

CALFed Progress Questionnaire California Sea Grant College Program

ConfirmationNumber 20061016215045

1st Year ProjectNo 2C R/SF-11 ProjectYear 2A Printed: 4/23/2008 Interim Ouestionnaire 1:55:50 PM TypeQuestionnaire 2B Preparer Information Walter N Heady PrepName 1A PrepEmail 1B heady@biology.ucsc.edu 831 234 2942 PrepPhone 1C **Project Information** $\textbf{StartDate_3a} \quad 9/01/05$ R/SF-11 ProjectNo_2C **EndDate 3b** 8/31/08 Effects of habitat heterogeneity on the growth, survival and movement of juvenile steelhead (Oncorhynchus ProjectTitle 4 mykiss) with implications for management CALFed Fellow contact information FelLast_5B Heady Fellnit_5D N FelTitle_5A Mr FelFirst 5C Walter University California Santa Cruz FelInstitution 5E FelDepartment_5F Ecology and Evolutionary Biology FelStreetAddr_5G 100 Shaffer Rd Santa Cruz FelState_5l CA FelZip_5J 95060 FelCity 5H 831 234 2942 FelPhone_5K FelFax 5L 831 459 3383 heady@biology.ucsc.edu FelEmail_5M FelPositionTitle_5N Doctorate student Research Mentor (for additional please see #8) RMTitle_6A Dr RMLastName_6B Carr RMFirstName_6C Mark RMInit_6D RMInstitution 6E University California Santa Cruz RMDepartment_6F **Ecology and Evolutionary Biology** RMStreetAddr_6G 100 Shaffer Rd RMCity_6H Santa Cruz RMState_6I CA RMZip_6J 95060 831 459 3958 RMFax 6L 831 459 3383 RMPhone 6K RMEmail_6M carr@biology.ucsc.edu RMPositionTitle_6N Associate Professor Community Mentor (for additional please see #9) CMTitle_7A Dr CMLastName_7B Merz CMFirstNamt 7C Joseph CMInit_7D East Bay Municipal Utilities District CMInstitution 7E

| California Sea Gro CALFed Progress | nt College Program Questionnaire | ProjectYear_2A TypeQuestionnaire_2B | | ProjectNo_2C onnaire | R/SF-11 |
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| MDepartment_7F | Fisheries and Wildlif | | | _ | |
| MStreetAddr_7G | 1 Winemasters Way | | | - | |
| CMCity_7H | | _ CMState_7I <u>CA</u> CMZip_7 | | _ | |
| CMPhone_7K | 209-365-1093 | CMFax_7L | | _ | |
| CMEmail_7M | jmerz@ebmud.com | | | - | |
| IPositionTitle_7N | Fisheries Biologist | | | _ | |
| lditional Research | Mentors and Communi | ty Mentors | | | |
| Additional Research | | | Additional Con | nmunity Mentors_9 | |
| Title = Dr | | | | | |
| | gard Isan | | | | |
| FIISHNAIDE - SI | isaii | | | | |
| Institution = NO | OAA National Marine | Fisheries Service | | •••••• | |
| | | sion | | | |
| | 10 Shaffer Rd | | | | |
| City = Santa Cr | | | | | |
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| Project Objectives ProjectObjectives | | sponses, and answer the questi | ons in a style ap | propriate for laymen | l. |
| | | etermine the effects of water to | | | |
| | | ent, 2) determine how habitat | | | |
| | | fresh water macro-invertebra | | | |
| | | ual level such as growth, move | | | |
| | | mes and their timing, and hab | | | |
| | | East Bay Municipal Utility D | | | |
| efficiently provi | de water to customers | while maximizing habitat and | productivity for | threatened steelnead | 1 . |
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| Summary | of | progress i | n meetina | each | of | these | goals | and | objective | es |
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| ProgressSummary | / 11 |
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| I am currently examining benthic and drift macro-invertebrate samples collected from two side channels on the Mokelumne River |
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| created as habitat enhancements. I am examining how these newly created habitats are colonized by fresh water macro-invertebrates |
| (a preferred food of juvenile steelhead) and how the macro-invertebrate community develops through time (succession). This |
| information is necessary for our understanding of the ecology of these systems and to help direct restoration and habitat enhancement |
| efforts in the future. By comparing macro-invertebrate community structure (i.e. diversity and abundance of taxa) to concurrent diet |
| samples collected from within the side channels I can relate the colonization and succession of these habitats to benefits to steelhead. |
| This in turn relates habitat management actions to the management of sensitive species such as steelhead. I hope to expand this |
| aspect of the research. I am preparing results of |
| this study to present at the 4th Biennial CALFED Science Conference 2006 |
| Making Sense of Complexity: Science for a Changing Environment. |
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PROJECT MODIFICATIONS: Please explain any substantial modifications in research plans, including new directions pursued. Describe major problems encountered, especially problems with experimental protocols and how they were resolved. Describe any ancillary research topics developed.

Modifications_12

I am interested in examining the role of habitat heterogeneity on community structure of aquatic macro-invertebrates and fish. I am then interested in examining how the resulting community structuring from habitat features such as instream wood and side channels affect individual growth and population level dynamics of sensitive species such as Oncorhynchus mykiss. Results could help direct restoration and other management actions to benefit such sensitive species.

| ifornia Sea Grant College Program _Fed Progress Questionnaire | ProjectYear_2A TypeQuestionnaire_2B | | ProjectNo_2C naire | R/SF-11 |
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| ccomplishment, that is significant effects s looking for "management cue" (see http: BenefitsApplic_13 | your project has had on re //science.calwater.ca.gov/po | source management df/soemgmtcues.pd | or user group be f). | havior. CALFED |
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| ccomplishment, that is significant effects looking for "management cue" (see http: BenefitsApplic_13 Results could help restoration and habita management to benefit sensitive species. | your project has had on re //science.calwater.ca.gov/po t enhancement efforts to be ecosystem functions, and b | source management df/soemgmtcues.pd nefit sensitive spec | for user group be f). cies. Results coul | havior. CALFED d also direct water |
| BENEFITS AND APPLICATIONS: Suggest accomplishment, that is significant effects is looking for "management cue" (see http: BenefitsApplic_13 Results could help restoration and habita management to benefit sensitive species, reliable water for customers. | your project has had on re //science.calwater.ca.gov/po t enhancement efforts to be ecosystem functions, and b | source management df/soemgmtcues.pd nefit sensitive spec | for user group be f). cies. Results coul | havior. CALFED d also direct water |
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PUBLICATIONS: List any publications, presentations, or posters that have resulted from this funded research. Give as many details as possible, including status of paper (e.g., in review; in press), journal name, conference location and date of presentation. Please note (as outlined in the conditions of the award) that each fellow is required to submit an abstract for an oral or poster presentation at each State of the Estuary conference and CALFED Science Conference during the duration of the fellowship.

| Publications 14 |
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| 15 minute oral presentation at: |
| 4th Biennial CALFED Science Conference 2006 |
| Making Sense of Complexity: Science for a Changing Environment |
| OCTOBER 23-25, 2006 |
| Sacramento Convention Center |
| 1400 J Street, Sacramento, California |
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COOPERATING ORGANIZATIONS: List those agencies and/or persons who provided financial, technical or other assistance to your project since inception. Describe the nature of their collaboration.

| East Bay Municipal Utilities District EBMUD Dr. Joseph Merz is my community advisor on my project. EBMUD has been very helpful in letting me come out for their field work to help familiarize myself with the system. They have also been very supportive in letting me view data to help direct my research. I am performing lab analysis on field samples that EBMUD collected. This benefits EBMUD by getting the work done and statistically analyzed and provides me with something to present at the CALFED symposium, as well as act as a pilot study to direct my project. Dr Merz has been incredibly helpful through this whole process. | | | | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|
| AWARDS: List any special awards or honors that you, or mentor or members of the research team, have received during the duration of this project. Awards_16 | | | | |
| I received both the Friends of Long Marine Lab Student Research and Education Award | | | | |
| and the STEPS Institute Awards for Graduate and Undergraduate Environmental Research | | | | |

KEYWORDS: List keywords that will be useful in indexing your project.

Keywords_17

juvenile steelhead, rainbow trout, oncorhynchys mykiss, growth, movement, survival, habitat features, habitat heterogeneity, community, macro-invertebrates, PIT tag, instream wood, side channel,

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| Tricking bist any parente associated with your project | ATENTS: List any patents associated wi | ith your projec | t. |
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| Patents_18 |
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| none |
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Additions: Additional information can be added here. Please begin the text with the number of the question you are adding to.

| Additions_19 |
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