



Five Counties Salmonid Conservation Program (5C)

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E- NEWSLETTER

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5C IS NOW A PART OF THE NORTHWEST CALIFORNIA RESOURCE CONSERVATION AND DEVELOPMENT COUNCIL: After more than two years of planning and preparations, the 5C Program completed its transition out of County government on February 1. We now serve and assist the 5C Counties, landowners, and others as part of the Northwest California Resource Conservation and Development Council (RC&D), a non-profit organization serving Del Norte, Humboldt and Trinity Counties. The 5C Program continues its work with Mendocino and Siskiyou Counties through Memorandums of Agreement with both the North Coast and ORE-CAL RC&D's. Our contact information is:

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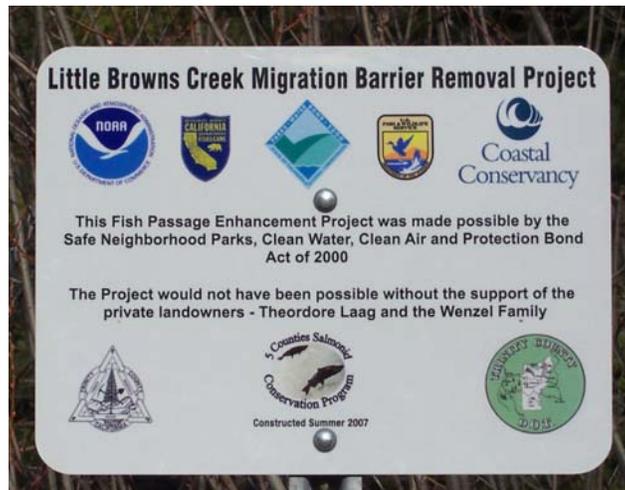
STATE FISCAL CRISIS IMPACTS EVERYONE AND EVERYTHING IN THE CONSERVATION FIELD:

The fiscal benefits of transitioning to the RC&D were tempered by the fiscal impact of frozen and suspended state bond funds (refer to the following story for a summary of the state-wide impact of the bond fund suspension http://www.coastandocean.org/coast_v24_no4_2008-09/articles/Bond_Freeze_01.htm).

In addition to the loss of project grant funds, the 5C Program Grant (PG) from the Fisheries Restoration Grant Program was not awarded. The PG grant has been key to sustaining the base funding for the 5C staff and office as well as watershed, biological, design, engineering, and workshop consultants. As a result, the 5C also had to lay off its Natural Resources Technician, Carolyn Rourke, as of July 1 and reduce staff hours for all other employees. In addition to impacts to our staff budget, loss of project-specific grants and/or delays in releasing funds caused a significant shake up in project scheduling. 5C staff responded to these challenges by writing additional grant proposals to keep projects moving forward (see **GRANTS** discussion). We expect that the next few years will pose a difficult challenge for developing project grants as Counties scale back the level of funding commitment they can make due to cuts and/or delays in state transportation funding and the state grant funding issues. Even in this fiscal environment, we are continuing to coordinate and discuss future projects with the Counties and are excited about the next group of restoration projects.

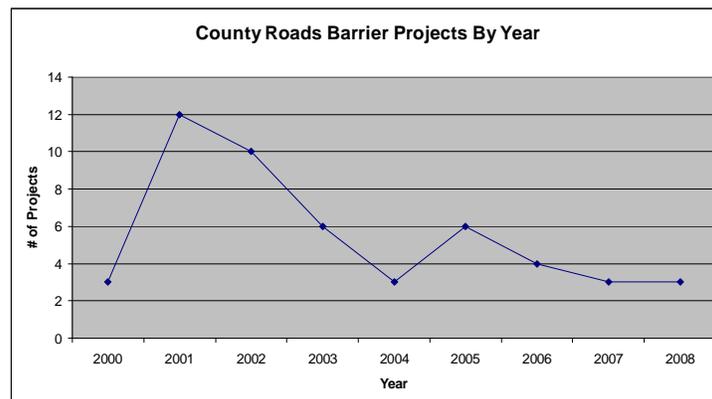


GRANTS: The 5C staff has been especially busy this year preparing grant proposals for the Program and our member counties. Large grant programs such as the American Recovery and Reinvestment Act (ARRA), Department of Fish and Game's Fisheries Restoration Grant Program (FRGP), and National Association of Counties (NACo) Coastal Counties Restoration Initiative have kept us, and continue to keep us, busy. In addition, we have pursued a number of regional or specialized proposals including the: Secure Rural Schools Act Resource Advisory Committee (RAC) Title II grant program; US Bureau of Reclamation's Trinity River Restoration Program (TRRP) Fish and Wildlife Restoration Program; and CA Energy Commission ARRA Alternative and Renewable Fuel and Vehicle Technology Program pre-proposal. We have also subcontracted with West Coast Watershed on sustainable energy projects (Del Norte and Trinity Counties). This grant writing effort has been a mixed bag. Some proposals (notably ARRA) did not make the funding cutoff lists and many proposals are still being reviewed. We anticipate submitting several more grant proposals this fall including the NOAA Coastal and Marine Habitat Restoration (National and Regional) Partnership and projects to Open Rivers. The good news is that we have already received some grant approvals allowing us to continue working on projects that had frozen funding.



2008 & 2009 MIGRATION BARRIER REMOVAL PROJECTS: In 2008, three migration barrier removal projects were completed on County roads including Grassy Creek at Fieldbrook Road (Humboldt County), Horse Creek at China Grade Road (Siskiyou County) and Hall City Creek at Wildwood Road (Trinity County). These projects opened 5.7 miles of steelhead and/or coho salmon habitat. Both the Horse Creek and Hall City Creek crossings were overtopped in the winter of 2005-2006, causing damage to the pipes and/or the road surface and fill and to downstream water quality conditions. Replacement of undersized pipes not only improves passage for fish and natural transport of bedload and woody debris materials, it also reduces the maintenance needs and road closures during high flows and critical storm events.

Member counties have collectively averaged 5.6 migration barrier removal projects per year since 2000. As the highest priority sites are treated, the rate of replacement has slowed as shown in the following chart:



**Salmon Creek (USFWS 1 Site): 2007 Caspar Creek (Cal-Fire 2 Sites): 2008

2008 & 2009 MIGRATION BARRIER REMOVAL PROJECTS

Upper Left: Pre-project photo shows damage to the inlet of the Horse Creek culvert from the 05/06 storms. **Upper Right:** New bridge crossing of Horse Creek **Lower Left:** Pre-project photos of Grassy Creek with 8' x 6' box concrete culvert & outlet jump pool that prevented most fish from moving upstream (note summer flows ran under crossing rather than through it) **Lower Center:** Footings for the natural bottom arch are prepared **Lower Right:** The new Grassy Creek arched culvert



**In addition to the county barrier removal projects, construction of the new North Fork and South Fork Caspar Creek fish ladders was completed. The paired watersheds are located in Jackson Demonstration State Forest in Mendocino County. The sites are managed by the U.S. Forest Service's Pacific Southwest Research Center in cooperation with Cal-Fire. Concrete weir dams (flow gauging stations) are located upstream of the fish ladders and research data from the gauge stations is used to monitor changes in stream flows at various levels of forest management activities to correlate effects of the prescribed treatments with effects in the watershed (rates of run-off, etc). The fish ladder improvements were required in 1999, but action to replace and/or retrofit the ladders did not occur until 2004 when the Coastal Conservancy requested that the 5C Program facilitate the project utilizing Conservancy design funding. A technical team from state and federal agencies was assembled and guidelines and goals were developed for the projects and 5C retained Winzler & Kelly Engineering (Eureka) to complete the design of the replacement ladders. Program staff also worked with CalFire, Coastal Conservancy, and Caltrans to fund construction. The CalFire staff at Jackson Demonstration State Forest took over the project bidding, construction, and monitoring aspects once the design and permitting processes were complete with assistance from the Forest Service.

The South Fork ladder was outfitted with a walkway and viewing windows for public education efforts. The South Fork upgrades provide opportunities for greater research in fish movement in response to stream flow and temperature fluctuations.



Upper Left: North Fork Caspar Creek's 45+ year old wooden ladder with 1' jumps. During low summer flows water leaked through the old ladders reducing opportunities for fish to move up and downstream

Upper Right: Old South Fork Ladder during high flows. The original wooden ladder had 1' high jumps and the final jump over the notched weir dam required clearing a wide concrete buttress

Lower left: The new South Fork Ladder nearly completed. The new ladders have 6" maximum jumps and the labyrinth weir incorporated into the new ladders allows for increased flows while sustaining fish passage in the ladder/ The pools upstream of the ladders, but below the weir dams, are also maintained at a level allowing for fish to pass over the weir dam **Lower Right:** Fish passing through the ladder in April 2009



The first half of 2009 found many projects "frozen" and unable to start or finish. Mendocino County and 5C staff had to scramble in the spring and early summer to backfill "frozen" grant funds to complete the high priority Ancestor Creek Migration Barrier Removal Project this year. Ancestor Creek is a tributary to the Mattole River near Sanctuary Forest. In order to finance the project, 5C, Mendocino County and the Coastal Conservancy adapted to the rapidly changing state fiscal environment. These efforts assured that conservation work would continue and remain focused on a priority fisheries restoration project while also helping economically battered communities.

One project planned for construction in 2009 was a casualty of funding and state contract delays. Indian Creek, another high priority tributary to the Mattole River, in Humboldt County has been awarded to go to construction, but work will be delayed until 2010. Even with the uncertainty, two county barrier removal projects have been completed this year and a third is in progress:

- White's Gulch (White's Gulch Road) - Siskiyou County. This project started in July (see pictures below) and construction work was completed in early October. Final revegetation at the site is scheduled for December 2009-March 2010.
- Ancestor Creek (Briceland Road - Mendocino County). This project was 90% completed between September 28th (when fish were moved) and October 12th when the new crossing was opened. While revegetation and paving need to be completed, this is a new record for project construction.

- Finley Gulch (Roundy Road - Trinity County). This small project will take 4 days and will be completed by October 30th.

The White's Gulch Migration Barrier Removal Project (tributary to the North Fork Salmon River) was the last of three barriers removed on White's Gulch. In October 2008 the Salmon River Restoration Council, CDFG, and NOAA Fisheries removed two upstream dams that were blocking juvenile and adult passage (www.nmfs.noaa.gov/habitat/restoration/projects_programs/crp/damcam2.html). The dams were located on the Klamath National Forest and were a relic of mining activities.



Whites Gulch (Siskiyou County) outlet jump (**upper left**) in October 2008 and new abutment form work in August 2009 (**upper right**). The last segments of the culvert were removed on September 23rd and the bridge is now open for travel (**lower left view from outlet area**). Seeding and mulching of the old road approaches was completed on October 15 (**lower right**) and tree planting is scheduled for winter 2009.



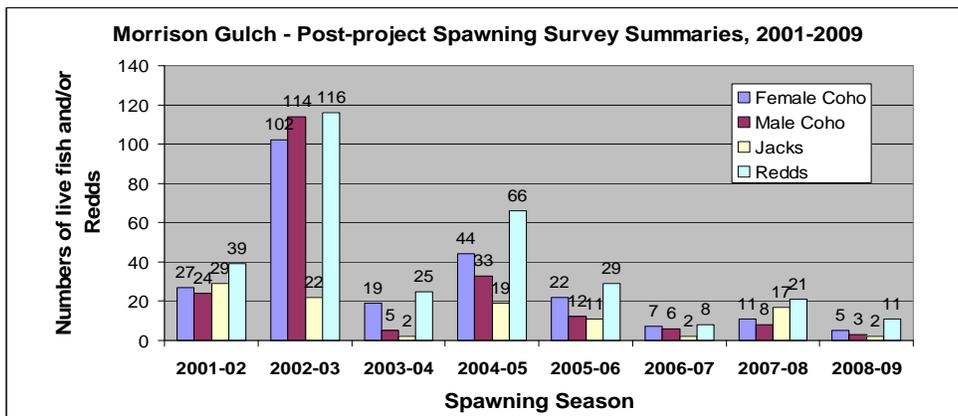
Below: Pre-project outlets of Ancestor Creek (left) in Mendocino County and Finley Gulch (right) in Trinity County



The Indian Creek and Ancestor Creek projects are located relatively near each other within the Mattole River watershed. A number of projects have been done within the Mattole, which bisects Humboldt and Mendocino Counties. The Finley Gulch barrier (Trinity River watershed) is a joint sediment reduction and fish passage project that will replace an undersized culvert allowing steelhead, and potentially Coho, to move upstream.

In addition to the County road projects, 5C Program staff continued to work this year with the Coastal Conservancy, Caltrans and a private landowner to address three additional migration barriers on Ryan Creek (Eel River watershed) in Mendocino County. It is anticipated that at least three of the four projects will be completed in 2010, including the County site.

FISHERIES MONITORING: The 5C Program consulting fisheries biologist Ross Taylor has been monitoring a few select streams where county barriers have been removed. Morrison Gulch (Humboldt County) at 10 years is the longest continuing monitoring project. The site was a complete barrier for 50+ years prior to 2001. Between 1998 and 2000, Humboldt County tried unsuccessfully to get the necessary permits to replace the culvert. In the fall of 2000, with NMFS approval, Taylor relocated adult Coho across the road to spawn upstream of the crossing. In 2001, Humboldt County was able to replace the culvert and fish immediately took advantage of the approximately 0.6 miles of new upstream habitat. Nearly ideal ocean conditions in 2000-2003 resulted in large numbers of Coho running up Jacoby Creek and into the newly opened Morrison Gulch tributary. While ocean conditions, droughts, and other factors have resulted in less favorable in-stream conditions during the most recent years, Coho still return to Morrison Gulch.



Monitoring at the Little Browns Creek project site has been hampered by three years of drought and late rains. Even under these severe conditions, young of the year steelhead have been found upstream of the former barrier site. Little Browns Creek culvert outlets prior to bridge construction (**left**) & post-project view downstream (**right**).



ROAD DRAINAGE AND SEDIMENT REDUCTION IMPROVEMENT PROJECTS IN PROGRESS: Between 2008 and 2009, five County road drainage/sediment reduction projects have been implemented or are planned in Trinity County, all within the Trinity River watershed. The Indian Creek Road Sediment Reduction Project was completed by Trinity County Department of Transportation (TCDoT) in August 2008 and was funded by the TRRP Fish and Wildlife Restoration Program, Fish and Game's Fisheries Restoration Grant Program (FRGP), and Trinity County Department of Transportation (TCDoT). The Deerlick Springs Road project is nearing completion and crews began work on Reading Creek Road in late September. Two additional projects on China Gulch Road and Finley Gulch (Roundy Road) are scheduled to be completed in October or November. TCDoT and the TRRP Fish and Wildlife Restoration Program are funding partners for these projects. Prior to its suspension in December 2008, the Trinity Drinking Water Source Sediment Reduction Project (CA Water Resources Control Board) grant was used to complete projects on Browns Mountain Road, Lewiston-Turnpike Road, and Trinity Dam Boulevard and Roundy Road.



Upper Left: Installing a new culvert with armored outboard fill on Indian Creek Road (2008)
Upper Right: Installing a 42" pipe in a Class III stream crossing on Deerlick Springs Road (2009)

Upper Left & Right: Outsloped road segments with a rolling dips on Deerlick Springs Road



Several sediment reduction projects have been completed throughout the 5C Program area in recent years, including five in Trinity and two in Mendocino. Another large project is planned for construction in 2010-2011 on Fish Rock Road in Mendocino County. A stream crossing on Tomki Road was also treated in 2009 and future work is planned, funding contingent. Humboldt County has also completed projects with the Mattole Restoration Council (MRC) and has again partnered to work on Chemise Mountain Road, a county road in the Bear River watershed, a tributary to the Mattole River:

http://www.mattole.org/program_services/Roads/current-projects.htm

Recently I was on Sugar Creek Road (Siskiyou County) and noted much of the road had been reshaped and outsloped to improve drainage and reduce road related erosion. The 5C is aware of many non-5C related road drainage and sediment improvements, but most are undocumented.

CULVERT FAILURES: Every year, on average, a large diameter culvert (6' or larger) as well as many smaller diameter pipes collapse, fail, or are otherwise significantly damaged within the counties' road systems. Many culverts were installed 35 to 55 years ago after the major floods of 1955, 1964, and 1974, and may be nearing the end of their effective lives. The counties address many high priority sites before they fail, but limited resources mean some sites go untreated.



Upper Left: Reading Creek (Trinity County 2003) **Upper Right:** Rube Creek (Humboldt County 2009)
Lower Left: Shannahan Gulch (Humboldt, 2001) **Lower Right:** Griffin Creek (Del Norte, 2006)



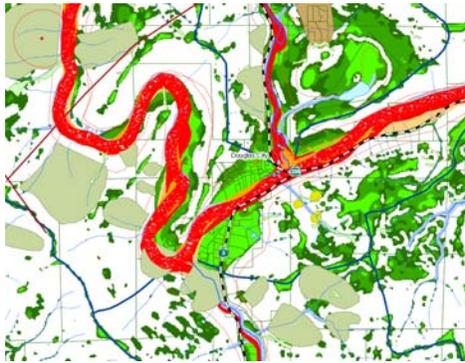
Below (Trinity County): Indian Creek Road 2008 (left) and burned HDPE culvert 2004 (right)



Above Left: Diversion of a tributary to Etna Creek (Siskiyou, 2006)

Above Right: Diversion of unnamed stream (Mendocino, 2006)

WATER & FISHERIES RELATED LAND USE PLANNING AND GIS: The 5C GIS watershed and water resource analysis for Trinity County has been demonstrated to all of the counties planning department staff. Once the analysis is complete, results will be summarized and made available to planners. This project was postponed as the main Prop 50 planning grant source was frozen for several months.



A sample of GIS layers used in water resource planning

WATER, ENERGY, FISH, AND CARBON: The 5C work is expanding to incorporate greenhouse gas (GHG) reduction goals set out in AB32. We will seek ways to offset project GHG emissions while meeting all of our other objectives. The 5C and RC&D staffs are already working to capture clean energy and reduce carbon and methane emissions. As part of that effort, we have undertaken a contract to identify and develop small-scale demonstration sustainable energy and GHG reducing projects. A number of possibilities have been identified including: methane gas capture and use in dairies in Del Norte County and small landfills; reduction of open air burning of ~300 tons of woody waste in Weaverville, Trinity County via bio-mass energy and composting; electric vehicle fueling stations in Trinity and Humboldt Counties; micro-hydro power capture at pressure reducing valves on water systems; sludge management; and other possibilities.



Above: Methane & CO₂ gas captured & burned to heat water & dry clothes on a dairy farm, Del Norte County

Below Left: Woody debris is burned annually at the Weaverville Landfill and outlying transfer stations

Below Right: Periodic burning is done at the County Road Department's sort yard in Weaverville. Utilizing a small energy grant, 5C plans to work with Trinity County & landowners to ship woody waste to a power plant. The project would deliver enough power to run 4 homes for a year; reducing CO₂ & particulates in the basin.



SCOTT AND SALMON RIVER DIRT INVENTORY: The DIRT inventories in the Scott and Salmon River watersheds were completed in March 2008. The final report is available at the 5C website: http://www.5counties.org/PDF_Files/Grant%20Reports/Final%20Report_Scott%20&%20Salmon%20Rivers%20DIRT.pdf. I want to express my thanks to Carolyn Rourke, our lead technician; her tireless efforts and commendable work ethic really are what made it work.

BRIDGE TRANSFERS: In April 2009, Del Norte County picked up the two remaining rail car bridges that the 5C Program acquired from the Trinity River Restoration Program.

COUNTIES/RC&D MOA: Del Norte, Humboldt, Mendocino and Siskiyou Counties have adopted the Five Counties and RC&D MOA. Trinity County and the RC&D continue to operate under an MOA as well as a contract for implementation of specific projects whose grants remain with the County.



The 5C Program would not be a success without the Interest, Dedication and Commitment from the member 5C Public Works, Transportation and Planning Department staff to improve water quality & salmonid habitat.

Congratulations to all of you on another season of restoration work!

COUNTY BIOENGINEERING PROJECTS:



Top Photos: Mad River Bluffs (Humboldt) stabilization before and during project (2008)
Middle Photos: Mad River Bluff stabilization and revegetation (Spring 2009)
Bottom Photos: Little Browns Creek (Trinity) first year revegetation (2008) and second year (2009)

COUNTY BIOENGINEERING PROJECTS:



Above: Robinson Creek stream bank stabilization (Mendocino). New plantings in 2006 and later in 2009.



Above: Scott River bank stabilization (Siskiyou). Pre-project in 2004 (left) and post-project after high flows in 2006 (right). **Below:** Scott River site showing willow revegetation (Summer 2006).



COUNTY BIOENGINEERING PROJECTS:



Trinity Alps Business Park (Trinity) before construction of the Weaver Basin Wetlands (2003) & after (2008)



Above: Sidney Gulch (Trinity) bank stabilization project during construction in 2006 (left) and two years later in 2008 (right). **Below:** Crews from all five counties install a brush mattress during a 2007 Roads Workshop.

