

Ltrs-ACS.doc

February 19, 2003

To: Joyce Casey, SEIS for ACS, and Chester Novak, ACS SEIS Hydrologist
From: Fred Swanson, PNW Station, Forestry Sciences Lab, Corvallis, OR
Subject: ACS-SEIS Scientist Interview

I am sorry to be slow responding to your January 29, 2003, memo and questionnaire, but I was traveling and the catch-up process has not been speedy.

I find it difficult to respond to the specific questions in your questionnaire for two reasons:

1. I was not central enough to the ACS development in FEMAT to have a comprehensive expectation of its implementation, as implied in the questions. During FEMAT I focused on the adaptive management chapter and had only bit roles in some of the other chapters.
2. Some of the supporting documents to your letter and to a lesser extent the questions are framed in legal terms. I do not have the background to understand the specific, legal and on-the-ground implications and consequences of key points, such as distinction of Standards and Guidelines vs. Objectives. Of course, I have a sense of what these mean to the "man on the street", but that may not cover legal implications.

To me the most important point is: Consider consequences of proposed actions over local (project) and broader (watershed) spatial scales and over short-term (days to a few years) and long-term (decades to centuries) temporal scales. To focus on only one or a few of these scales can fail to reveal undesirable consequences of a proposed action and may fail to permit actions that have aggregate positive payoff. This multi-scale thinking forces us to confront tradeoffs in time and space, and may fail to yield simple go-no go findings and identification of thresholds that simplify decision making.

Colleagues at the Willamette National Forest I have been working quite a bit for a decade on historic range of variability concepts and their application to forest planning and landscape management. We have two published plans (Augusta Creek and Blue River) and are implementing one in the context of the Central Cascades Adaptive Management Area. We are very interested in the issue of what aspects of the past are relevant to management of the future landscape – the past does not give us a sharp blueprint for managing the future. If this experience is relevant to your work and you would like to discuss it, please let me know.

In the context of impending forest plan revisions I hear talk of independently revisiting other components of the Northwest Forest Plan, such as LSRs, or, more broadly, the NFMA planning rule. I believe that it is very important to not repeat the thinking and ways of doing business that set the stage for the train wreck that precipitated the Northwest Forest Plan – we need to be approaching plan revision by following these basics:

1. Consider the full suite of ownerships across the landscape – USFS, BLM, private. These are linked ecologically, hydrologically, and via administrative procedures (e.g., HCPs for private industrial forestry lands that link practices to adjacent federal lands). We may not be able to adjust one without affecting another.
2. Consider terrestrial-aquatic linkages – e.g., boundaries of LSRs link with delineation of Key Watersheds and management of riparian reserves and uplands are linked in terms of balancing risks to aquatic systems (e.g., can we trade longer retention and higher retention levels in uplands with narrower riparian reserves?). We may not be able to adjust LSRs without affecting ACS.
3. Develop plans and assess their consequences at biophysically meaningful scales (i.e., watersheds and bioregions) rather than at the social constructs of projects and National Forests. Assessments at only project and national forest scales fail to reveal watershed and broader effects critical to following laws.

I realize these points are bonehead simple and beyond the scope of your ACS work, but I think I am hearing them ignored in circumstances that could come back to haunt us big time.

Fred Swanson
Research Geologist

Kelly Burnett

02/07/2003 05:32 PM

To: Joyce Casey/WO/USDAFS@FSNOTES

cc: Ken Wieman/R6/USDAFS@FSNOTES, cnovak@or.blm.gov, Gordon

Reeves/PNW/USDAFS@FSNOTES, Michael J

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Subject: Response ACS-SEIS: Scientist Interview

Dear Ms. Casey,

Attached you will find the requested response to the ACS-SEIS: Scientist Interview. Mike Furniss and I combined our responses. I appreciate the opportunity to comment on the consistency of the Draft SEIS language and the Court's interpretation with my views of the ACS. I recognize the challenges faced by the agencies in implementing the ACS and by your team in attempting to overcome these. Please do not hesitate to contact me for clarification or if I can be of additional assistance.

Sincerely,

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comment on ACS3.doc

February 7, 2003

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ACS-SEIS Scientist Interview

1. Our intention for the ACS is basically consistent with Judge Rothstein's order of September 1999 outlined in the document entitled "FEMAT Scientists Briefing."

I. We agree, "Projects must be analyzed at the site scale for ACS consistency." As we interpret this, each project must be assessed for its consistency with the ACS Objectives. This is based on the direction immediately preceding the ACS Objectives (B-11) "Forest Service and BLM-administered lands within the range of the northern spotted owl will be managed to:" Each project within Riparian Reserves must also comply with the Standards and Guidelines and by reference the ACS Objectives. Regardless of whether a project is located inside or outside of a Riparian Reserve, we expected that it would be evaluated relative to its compliance with the ACS Objectives at site, watershed, and landscape scales. However, it must be recognized that although compliance of a project with some ACS Objectives can be logically ascertained at all three scales, compliance of a project with other ACS Objectives can be ascertained only relative to the watershed and landscape scales. For example, a project can be evaluated at all three scales relative to its ability to "Maintain and restore the physical integrity of the aquatic system including shorelines, banks and bottom configurations (ACSO 3)." However, a project likely would be evaluated based on its contribution to meeting the objective "Maintain or restore habitat to support well distributed populations of native plant, invertebrate, and vertebrate riparian dependent species (ACSO9)" only at the watershed and landscape scales. An evaluation of the project based on its contribution to meeting this objective at a single site makes little sense except for species with low mobility or restricted ranges.

Analysis at multiple spatial scales is essential for evaluating project consistency with the ACS Objectives. As is expressed in the ROD, our intent was that compliance with the ACS required river basin/provincial and watershed analyses (ROD B-22) in addition to the regional-scale assessment of FEMAT. The context provided by each of these analyses was believed necessary to determine if project decisions complied with the ACS Objectives at broader spatial scales. Specifically, ACS Objectives 1, 2, and 9 cannot be approached without the context provided by river basin/provincial-scale and/or regional-scale analyses. For example, river basin/provincial analysis is

needed to identify refugia or stronghold watersheds for salmonid species that are at-risk or listed under ESA. We assumed that ACS compliance would result in minimal risks to aquatic resources in these watersheds once their critical role in the landscape was recognized. Risks were to be minimized by more rigorously documenting the analysis and justification for each restoration project (subsequent discussion in IV. for **projects in Riparian Reserves** applies) and by limiting the number of road miles and the type, intensity, number, and location of other types of projects outside of Riparian Reserves and LSRs. We expected that this approach would be followed regardless of whether or not these sensitive watersheds were designated Key Watersheds.

If implemented as intended, regional and river basin/provincial analyses would determine the range of natural variability and the unique contribution of each watershed to complying with the ACS Objectives at a landscape scale. Our assumption is that these broad-scale analyses would determine the condition/function of each watershed and whether the distribution of watersheds was within the natural range of variability. Unfortunately, only watershed analyses have been conducted, and each watershed was typically considered independently and in the absence of a broader-scale context. In this implementation framework, watersheds with high past management impacts are often avoided because future resource extraction projects are likely to not meet or prevent attainment of ACS Objectives at the watershed scale. Thus, the inclination is to concentrate future resource extraction projects in the least impacted watersheds comprising a managed landscape. This last outcome is definitely not consistent with our intent for the ACS. As previously discussed, our view is that projects in sensitive watersheds, particularly when relatively pristine or functioning as strongholds, would focus on restoration if warranted.

II. We agree, "Short term effects must be considered."

III. We agree, "Watershed analysis findings must be used, instead of being discretionary." This is certainly consistent with our intention and how we read the ROD when planning projects in Key Watersheds or in Riparian Reserves or when proposing changes to Riparian Reserve boundaries. Although not specifically required in the ROD, we also expected watershed analysis findings would be used when planning any project in a watershed for which a watershed analysis had been completed.

IV. We basically agree, "Riparian Reserve projects must benefit aquatic resources." Our assumption was that all restoration projects in Riparian Reserves would be justified based on demonstrated benefits to aquatic resources. Standards and Guidelines either provide direction for how other types of projects in Riparian Reserves can comply with ACS Objectives (e.g., RF-2) or indicate that these projects should meet or not prevent attainment of ACS Objectives (e.g., GM-1).

For **projects inside of Riparian Reserves** (interim or modified on the basis of a watershed analysis) in less sensitive watersheds, our intent was that each would be consistent with the ACS if it complied with: 1) the Standard and Guidelines on p. B-

11 of the ROD as written with reference to the ACS objectives, and 2) the statement on p. B-10 of the ROD, "The intent is to ensure that a decision maker must find that the proposed management activity is consistent with the Aquatic Conservation Strategy Objectives." We expected that the decision maker would demonstrate how each proposed restoration project in a Riparian Reserve met ACS objectives at watershed and landscape scales and how other types of projects either met or did not prevent attainment of ACS objectives.

2. We think that in certain circumstances landscape-scale long-term ACS Objectives could be met if projects were found to have short-term site-specific impacts.

Our intent was that every effort would be taken to prevent short-term site-specific risks to aquatic resources for projects outside of Riparian Reserves in sensitive watersheds or Key Watersheds given the significance of these watersheds in a landscape context.

For projects outside of Riparian Reserves in less sensitive watersheds, we expected that Riparian Reserves would generally buffer aquatic resources from management impacts, providing compliance with ACS Objectives. This is especially anticipated when projects designed for purposes other than restoration are located in less sensitive sub-watersheds based on results of a watershed analysis that describes baseline conditions, important processes, and aquatic resources with potential to be negatively affected by land management. Our assumptions were that outside of Riparian Reserves in these less sensitive watersheds: 1) any site-level and cumulative project effects on aquatic resources would likely be negligible; and 2) these effects would be analyzed and disclosed under NEPA then mitigated or avoided if deemed to be more substantial.

We assumed short-term impacts of restoration projects in Riparian Reserves would be tolerated if these were analyzed relative to impacts of other foreseeable projects, disclosed, and were outweighed by long-term benefits to aquatic resources. We generally view short-term impacts of other types of projects in Riparian Reserves as inconsistent with the ACS except when Standards and Guidelines offer specific direction for meeting ACS Objectives as in RF-2.

Our expectation is that short-term site-specific impacts would be evaluated relative to the potential for all consequences to aquatic resources, both short- and long-term, and a rational decision made considering overall benefit and sensitivity of subject populations. For example, a short-term increase in sediment from removing culverts may not be justified if the fish population in the basin is small and declining and this short-term effect poses a risk to it. However, the same project may be justified, based on its long-term benefit for increasing stream connectivity, in another basin where the fish population is healthier. Likewise, short-term impacts on salmon habitat of clear cutting in the matrix of a stronghold watershed can be difficult to justify even if long-term ACS Objectives are met. However, such short-term impacts may be justifiable in a watershed with less landscape significance if mitigation measures are demonstrated to comply with ACS Objectives at the landscape and watershed scales over the longer-term.

3. The ACS Objectives were not intended as Standards and Guidelines but to provide direction toward which the agencies should manage, however reference to the ACS Objectives in the Standard and Guidelines was intentional. The Standards and Guidelines apply only to projects proposed in Riparian Reserves. Thus, projects in Riparian Reserves should be assessed for their compliance with the Standards and Guidelines and by reference the ACS Objectives. As previously discussed, we expected that each project would be evaluated relative to its compliance with the ACS Objectives at the site, watershed, and landscape scales. We recognized that although compliance of a project with some ACS Objectives can be ascertained at all three scales, compliance with other ACS Objectives can be ascertained only at the watershed or landscape scale.

4. Unfortunately, we think the language proposed in the Draft SEIS is not consistent with our original intent for the ACS so does not clarify its implementation.

Although we agree “achievement of landscape-scale objectives cannot be meaningfully evaluated on a site-by-site, project-by-project basis,” we anticipated that each proposed project would be evaluated based on its consistency with ACS Objectives at the site, watershed, and landscape scales as previously described.

We think that all relevant influences must be evaluated to assess the significance of any project or site-scale effect on aquatic resources. Thus, the effect of a project should be assessed based on its potential contribution to the cumulative effect of multiple influences. That is, almost any project or action can and should be evaluated in the context of other relevant effects and interactions at scales appropriate to the objective and resources in question and evaluated at appropriate scales through cumulative effects assessments informed by watershed analysis.

We agree projects within Riparian Reserves must comply with Standards and Guidelines but the Standards and Guidelines clearly and intentionally reference the ACS Objectives. Thus, each project in a Riparian Reserve must comply with the ACS Objectives. The Standards and Guidelines for Riparian Reserves are not analytically or practically meaningful without reference to the ACS Objectives. Compliance of a project with the ACS Objectives should be evaluated at the appropriate scales for each specific objective. Our assumption that Riparian Reserves are sufficient to minimize effects on aquatic resources should be validated in sensitive watersheds. This is consistent with the requirement that a Watershed Analysis be completed prior to resource management in a Key Watershed.

We expected that landscape and watershed context would indicate when and where short-term site-scale effects are acceptable.

In b) we suggest changing “administrative record” to “project-level NEPA documents.”

We assume that the changes on page i, A-6, and C-1 were proposed to keep the ACS Objectives from being considered as Standards and Guidelines. However, these changes may have unintended consequences relative to other components of the ACS as described

in Appendix B. For example, the Summary of Aquatic Conservation Strategy for Key Watersheds (B-19) states, "...there will be no net increase in the amount of roads in Key Watersheds." This appears clearly intended to be a Standard, so we are uncertain whether the proposed changes will modify the effect of this and other ACS direction in Appendix B.

It is our opinion that many of the perceived shortcomings in the ACS result from a failure to conduct river basin/provincial analyses, and in many cases, adequate watershed analyses and from decoupling all but site-level analysis from planning. In our view, the best means to clarify implementation of the ACS is by providing language that addresses these considerations and that describes how to evaluate the effects of a project within the context of analyses conducted at the site, watershed, river basin/provincial, and regional scales.

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February 6, 2003
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ACS – SEIS: Scientist Interview

1. I believe it was the scientists' intent that ACS be applied in an integrated fashion both temporally and spatially. The overall goal was one of improving the long-term and watershed-scale integrity of public lands, but to do this, examinations of both the site-specific and watershed scales, as well as the short term and long term are necessary. Certainly the Standards and Guidelines, for example, apply primarily at site-specific and project scales, but they are intended to help achieve broader scales improvements and are therefore tiered to ACS Objectives, which primarily operate at broader spatial and temporal scales. The concept of short-term and site-specific degradation is not necessary inconsistent with overall improvement of integrity, but the degradation must be limited in time and space (certainly not chronic) and when weighed at the broader scales, demonstrate an overall improvement in attainment of ACS Objectives.
2. I believe it was the intent of FEMAT scientists that both site-specific and watershed-scales be considered in project evaluation. Our primary emphasis was on larger geographic and temporal scales. That is, I believe that we would accept some short-term degradation – especially if the disturbance occurred during a brief time – if the longer-term conditions improved. Specifically, I understood that culvert replacement, for example, would contribute sediment to the channel for a short period, but that overall impacts clearly should be positive. Similarly, livestock grazing could impact riparian areas. But such grazing would be consistent with the ACS if at the end of the grazing season there was a net improvement in riparian and water quality conditions. For consistency with the ACS, I believe that short-term degradation would have to be restricted to a single season in duration or preferably an even shorter time period.
3. I agree that site-specific projects should be assessed for their compliance with ACS Standards and Guidelines. As some of the S&Gs refer back to ACS Objectives, I would agree that if projects comply with S&Gs, then in the long term and at the landscape scale the ACS objectives should be met. However, the Objectives are not without value at smaller scales.
4. I am uncertain as to whether the proposed language is an improvement. I agree that the ACS Objectives were primarily written in reference to larger spatial and temporal scales, but again, the integration of analyses at multiple spatial and temporal scales is critical. I am not sure that relegating the Objectives *strictly* to the broader spatial scale is consistent with our original intent. If the purpose of the proposed changes is to strictly segregate the Standards and Guidelines to project scales and the Objectives to broader

scales, than, in my opinion, it is likely to be inconsistent with our intent. It certainly does not fit with my personal thinking. I believe that a change that clarifies our intent to focus on long term and watershed scale improvements in integrity is worthwhile; if it is clear that any degradation must be limited in both temporal and spatial extent and that broader scales must demonstrate improvement. Analysis must occur at both project and watershed scales.

The example of a culvert replacement is primarily a temporal scale issue. That is, allowing for a short-term degradation if a net improvement is seen in sediment regimes and fish passage in the long term.

February 5, 2003

Joyce Casey
SEIS for Aquatic Conservation Strategy
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Dear Ms. Casey:

Attached is my reply to your request for ACS scientists to respond to proposed revisions in the Aquatic Conservation Strategy. I understand that you are seeking the direct opinion of some of the architects of the ACS component of FEMAT on matters that are of interest to the court and SEIS team. Although I'm sure this is unintentional, some of the questions strike me as somewhat "leading", and I am therefore reluctant to answer them categorically. Instead, I have taken the liberty of trying to explain how I understood the ACS to function, in the hope that this may usefully shed some light on the questions you are trying to resolve.

Please feel free to contact me if you need more information; I'll be out of the country from February 6-16 But back after that. I can be reached at 541-750-7328; e-mail: ggrant@fs.fed.us; fax: 541-78-8792).

Sincerely,


Gordon Grant
Research Hydrologist

Encl.

Date: February 4, 2003

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1. At the outset, I must make it clear that I do not fully understand the recent rulings and interpretations of the Aquatic Conservation Strategy and therefore cannot speak directly to whether the court's interpretations are consistent with the original intent of the strategy. In lieu of addressing that consistency on a point by point basis, I prefer to describe my understanding of the original ACS strategy to and leave it to others to compare the two. I will emphasize how I interpret the logic around the "scale" issues (i.e., site, watershed, etc.) as these seem particularly relevant to the decision and proposed revision. Although I put these forward as solely my interpretations, discussions with other members of the ACS team have convinced me that I am not alone in these observations; in fact these interpretations are widely shared by others who helped craft the ACS.

The ACS was hierarchically developed around four scales of interest: region, province, watershed, and site, with each smaller scale or nested within the next larger scales. ACS elements on each of these scales were intended to complement each other and work together to provide an overall strategy for conserving T&E species while permitting forest management activities, including resource extraction, to move forward. Key components of the ACS, including key watersheds, riparian reserves, watershed analysis, ACS objectives, ACS standards and guidelines, etc., were designed with specific *goals* in mind, rather than specific *scales* in mind. For example key watersheds were intended to protect particularly high quality fish habitat, riparian reserves served a number of stream protection measures, and so on. The components were not necessarily scale-dependent – riparian reserves, for example, though established on a site or watershed basis, were intended to provide interim or potentially long-term protection to stream corridors that provided provincial or even regional benefits. Having said that, there were obviously explicit scales attached to some specific components, i.e., key watersheds were at the "watershed" scale.

Much of the discussion in the court decision and proposed revision address what scales were implicitly or explicitly attached to the ACS Objectives and the ACS Standards and Guidelines. In my view, the ACS Objectives were really goals for the overall strategy – that is, they were written in what might be called "constitutional language" that was sufficiently general to be applicable over broad areas and provide readily interpretable reference points for proposed actions, both anticipated and unforeseen. They were *not* intended as immutable standards against which specific proposed actions should be judged. In fact, a rigorous interpretation of the objectives, as for example, those calling for no change in flow regimes beyond natural variability, would necessarily lead to no human action whatsoever in watersheds, since virtually any human activity influencing the movement of water through a basin will change the flow regime to some (but possibly undetectable) extent.

ACS Standards and Guidelines were intended to provide specific management direction, and were most clearly tiered to the site or project level. They were intended to minimize

adverse impacts on the site scale and set bounds on allowable activities within reserves or watersheds. They were *not* intended to address cumulative effects – that was the goal of watershed analysis, as discussed below. A key related point is that the original conception of Standards and Guidelines is that they represented *interim* standards for how to conduct land management activities prior to watershed analysis, and were subject to some degree of landscape- and site-level tuning or adaptation as the result of that analysis. The same concept applied to riparian reserves. Neither component was originally thought of as set in stone; *they were our best effort to protect resources until a more watershed- and site-level analysis could be accomplished (my italics for emphasis).*

My view is that later events and decisions obscured or confounded this interpretation of the role of riparian reserves and ACS standards and guidelines. The key issue became the role of watershed analysis. We envisioned watershed analysis as the means by which landscape- (that is watershed and project) level issues that could not be foreseen or prescribed at the scale of the region (which is the scale we were working on in crafting FEMAT) would be evaluated and management direction developed accordingly. Watershed analysis would provide: 1) the information base to guide watershed and site-specific decisions and revisions to the Standards and Guides, so that decisions and activities could be “fit” to individual landscapes; this included analysis necessary to define the spatial and temporal context of specific projects; and 2) the basis on which cumulative effects would be evaluated for individual watersheds. There were other related goals for watershed analysis, including providing the baseline data from which future monitoring activities would measure trajectory, trend, and compliance with ACS objectives.

At some point, however, a decision was made that watershed analysis would not carry any specific direction or be tied to any specific management decisions. Instead, watershed analysis was to be an exercise in gathering and displaying information potentially useful in making management decisions, but not tied to any particular decision. Beyond that, watershed analysis was deemed too expensive and involved to do more than once, so its role as a mechanism for evaluating cumulative effects or guiding monitoring activities never came to fruition. In the absence of a clear process for changing and tuning Standards and Guidelines or riparian reserves to individual landscapes, the S&Gs and reserves were not seen as interim, but default and essentially immutable. If I read the court issues and interpretations correctly, apparently the ACS Objectives achieved something of a similar fate, and became the basis on which agencies argued for overall compliance and no jeopardy calls. There is some logic here, in that the ACS team felt that if the S&Gs and Objectives were followed, that risk to aquatic ecosystems would be low. But the intent was always to have a more dynamic plan, and a dedicated program of watershed analysis was essential to that plan.

My intent here is not to argue with the decision about how watershed analysis would actually be implemented but to point out that the current issues facing the Federal management agencies and the courts are directly tied to those implementation decisions. That is, in my opinion the scale problems of how to evaluate cumulative effects of multiple site-specific actions cannot be resolved either by recourse to the Standards and

Guides or to the ACS objectives – that was the role intended for watershed analysis. Without a watershed analysis (or some similar process) tied directly to management actions, incremental or cumulative effects of individual actions on watersheds or any other scale cannot be determined, as required by NEPA.

2. The answer is yes, but only if tiered to a broader view afforded by watershed analysis. Otherwise specific project actions could directly and negatively affect ACS objectives. For example, basin-scale hydrologic or sediment delivery processes that conflict with ACS objectives can be influenced by individual site impacts, such as canopy removal or root strength loss.
3. I do not agree that simply by complying with Standards and Guidelines at the project or site scale, that ACS Objectives are automatically met. Some larger scale consideration of landscape elements such as: 1) pattern of activities; 2) intensity of activities; 3) timing of activities relative to other actions; and 4) other natural or anthropogenic disturbances operating at larger or neighboring scales, all have bearing on whether an individual site activity conforms to ACS objectives. That's what a cumulative effect or watershed analysis is intended to provide.
4. Although it will clarify the process, I'm not sure it will address the issues raised in 1, 2, and 3 above.

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ACS – SEIS: Scientist Interview

1. Please refer to attachment 1, which contains a summary of recent rulings (Rothstein) and interpretation given to the Aquatic Conservation Strategy (ACS). At the time the NW Forest Plan was written, did you intend that the ACS would be interpreted the way the court has?

Simple answer - No!

2. Was it your intent that landscape-scale long-term ACS objectives can still be met if projects are found to have short-term site-specific impacts? Please refer to specific examples (such as removal of culverts for long term stream connectivity vs. short term increase in sediment). If possible provide examples where ACS objectives could not be met.

Again, a simple answer - yes! The ACS was viewed as a framework for multi-scale analysis whereby project activities would be provided appropriate context and SYSTEM objectives would be met at watershed or larger scales over time. All this was presented with a clear view of the importance of natural disturbance regimes and short-term project effects. A possible example of where ACSO's would be compromised is a proposed activity (harvest/roads) in an unentered 6th or 7th level watershed that lies within a 5th level watershed that a watershed analysis shows to be degraded and directly affecting values @ risk (fish, water quality). Site contributions to downstream degraded conditions are contrary to attainment of ACSO's