used to relate the projection of cuts to a watershed basis and to a time basis. Each watershed could have a "not-to-exceed" level. Until such policies are adopted, Regional Water Board staff could implement their own CWE analysis with the available data.

Dr. Twiss also discussed the monitoring component of the existing HCP/SYP/THP. He stated that monitoring design and interpretation could be shifted to an independent 3rd party with design, review, discussion and supervision by transparent review.

Mr. Corbett stated that some of the water quality monitoring programs have been developed mutually by the discharger, and the water quality staff. Do you have any observation on whether their design is adequate from a technical standpoint and if not what recommendation would the Panel make?

Dr. Andrew Collison responded that it was tough based on the information that was submitted to them to get a handle on the big picture and on the overall experimental design. He stated that the Panel's concern was that unless the right question was asked in advance and the right design implemented, it is difficult to get an answer. He and Dr. Twiss discussed the need to actually monitor the effectiveness of best management practices (BMPs) which often requires pre-project monitoring.

Dr. McCreary discussed the perception from a number of commentors on the Panel's criticism of planning and the finding that plans are "not guarantees." The Panel was asked if they knew of any environmental and/or restoration plans that provide for such a specific guarantee, and if so which one. The Panel was asked if they could provide an example of a plan architecture that did a better job of providing guarantees than the plans the Panel reviewed.

Dr. Collison described the Washington planning approach in which the adaptive feed back loop resulted in the relaxation or tightening of restrictions based on results of monitoring. This is an example of a more responsive feed back loop.

Dr. Everest referenced the 1997 Tongass land management plan. It was the first time the US Forest Service used a team of six research scientist on the planning team but kept them separated from the planning process so they could provide a science-based pool of information to the policy makers for their decision making. Scientists gave policy makers a list of options and risks associated with options. At the end of the process, the scientists then critiqued how the policy makers used the science in policy making, such as was science used and applied correctly. The scientist work was then subject to peer review. This resulted in several layers of scientific peer review being built into the plan.

Mr. Corbett asked from a regulatory standpoint, what key indicators, from a technical standpoint of water quality, do you think it would be wise for this board to take a look at, with limited staff and other resources? Out of the 303(d) watersheds, what deterioration to water quality standards, from a technical standpoint, would the Panel have the Board look to see what the Board could reasonably do?

Dr. Collison responded that if the reference was to physical measures, turbidity would be a good measure as it lends itself to monitoring. He also re-emphasized the importance of the overall experiment design and the need to lay out a series of hypothesis and the method to evaluate that hypothesis. The importance in monitoring both disturbed and undisturbed watersheds (paired watershed design) to get the necessary reference data was also emphasized.

Mr. Corbett stated that there are not the resources to look at all disturbed sites in every watershed and so there is a need to look at them (sites and watersheds) in some sort of priority order.

Dr. McCreary asked the Panel what scientific criteria they would use to target disturbed areas for more in-depth monitoring.

Dr. Twiss noted that the question crossed over into policy issues, which the Panel was not asked to evaluate. There are examples of phased triggered planning approach where actions are structured to allow resources and work efforts to be shared among the applicant and other agencies.

Mr. Cochran asked if the right questions have been asked in the existing monitoring.

Dr. Collison responded that some of the right questions were asked and it would be feasible to develop others. He suggested that the stakeholders, Pacific Lumber Company, and agencies develop a set of key processes and theories about disturbances in the watershed.

Mr. Grundy pointed out that the Board has already past the policy position on whether to rely on the HCP and associated process. The Board hired the Panel to tell the Board what the HCP provides the Board and what information they still need. He asked if the existing process could be supplemented rather than developing a new one from scratch.

Dr. Collison responded that the beginning of a data set exists and should be used in formulating a revised approach.

Mr. Grundy expressed concern about assumption that if BMPs produce certain conditions a certain water quality will result. He asked if water quality should be defined in other terms like numeric targets rather than beneficial uses.

Dr. Everest said he will address this issue as part of his rate of recovery discussion and that they are policy issues (such as definition of recovery, what level to recover to?) that the Board will have to address. These are policy calls, scientist won't tell policy makers what is background or rate of recovery, as many other factors are involved.

Mr. Grundy spoke of the policy in state law regarding returning beneficial uses to 1972 levels. Waterbodies not meeting those standards were declared impaired and the Board is charged with their administration. The federal goal is natural, physical and biological integrity. He asked, "How does the Board decide criteria to move in that direction and how far to go, should this be done on a watershed or smaller basis?"

The Panel pointed out the lack of data available documenting the 1972 conditions and the likely impaired status of the watershed in 1972. Natural and current background issues were also raised in the Phase I report and the need for policy makers to define these terms.

Mr. Grundy observed that Panel was deliberately held at arms-length and the staff should have access to the Panel to help inform the development of options to the Board.

Dr. Twiss pointed out that there are various options available for staff in developing definitions that are not a single fixed figure.

Ms. Wasson spoke about disturbance index, clearcuts, pesticides, and root die back. She expressed concern over clearcut practices especially with herbicides.

Dr. Haneberg spoke of studies in other watersheds where computer models were developed to take into account uncertainty, root strength decrease etc. Tools could potentially be modified to use to address these types of questions.

Dr. Haneberg explained the Panel's conclusions that the Freshwater Watershed Analysis did a reasonably good job of addressing and modeling the physical processes and the levels of uncertainty in the watersheds. The Panel noted that the analysis showed that timber harvest and associated activities tended to increase sediment productions, current harvest rates are significant, and sediment from roads and mass wasting should be targeted. Other Panel findings show that despite a good assessment was provided on what is going on in the watershed, it did not provide a solid feedback loop on success of prescriptions. It also shifted the responsibility from the landowner to the requirements of the prescriptions, the idea being that if the landowner meets the requirements of the prescriptions, the landowner cannot be held accountable.

The Panel came up with several options to make watershed analysis more protective of water quality. Options include, consideration of the location and specific impacts of certain geology and landforms (e.g. prescription for thinning on 50% slopes, no explanation on why not 40% or 60%), analysis of alternatives (including no use alternative), and more thoroughly frame the disturbance index.

Dr. Collison re-visited the two sediment budgets (Reid and O'Connor) discussed in the Phase I findings and their development for use in determining rate of cut and sediment yield from different activities. He informed the Board that the Panel was interested in clarifying the Panel's original findings. He described the Reid sediment budget model as an empirical model, a simple mathematical model with a small number of inputs (harvest area and number of landslides) and limited number of outputs (black box model). The model uses a series of aerial photos showing the time sequence within a watershed; harvest area and landslide areas are measured with a note on whether landslides are within harvest units. The model results in a simple statistical comparison between percent of watershed logged and the percent of landslides in watershed occurring on logged areas. Once a statistical test has shown an association between logging and landsliding, then an estimate of the increased frequency of landsliding within the logged area can be determined. Once that parameter is known then a value can be determined on the percent of watershed that can be logged while keeping the landslides below a certain number. The model is

very simple and not subject to a lot of user error. The Panel noted that a weakness in the model is the assumption that all sediment from logging area comes from landslides, and does not look at roads.

Dr. McCreary noted that two comments were submitted stating that the Panel did not adequately identify the weaknesses of the Reid approach, especially the assumption that all sediment was derived from landslides and that the "L" value used was not representative.

Dr. Collison stated that this issue was looked at a great detail as part of Phase I, in fact two panel members derived the model from its first principal. Two issues were brought to the Panel's attention. One was a mathematical error in the model and the other was a question on the time frame over which the parameters were derived. The Panel did not find any mathematical error in the model nor did they find that the time frame was an issue. There was an objection raised as the time frame selected for the analysis was a wet period and hence there was a greater potential for landsliding. Dr. Collison pointed out that both the logged and un-logged area were subject to the same rainfall and that the model is not dependent on rainfall.

Mr. Corbett asked if the Panel agreed with the watershed assessment finding that roads are responsible for 88% of the sediment.

Dr. Collison said that roads are an important sediment contributor. He said that he was concerned about the view regarding the relationship between logging and deep-seated landslides. His previous work in forested lands has shown that a change in the hydrologic regime can trigger deep-seated landslides below the harvest unit.

Dr. Haneberg also brought up the issue of the assignment of all soil creep discharge (which can be effected by soil moisture regimen and vegetation cover) as being a natural processes. Soil creep is shown as a high component of the background process. He also re-iterated that generally roads do contribute a substantial portion of the sediment yield.

Dr. Collison described briefly the O'Connor sediment model, which used a combination of numerical models and field methods to describe different portions of the sediment budget. One of the main numeric models used in the O'Connor approach is the WEPP model (Watershed Erosion Prediction Model) developed by the USDA for use in farmland application and jointly with the US Forest Service for use on forested lands. The WEPP model is a process-based model that tries to mathematically represent the key processes in the watershed that are responsible for soil erosion. In academic practice, this is the preferred approach as it better represents the physical process at work. The downside to this approach is that the more complex the models become, the more measurement of complex parameters is needed (parameters like rainfall kinetic energy, soil erodibility). Strengths of this type of model include internal insight in the processes at play in the watershed and it allows an exploration of the linkages between processes. The downside to the model is the huge amount of process information needed and that the information is physically difficult to measure. Where data is limited, it is more likely to get the right answer with a simpler model rather than a complex model.

Ms. Moore asked about using those components of the WEPP model that are measurable (such as road density), in conjunction with the Reid model, to give a more robust answer to comments raised.

Dr. Collison stated that if Reid model was used it needed to be refined and made more sophisticated, with more than one volume.

Dr. McCreary asked the Panel if the WEPP and Reid model were “hybridizable” or rather was the Panel recommending starting with one model approach and moving towards the other?

Dr. Collison cited the Dunne Report 46 recommendation regarding the use of physically based model. However, the Dunne report pointed out that we are not ready to use these models yet. Report cites the need for trained agency personnel and data collection for use of complex models. The use of complex models can lead to two distinct answers due to operator judgement. It is more likely that one answer would be achieved with a simpler approach due to more transparency and fewer operator-bias issues.

Dr. Haneberg described Dr. Reid’s development of an approach in Elk River that begins to incorporate road sedimentation into the model.

Mr. Corbett asked if the Panel could comment on review of a test case of Reid model, perhaps submitted by CGS.

The Panel was unaware of the reference.

Dr. Everest laid out the background of Question B, the factors needed to determine rate of recovery and how to link rate of recovery to TMDL process.

- B) Evaluate whether a specific rate of recovery of the beneficial uses of water, as identified in the Basin Plan, can be determined. A determination, along with a timeframe for recovery, will be needed to allow appropriate load allocations in the TMDL development process.**

The Panel concluded that the current available information does not allow calculation of a rate of recovery for any of the Five Watersheds. This is due to the high disturbance level (press and pulse disturbances), need effectiveness monitoring data (need years or decades long data to understand effectiveness of measures), and definitions of recovery and background levels are missing.

Panel evaluated how the HCP looked at the most sensitive beneficial uses (for example domestic water supplies). The HCP goal of water quality is incidental to trending toward properly functioning aquatic habit. The HCP doesn’t look at maintaining natural flow regimes.

The Panel looked at what factors are needed to determine rate of recovery. Factors include definitions of recovery and background levels for specific parameters, comprehensive evaluation of frequency and distribution of natural and human caused land disturbances (wildfires, wind, flooding, logging, and agriculture). A complicating factor is the infrequent large storm event. If a large storm doesn’t occur during monitoring of effectiveness measures, the effectiveness will not really be evaluated.

Dr. Everest introduced the concept of press and pulse disturbances. A pulse disturbance is normally a natural disturbance such as a wildfire. It occurs in a watershed or two and then there is a long recovery period (for example 500 years). The disturbed watersheds are usually out of sync with the others, which allows fish stocks to stray into undisturbed watersheds.

A press disturbance is similar to a short logging rotation disturbance, disturbing a watershed every 40 years or so. If industrial forestry is practiced in all watersheds, the watersheds are brought into sync with each other and the natural refugia is lost. All watersheds have been brought into sync with each other in the North Coast.

Dr. Everest point out the numerous scientific studies have been undertaken to evaluate logging disturbances but that they are not useful in the five watersheds as the studies were all based on one time disturbance, not a press disturbance.

Dr. Everest introduced the Pacific Decadal Oscillation (PDO), a North Pacific current circulation pattern that affects factors like temperature, rainfall, and runoff patterns. The next switch in PDO can be critical for salmonids in the Five Watersheds. Two major currents, one from Bering Sea (a.k.a. Cold Current), the other from the Philippine Sea (a.k.a. Black Current), meet near the Russian far east and form the Sub-Arctic Boundary Current that runs eastward to the British Columbia near the Queen Charlotte Islands. The current pattern splits, with part going up to Alaska and the remainder flowing down towards California. Every 20 or 30 years, majority of current goes one direction or the other. The flow since 1995 is effecting ocean habitat in a positive way (getting most of the flow) and is providing higher productivity. Once the current switches, there is a possibility of fish extinction in the Five Watersheds.

Dr. McCreary read a comment letter asking about the panel's comment regarding the critical time approaching for California's critical fish stocks, their pending extinction, scientific data to support this position, and relative importance of the Five Watersheds to fish stocks.

Dr. Everest said that it is appropriate to be concerned about the last negative phase of the PDO as listed fish species were the result of that time. He said that as an ecologist, he believes that the Five Watersheds are important to maintaining the genetic variability.

Dr. Everest also discussed the opportunity to link the rate of recovery with the TMDL. One approach was described in a paper presented by Randy Klein at the May 5th workshop. This approach used the development of turbidity exceedance curves based on excellence levels that effect fish and level of disturbance in the watershed. The Panel felt that this approach could be used by Regional Water Board staff to link recovery with TMDL development.

Dr. Everest also briefly introduced an approach presented by Bill Thrush at May 5th workshop, which is based on the effect of chronic turbidity on different life cycles under different parameters (e.g. flow regimes).

Dr. McCreary asked about concerns raised regarding the Panel's reliance on Klein data, and how did Klein approach address geology issues.

Dr. Everest responded that Panel was aware of limitations to the approach at the present time but that the Panel believed that the approach had merit for use in TMDL and rate of recovery issues.

Dr. Haneberg also said that approach was promising but that Panel would like to see the approach published in scientific journals and subject to peer review.

Dr. Collison said that the approach has scientific value as it takes a physical approach to threshold development, rather than relying on a standard like water quality in the year 1972 or a 20% turbidity objective. The Klein approach is based on a threshold that effects biological resources.

Dr. Twiss said that staff should look for these types of linkages in the TMDL development.

Dr. Haneberg said that the Klein approach could be modified to take into account different geology.

Dr. Collison introduced Question D, and the Panel's review of the Dunne report and applicability in the Five Watersheds.

D) Evaluate the degree to which recommendations presented in the Dunne Report No. 46 are appropriate for the Five Watersheds, and determine how these recommendations might be implemented over short-, intermediate- and long-term time frames.

The main findings in the Dunne concluded that cumulative impacts at the THP (postage stamp) scale are inappropriate. Cumulative impacts should be predicted based on probabilistic and stochastic computer models developed and run by trained personnel. The Panel believes the findings are applicable to the Five Watersheds but that time issues raise constraints. The Dunne finding recommends pre-plan cumulative effects evaluation while the existing process addresses their evaluation after plan development.

Mr. Corbett asked a clarifying question about the Panel's view regarding legacy upslope roads (which may be 80% of the problem). He asked about the Panel's position on the regulation of roads. He asked whether a ZND approach is appropriate or if there is a way of calculating the sediment from roads?

Mr. Collison stated that roads absolutely need to be addressed and they can be very big contributors to overall sediment inputs. The criticism the Panel has is with the claims of effectiveness of the road mitigations and the Panel points out the need for evidence up-front to justify reliance on those mitigations.

Mr. Corbett asked about TMDLs as a tool in the watershed planning process. What are the band-aids the Board needs to use before TMDLs? Would the TMDL be a good place to specify how fast the road repairs should occur?

Dr. Twiss said that roads can be addressed in the existing regulatory processes, including timber harvest plans. Dr. Haneberg said that chronic inputs associated with roads could be addressed in the TMDL and the acute problems due to catastrophic failure could be addressed in another arena and that one really needs to look at what problems and processes you're trying to address with which mechanisms. He also said that a risk-based assessment could be used to address roads. Recognizing there is a great amount of uncertainty associated with these calculations, sometimes the best thing you can do is try to understand the uncertainty and realize it is there.

Dr. McCreary observed that the Panel stated in sufficient detail their findings and proposes to forego presentation of their conclusions. He asked for questions from the Board members in the context of Phase I or follow-up questions.

Mr. Cochran asks about the stream buffer model discussed for Class II and III streams and how much area would be taken out of production?

Dr. Twiss said the effect would be significant though he has not conducted the GIS exercise but points out the staff's ability to do a gaming approach to different regulatory scenarios.

Dr. McCreary points out that one of the January motions was to ask Dr. Twiss to work with staff on utilizing GIS tools. He asks the Board if they would like to take a break and allow members of the public to provide questions in writing.

Mr. Grundy asks if the Board has provided a mechanism for Water Board staff to have access to the Panel other than asking questions today.

Ms. Lundborg stated that as of this workshop the contract is complete. She points out that Panel has put in a significant amount of work for minimal pay.

Ms. Moore asked if any of the Panelists have reviewed the FPR Section 916.8, Sensitive Watershed Nomination, and do you believe it has any applicability to this process?

The Panel as a whole has not looked at this issue.

Mr. Grundy points to the true independence of the Panel from the staff and would like to allow staff to have the opportunity to ask questions.

Dr. McCreary discussed the legal issues of needing to protect the Panel in the Fair Political Practices Act. Ms. Sheryl Schaffner responds that the primary function of the Panel is to provide scientific review and that there is not a legal issue, but the only question is funding. Dr. Twiss expressed concern over working individually rather than as a Panel. Due to lack of money, we will not pursue additional work with the Panel as whole.

Questions were submitted to the Panel who will attempt to respond to the questions in writing. Questions most appropriately answered by staff should be sent back to staff to respond as needed.

Mr. Massey referred to concerns over the reliability of the sediment budget. As the sediment budget is somewhat the basis of the TMDL process, with a built-in buffer for a safety measure. Are we chasing down the wrong road with our sediment budgeting and/or is it possible that by using our safety measure, this will get us where we want to be.

Dr. Collison answered that he thinks the sediment budget approach is a good way to go and provides insight into what is happening within the watershed. The sediment budget is good for telling you roughly what percentage of the sediment comes from which different processes and from which parts of the system and as such he endorsed their use. He did question whether a sediment budget can give the exactly right answer about how many tons of sediment per acre are going to come out of the watershed. If all you are interested in is a sediment yield, the empirical modeling approach is probably going to get you a more accurate and precise answer but, in its current form, it will give you a relatively lumped sum of sediment. A hybridized approach could be developed in which the overall yield is determined by the empirical model and then subdivided based upon a sediment budget model. Sediment budgeting is a very useful way to go; it is just very tricky to do in a contentious and adversarial setting where people can pick all those numbers to pieces.

Mr. Massey pointed out that the Regional Water Board is ultimately going to be using a TMDL as a method of getting to water quality. He asked if, given the use of a safety measure, do you feel confident that we will get what we want?

Dr. Collison recognizes that it is extremely hard to get a number, but in the real world in which decisions must be made, he believes that it is a good avenue upon which to base decisions.

Ms. Kuhlman stated that a workshop would be presented in September to continue the discussion so that the public can be involved in the discussion.

Meeting adjourned at 5:51 p.m.

Board Members Absent: John Corbett

Wednesday, August 27, 2003

Chairman William Massey called the Regional Water Board meeting to order at 8:38 a.m.

Item 4. Pledge of Allegiance

Gerald Cochran led the Pledge of Allegiance.

Item 5. Roll Call and Introductions

Board Members present: Richard Grundy, Gerald Cochran, Dina Moore, Bev Wasson, Shawn Harmon, and William Massey

Board Members Absent: John Corbett

Regional Water Board staff: Executive Officer, Catherine Kuhlman; Assistant Executive Officer, Frank Reichmuth; Interim Division Chief, Nathan Quarles; Division Chief, Ranjit Gill; Senior staff: John Short, Mark Neely, and Christine Wright-Shacklett; Technical staff: Jonathan Warmerdam, Dave Fowler, Lauren Clyde, Joan Fleck; Administrative staff Kathleen Daly, Julie Sayre, Jean Lockett, and State Board Liaison: Gary Carlson; Counsels Sheryl Schaffner and Erik Spiess.

Item 6. Ex Parte Communication

The Chairman called for any ex Parte communication disclosure from Board members.

There were no reports of ex Parte communication.

Item 7. Public Forum

Lee Howard, a resident of Ukiah, stated that a Regional Water Board staff and two Department of Fish and Game staff members had inspected his property, and Mr. Howard stated that he was asked not to perform any operations on the site until he heard from the Water Board staff.

[Note: Board Member Corbett joined the board meeting at 8:50 a.m.]

Mr. Reichmuth stated that Mr. Howard would receive a letter or telephone call regarding his property.

Dyane Dewitt spoke regarding the problems of the Roseland Creek.

Brenda Adelman requested that the Regional Water Board staff investigate hospital practices on discarding medications.

Joyce King stated that the Freshwater Working Group has tried everything possible to slow down the rate of harvest in the watersheds. She stated that the Regional Water Board has no choice but to take the strongest actions and issue Cease and Desist and Cleanup and Abatement Orders.

Richard Gienger made announcements on combining efforts of the Forest Stewardship Working Group of the California Department of Forestry and the efforts of the North Coast Watershed Assessment program.

Jim Branham questioned how the ISRP Report will be used until the Regional Water Board gives staff their directives in December 2003.

Mr. Corbett stated that he believed that the ISRP document spoke for it self. He voiced his concern for consistency in policy control.

Mark Rentz asked for a copy of the completed ISRP Report and asked if it was an item that the Board would adopt, accept, or reject once the contract is completed.

Item 8. Resolution for John Giorgi

Catherine Kuhlman introduced a resolution for John Giorgi for his time spent on the Regional Water Board.

MOTION: John Corbett moved to adopt Resolution R1-2003-0091. Gerald Cochran seconded the motion. Motion passed with six votes. Richard Grundy abstained.

Item 9. Resolution for Jack Selvage

Catherine Kuhlman introduced a resolution for Jack Selvage for his volunteer work with the Regional Water Board and staff.

MOTION: Corbett moved to adopt Resolution R1-2003-0092. Bev Wasson seconded motion. Passed unanimously.

Item 10. Minutes of Meeting

Minutes of the December 10, 2002, meeting were presented for approval.

MOTION: John Corbett moved to accept the December 10, 2002 minutes as presented. Bev Wasson seconded the motion. Motion passed unanimously.

Minutes of the May 14 and 15, 2003, meeting were presented for approval.

MOTION: Gerald Cochran moved to accept the May 14 and 15, 2003 minutes as presented. John Corbett seconded the motion. Motion passed. Bev Wasson abstained.

Consent Calendar

Item 4. Order No. R1-2003-0083 Dr. Ira Granat, Granat Diesel Spill, Humboldt County, Recision of Waste Discharge Requirements Order No. 2001-40 WDID. No. 1B00059RHUM

MOTION: Bev Wasson moved to adopt the Consent Calendar. John Corbett seconded the motion. Motion passed unanimously.

Item 14. PUBLIC HEARING Order No. R1-2003-0081 to consider whether to affirm, reject, or modify a Complaint for Administrative Civil Liability issued on July 10, 2003, and or take other enforcement action in the Matter of Hanes Ranch, Inc., and Mr. John Hanes, President of Hanes Ranch Inc., Mendocino County

Chairman Massey administered the oath to those who expected to give testimony in the Hanes matter.

Jonathan Warmerdam, David Fowler, and Christine Wright-Shacklett presented the staff report.

The Board observed a break at 10:13 a.m. and reconvened at 10:20 a.m.

Ginevra Chandler, attorney for Hanes, indicated the Mr. Hanes was having a medical issue, and requested that the Board allow him a few minutes before the hearing continues.

Item 11. Board Chair's, Board Members', State Board Liaison's and Executive Officer's Reports

Gary Carlton provided updates on the Timber Harvest Waiver petition, stormwater, and Klamath River.

Both Mr. Corbett and Mr. Grundy attended the waiver hearing in Sacramento on August 2003. They both complimented staff for making an excellent presentation.

Chairman Massey requested an update on Mr. Hanes. Ms. Kuhlman indicated that Mr. Hanes was not able to continue the hearing. Chairman Massey stated that the hearing will be continued to September 24, 2003.

Item 16. Status Report on Work Efforts in Five Humboldt County Watersheds: Elk River, Freshwater Creek, Jordan Creek, Bear Creek, and Stitz Creek

In January 2003, the North Coast Regional Water Quality Control Board (Regional Water Board) directed staff to prepare and present a Sensitive Watershed Nomination for five Humboldt County Watersheds. The Sensitive Watershed Nomination for Elk River was originally scheduled for the June 26, 2003, Regional Water Board meeting, but was re-scheduled for the August 27, 2003, Regional Water Board meeting to allow additional time for review and comments.

Mr. Corbett stated that there have been several Board motions and a State Water Board decision to make sure that the monitoring programs progress in Bear, Stitz, and Jordan. He requested that a report be sent to the State Water Board on what the Regional Water Board's efforts have been in the three watersheds.

Mr. Reichmuth stated that the State Board's remand required an update every six months. The next update is due at the end of the year or in January 2004.

Pacific Lumber Company speakers stated that it seemed that the majority of non-concurrence issued where to Pacific Lumber Company. Jim Branham echoed the previous speakers by stating that Pacific Lumber Company believes that they are being treated in an inequitable fashion.

The Regional Water Board members discussed the issue of equity to all timberland owners and their adjacent landowners.

Gary Debosh, with the Pacific Lumber Company, stated that it seems that there are inequities. He cited Pacific Lumber Company's THPs that were non-concurrence and that were approved. He stated that he would be willing to work with staff on the non-concurrence.

Dina Moore reviewed the scheduled activities for the five watersheds. Mr. Quarles responded to each activity by giving the completion dates or rescheduled dates of the activities. Ms. Moore indicated that, she understood the immediate need for attention in Freshwater and Elk River Watersheds, however, she expressed a need to keep moving forward with activities in Bear, Stitz, and Jordan.

Mr. Corbett stated that there were multiple board motions on Bear Stitz, and Jordan. He suggested that staff proceed with the monitoring in the watersheds. Mr. Corbett also advised staff to look at all of the Board's motions regarding the watersheds.

Nathan Quarles indicated that the activities will proceed in Bear, Stitz, and Jordan.

Item 18. Update on Bacteria Monitoring in Russian River / Presentation by Sonoma County Health Department

Bob Tancreto stated that the Regional Water Board has had a working partnership with the Sonoma County Department of Public Health to monitor various recreational beaches along the Russian River and several other areas. The Director of Division of Environmental Health, J. J. Krug, was invited to give an overview on the procedures to alert the public of health risks and procedures to close down beaches.

J J Krug stated that his office has been collaborating with the Regional Water Board staff to sample the Russian River. Mr. Krug indicated that there were no regulatory standards that applied to the beneficial uses of recreational use of the waters. The best body of science document available is the draft statutory standards of the State Department of Health Services for ocean water, but they only have draft standards for freshwater bathing stations. Information is being posted on Sonoma County Environmental Health Division's web site with a link to the Regional Water Board's web site.

The Board requested additional information on EPA's standards for beneficial uses for recreational uses of the waters. There was additional discussion with the Board on the level of bacteria in the Russian River and how much the public was at risk. Mr. Krug stated that he was not sure if the public was at risk at this point. Bob Tancreto stated that the bacteria in the Russian River is a little more than it should be but it is not at a level that says that we should close the beaches.

Brenda Adelman stated that she was hopeful that there will be more information given to the public on the bacteria so that those who have health problems will be aware of the bacteria.

Item 21. Status Report of Klamath River Monitoring Coordination and Response to the Potential for Fish Mortality

Peter Otis gave an update to the Board.

Item 17. Consideration of a Sensitive Watershed Nomination to the Board of Forestry for the Elk River Watershed pursuant to Section 916.8 of the Forest Practice Rules

Mr. Quarles gave a background of the issues.

The Regional Water Board staff recommendation is that the Board adopt Resolution R1-2003-0076 and direct staff to submit the sensitive nomination for Elk Watershed to the Board of Forestry with any changes as appropriate.

John Corbett complimented Nathan Quarles on the work that he has done. He asked if the Board of Forestry staff have thoughts on the nomination. Mr. Quarles stated that the Board received two letters one from Andrea Tuttle and one from Bill Snyder. Mr. Snyder outlined several concerns or recommendations that would enhance the package and suggested that the nomination not go forward until those suggestions are incorporated in the package.

Mark Rentz, California Forestry Association, suggested that California Forestry Association has a concern with the way the sensitive watershed process is being used in the nomination.

Richard Gainger stated that he did not understand why the Regional Water Board chose to nominate a sensitive watershed.

Dina Moore stated that this is the first time in her knowledge that one agency suggested to another agency to make a consideration of this kind. She stated that she see this as another tool in the toolbox. Ms Moore express that in her opinion it is important that agencies communicate from Board to Board.

Richard Grundy stated that he saw this as an opportunity to force dialog between the agencies in the public domain. Since we have continually focused on the need for watershed analysis.

Beverly Wasson stated that this might be an opportunity for the two Boards to work together.

Jim Branham stated that Pacific Lumber Company recommends that the Regional Water Board not adopt the Elk River as a sensitive watershed.

MOTION: Dina Moore moved to adopt Resolution No. R1-2003-0076 forwarding the Elk River Watershed nomination with the date changes recommended by staff and with the name change of the Executive Officer. John Corbett seconded the motion. Motion passed unanimously.

The Board discussed the preparation of the other four watersheds for the sensitive watershed nomination. Ms. Kuhlman suggested that staff will report to the Board in January or February 2004 on the progress of the Elk River nomination and, at that time a decision can be made if staff should proceed with the nomination of Freshwater, Bear, Stitz, and Jordan watersheds.

Item 19. Update on Efforts to Modify the Management Agency Agreement with the Board of Forestry, the California Department of Forestry, and the State Water Resources Control Board.

Frank Reichmuth stated that there has been a concerted effort by the Board of Forestry (BOF) and the State Water Board (SWB) to try and get the two agencies together under the spirit of the MAA and

improve the relationships between the two agencies. The BOF and SWB had a joint board meeting in June 2003 to discuss the advantages in updating the MAA. Each board appointed a subcommittee to investigate how to approach updating the existing MAA. We are looking forward to a more modern MAA pending the development of the white papers and further discussion with the boards.

Item 20. Update on Central Valley Region Conditional Agricultural Waiver of Waste Discharge Requirements

Dr. Ranjit Gill gave a brief update on a meeting at the Central Valley Regional Water Board where he and Board member Dina Moore attended on July 10 and 11, 2003.

Item 22. Executive Officer Administrative Civil Liabilities

Frank Reichmuth reported that Administrative Civil Liabilities were issued to Hanes Ranch, Sierra Pacific Industries, and the City of Willits.

Item 23. Violation and Enforcement Report

Stand as written

Item 24. Board Member Requests for Future Agenda Items

John Corbett requested to have the agricultural waiver and the timber waiver on future agendas before the waivers' expiration dates.

Item 25. Monthly Report to the Board

Stands as written

Item 26. Leaking Underground Storage Tanks/Sewage Spills

Stands as written

Item 27. Proposition 65 Notifications

Stands as written

Item 28. Other Items of Interest

There were no discussions for this item.

Item 29. Closed Session items:

The Board adjourned to closed session

The Board returned from closed session with nothing to report.

Meeting adjourned at 4:05 p.m.

The Secretary, Jean Lockett recorded the minutes of the August 2003, Board meeting of the North Coast Water Quality Control Board, to be approved by the Board at its next meeting.

_____ Chairman

_____ Date