



NORTH COAST RESOURCE PARTNERSHIP

NORTH COAST IRWM IMPLEMENTATION PROJECTS BENEFITS SUMMARY

An overview of economic, social, ecological, and cultural benefits provided by North Coast Resource Partnership (NCRP) Integrated Regional Water Management (IRWM) implementation projects funded by Proposition 50 and Proposition 84.

NCRP projects include integrated local and regional solutions to water and wastewater infrastructure, stream and watershed enhancement, greenhouse gas emissions reduction, energy independence, forest health and local economic development. NCRP projects are selected via a rigorous and transparent process of scientific and technical review provided by the NCRP Technical Peer Review Committee.

PROJECT COMPOSITION

88 NCRP IRWM Implementation Projects Total

- 17 Proposition 50 Round 1 projects
- 4 Proposition 50 Round 2 projects
- 18 Proposition 84 Round 1 projects
- 13 Proposition 84 Round 2 projects
- 11 Proposition 84 Drought projects
- 25 Proposition 84 2015 projects

Watershed Management Areas (WMA)

- 6 projects in Eel WMA
- 18 projects in Klamath WMA
- 9 projects in Humboldt Bay WMA
- 24 projects in North Coast Rivers WMA
- 22 projects in Russian/ Bodega WMA
- 9 projects in Trinity WMA

Project Type

- 51 water/wastewater infrastructure projects (51/88 = 58%)
- 58 water quality improvement projects (58/88 = 66%) — these include both instream water quality improvement and drinking water quality improvement projects
- 51 water supply reliability projects (58%)
- The above numbers do not add up to 100% because over half (51%) of the projects provided both water quality and supply reliability benefits

QUANTITATIVE BENEFITS

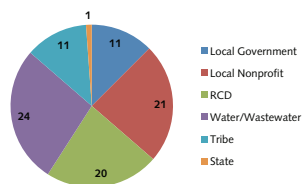
Water Supply and Water Quality

- Thirty-seven projects (42%) protect/ enhance instream flows, providing between \$86 and \$147 million dollars in benefits for environmental, agricultural, and municipal purposes
- Forty-seven (53%) projects assist with TMDL implementation by decreasing sediment, nutrient, or pathogen loads or through increases to instream flows, helping to ameliorate increased water temperatures during summer months
- Twenty-seven (31%) sediment reduction projects remove and/or stabilize over 6,405,991 cubic yards of sediment; the estimated economic benefit associated with these projects is between \$50 and \$58 million
- Miles of road decommissioned — 78.56; 103.81 miles of road upgraded
- Four projects avoid wastewater violations fines and penalties; two avoid water supply violations fines
- Forty-seven (53%) projects avoid TMDL enforcement and/or additional water quality projects

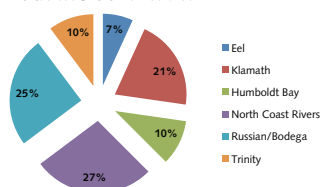
Salmonid Habitat

- Fifty-five projects (62.5%) protect or enhance North Coast coho, Chinook, and/or steelhead fisheries
- These fisheries projects provide an estimated economic benefit of between \$23 and \$114 million
- Twelve projects improve fish passage by opening at least 87 miles of instream habitat for spawning and rearing
- 30 projects have habitat restoration components; these projects collectively:
 - » Install at least 81,947 native trees, shrubs, and grasses

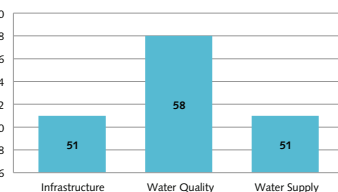
NCRP PROJECT SPONSORS



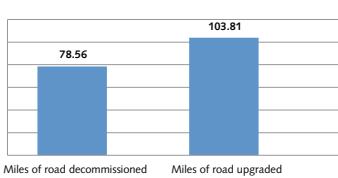
PROJECTS BY WATERSHED MANAGEMENT AREA



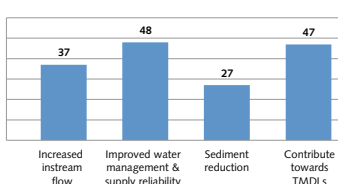
PROJECT CATEGORIES



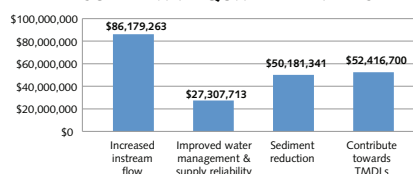
ROAD-RELATED SEDIMENT REDUCTION PROJECT BENEFITS



OF PROJECTS PROVIDING SPECIFIC WATER QUALITY AND WATER SUPPLY BENEFITS



MONETARY BENEFITS OF WATER SUPPLY AND QUALITY BENEFITS



- » Restore over 1,118 acres of riparian, wetland, or mixed hardwood/ conifer habitat
- » Restore/ enhance at least 91,256 linear feet (17.28 miles) of riparian habitat
- » The monetary benefits that this habitat restoration will yield over time are valued at between \$100 and \$200 million
- Ten projects include invasive non-native plant removal; these projects collectively remove invasive plants from at least 374 acres; the monetary benefit from these efforts is valued at between \$459,338 and \$689,008
- Thirteen projects have ongoing monitoring and data evaluation programs

Socioeconomic

- Forty projects (45%) (protect the agricultural and resource-dependent heritage of farmers, ranchers, tribes, and other residents of the North Coast
- Thirty (34%) projects provide for social health and safety by improving access for emergency vehicles, improving impacted drinking water quality in Disadvantaged communities, and protecting public health through contaminant reduction
- Thirty-six projects (41%) reduce conflicts in areas where tensions exist between competing uses of water
- Thirty-two projects (36%) provide an education/ technology component that improves the human capital and potential of the North Coast
- Eighty-eight (100%) projects used local labor and supplies when possible and contribute to state goals for environmental justice and social equity
- Approximately 613 jobs were created and maintained through implementation of these NCIRWMP implementation projects

PROJECT COST / BENEFIT SUMMARY

- **Total project cost: \$95,856,821** — spent locally using local supplies and services when possible
- **Total Proposition 50 & Proposition 84 IRWM funding: \$53,287,025** — spent locally using local supplies and services when possible

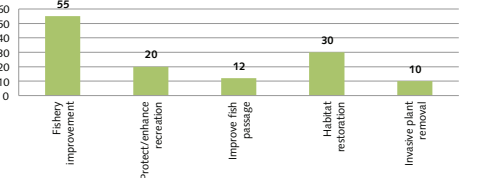
TOTAL PROJECT BENEFITS (in 2014 dollars)

- » low estimate = \$449,480,176
- » high estimate = \$1,304,714,392

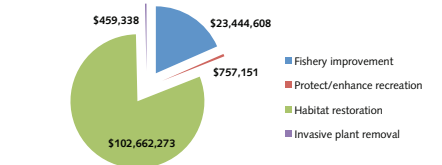
COST / BENEFIT RATIO

- » low estimate = \$1 cost to \$5 benefit
- » high estimate = \$1 cost to \$14 benefit

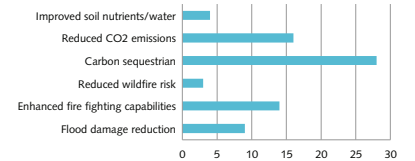
PROJECTS PROVIDING HABITAT RELATED BENEFITS



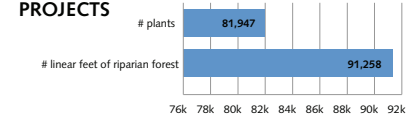
MONETARY BENEFITS OF HABITAT IMPROVEMENT



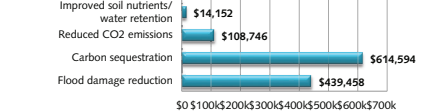
PROJECTS PROVIDING ECOSYSTEM SERVICES BENEFITS



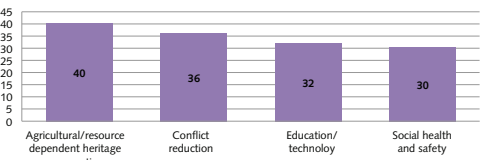
PHYSICAL BENEFITS OF HABITAT RESTORATION PROJECTS



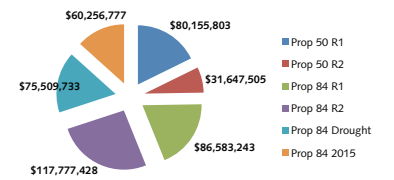
PROJECT ECOSYSTEM SERVICES MONETARY BENEFITS



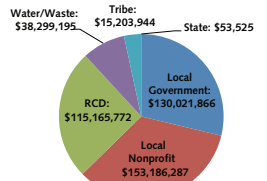
PROJECTS PROVIDING SOCIO-CULTURAL BENEFITS



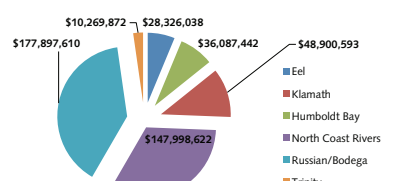
MONETARY BENEFIT BY FUNDING SOURCE



MONETARY BENEFIT BY PROJECT SPONSOR



PROJECT MONETARY BENEFITS BY WATERSHED MANAGEMENT AREA



Caveats. These benefit quantifications and economic estimates represent our best effort to present a realistic description of the benefits accruing from NCRP project implementation using the best available science and most recent economic valuations. Where monetary values are provided in charts, the lower bound of a range of possible values is used. Given that over two-thirds of the projects are currently in progress, that the project scope may change with enhanced or more limited funding, and that predictions based on both economics and future conditions in a changing climate are inherently uncertain, it is vital to understand that they are estimates rather than concrete values. Additionally, because not all projects could quantify their benefits, and because the value of many benefits, such as carbon sequestration, reduced carbon emissions, and ecosystem services provided through habitat restoration are likely to increase with expected effects of climate change, monetary benefits estimates may underestimate the true value provided by the North Coast implementation projects. For these reasons, this benefit analysis' quantifications are likely an underestimate of benefits provided by implementation of the 88 NCRP IRWM Implementation Projects.