

Annotated Bibliography for the Putah Creek library series
Nicolle Herr, Ecologist, Creek Works Intern, SCWA

PC-1 E.A. (Alex) Pesonen. January 1st, 1973. **Plan for a PUTAH CREEK STREAMWAY.** Landscape Architect, Yolo and Solano Counties. 2352 Cortez Lane, Sacramento, California 95825. A description of the history and natural resources occurring along Putah Creek, the proposal for the permanent release of canal water from the Solano Diversion Dam into Putah Creek, stakeholders, development proposals, and recommendations.

PC-2 Trinity Fisheries Consulting. February 1991. **Lower Putah Creek Fisheries and Fish Habitat Responses to Interim Flows from September through November, 1990.** 791 8th Street, P.O. Box 820, Arcata, California 95521. Prepared for Neumiller and Beardslee. Report of Trinity Fisheries Consulting survey and monitoring of the fisheries of Putah Creek downstream of the Solano Diversion Dam from August 21, 1990 to November 30, 1990 including water quality, stage and discharge, and fish habitat to determine the diversity and distribution of fish species, and recommendations for fishery maintenance.

PC-3 Nelda Matheny, with James R. Clark, and David B. Kelley. April 1991. **Putah Creek Riparian Vegetation Study.** HortScience Inc., 1257 Quarry Lane, Suite 110, Pleasanton, CA 94566; Center for Urban Horticulture, University of Washington, Seattle, WA; and Kelley and Associates, Davis, CA, respectively. Prepared for Solano County Water Agency. This vegetation study monitored water stress of riparian tree species during the late summer and fall of 1990 to estimate impacts resulting from prolonged drought and potential benefits of an additional 3000 cubic feet of water discharge from the Solano Diversion Dam during the summer and determined little water stress occurred in plants regardless of the decline in soil moisture during the sampling period.

PC-4 HortScience, Inc. August 1991. **Putah Creek Riparian Study.** 1257 Quarry Lane, Suite 110, Pleasanton, CA 94566. Prepared for Solano County Water Agency. This soil study by HortScience developed transects to observe soil moisture and plant development stress during the late summer and fall of 1990 and determined similar transects of soil moisture loss at faster rates on levee soils than at the creek's bank, with variation amongst drying rates of floodplain transects. Water stress was not detected as an impact to plant development.

PC-5 Thomas R. Payne & Associates. March 16, 1992. **Geographical Distribution of Fish Species Found in Putah Creek.** P.O. Box 4678, 850 G Street, Suite J, Arcata, California 95521. Prepared for Nuemiller & Beardslee. Documentation of native and nonnative fish species occurrence, absence, and distribution within the Putah Creek Basin and surrounding regions for use in determining fishery resources.

PC-6 B.A. Etcheverry and Thos. H. Means. May 18th, 1948. **APPRAISAL REPORT TO THE STATE RECLAMATION BOARD FOR LANDS INVOLVED IN PUTAH CREEK LEVEE PROJECT.** Stakeholder information including ownership appraisals, land classes, and project impacts to streamflow, flooding, and land adjacent to the levees.

PC-7 Jones & Stokes Associates. July 1992. **Final Hydraulic, Hydrologic, Vegetation, and Fisheries Analysis for the U.S. Fish and Wildlife Service Putah Creek Management Plan.** 2600 V Street, Suite 100, Sacramento, CA 95818. Prepared for U.S. Fish and Wildlife Service. Results of the 1990 study authorized by Congress to inventory and develop flow regimes and vegetation assemblages, and estimate dam impacts on Putah Creek to address the hydrologic conditions (e.g. flooding) and requirements for fishery and ecosystem maintenance and enhancement.

PC-9 United States Department of the Interior Fish and Wildlife Service. August, 1993. **Reconnaissance Planning Report Fish and Wildlife Resource Management Options for Lower Putah Creek, California.** Thomas E. Harvey, Marla Macoubrie, Michael Marchetti, and Joy Winkel. Ecological Services Field Office, 2800 Cottage Way, Room E-1809, Sacramento, California 95825. Prepared for United States Congress. Lower Putah Creek cooperative habitat management master planning report for sustaining ecosystem diversity and public use containing historical analysis, resource use issues, implementation planning, and alternative management actions.

PC-10 Design Science. 2000. **Exploring Putah Creek from Monticello Dam to the Yolo Wildlife Area.** Ann Brice (writer), Michele Johnson (illustrator), and Sharon Erspamer (graphic design), Prepared for Putah Creek Council. Public outreach booklet briefly describing the history, wildlife, and recreational opportunities along Putah Creek.

PC-11 Edward Anthony Keller. 1965. **Form and Fluvial Processes of Dry Creek, Near Winters, California.** Thesis for Master of Science in Geology. Graduate Division of the University of California, Davis. Geological analysis of fluvial processes and channel form of Lower Dry Creek near Winters, CA. including gravel and sediment movement by the stream, and pool-riffle spacing.

PC-12. Trihey & Associates, Inc. January 29th, 1996. **Native Species Recovery Plan for Lower Putah Creek, California** 4180 Treat Boulevard, Concord, CA 94518. Prepared for The Law Offices of Martha H. Lennihan. The *Native Fish Recovery Plan* is intended to restore native species populations diminished by the Solano Project by setting minimum release flows according to life stage, increasing release flows during spawning, flushing out nonnative species before native spawning with high flush flow releases, and maintaining a consistent flow regime.

PC-13 Environmental Science Associates. March 6, 1996. **University of California, Davis Contained Research Facility Tiered Initial Study.** 301 Brannan Street, Suite 200, San Francisco, California 94107. This Tiered Initial Study for The Contained Research Facility (CRF) project for biotechnology includes project background information, a project description, consistency with the *University of California, Davis 1994 Long Range Development Plan (LRDP) Environmental Impact Report*, a Tiered Environmental Checklist form to identify potential project effects, potential effects on environmental factors, mitigation measures, and determination of significant impacts.

PC-14 Jones & Stokes Associates, Inc. 1996 **Measured and Simulated Temperatures in Putah Creek, Yolo and Solano Counties, California.** Final. June. (JS 93-101.) Sacramento, CA. Prepared for University of California, Davis, CA. This report documents the 3 year study of temperature monitoring in Lower Putah Creek to develop a computer model that simulates existing and managed temperature regimes and conclusions of the analysis.

PC-15 University of California, Davis. June 1996. **Revised Initial Study Wastewater Treatment Plant Replacement Project.** State Clearinghouse Number 95123027. Planning and Budget Office, 376 Mrak Hall, Davis, CA 95616. Analysis of the proposed project to replace the wastewater treatment plant on UC Davis South Campus including the Project background and description, consistency with the *1994 LRDP EIR*, environmental checklist, and mitigation measures. Potential impacts were determined to be less than significant for social concerns (e.g. housing and recreation) and intent to prepare an Environmental Impact Report to address potential adverse environmental impacts (e.g. water and air quality, biological resources) was discussed.

PC-16 University of California, Davis. 1996. **DRAFT ENVIRONMENTAL IMPACT REPORT: WASTEWATER TREATMENT PLANT REPLACEMENT PROJECT.** October. (JSA 95-273.) Planning and Budget Office. Davis, CA 95616. Environmental consultant: Jones & Stokes Associates, Inc., Sacramento, CA. The Environmental Impact Report for the proposed wastewater treatment plant replacement project at UC Davis to satisfy CEQA requirements, inform the public and stakeholders about the project, and provide evidence for consideration of project approval by The Regents of the University of California.

PC-17 University of California, Davis. April 23, 1997. **Draft Tiered Initial Study: LABORATORY FOR ENERGY-RELATED HEALTH RESEARCH AND SOUTH CAMPUS DISPOSAL SITE (LEHR/SCDS) INTERIM REMEDIAL ACTIONS PROJECT.** Lead Agency: The Regents of the University of California. Planning and Budget Office, 376 Mrak Hall, Davis, California 95616. Relying on the *1994 LRDP EIR*, this environmental analysis of the proposed University of California at Davis Laboratory for Energy-Related Health Research and South Campus Disposal Site Interim Remedial Actions project includes project background and description, tiered environmental checklist, potential effects to environmental factors, mitigation measures and determination of impact significance.

PC-18 HortScience, Inc. June 1997. **Putah Creek Riparian Vegetation Summary.** 1257 Quarry Lane, Suite 110, Pleasanton, CA 94566. Prepared for Solano County Water Agency. Summary of soil moisture and riparian vegetative monitoring between 1990 and 1995 including a historical timeline of modern human activity on Putah Creek, vegetation distribution, water stress, plant development, and conclusions drawn from the studies.

PC-19 University of California, Davis. **INITIAL STUDY UC DAVIS 1997-98 CAPITAL IMPROVEMENT PROJECTS.** Planning and Budget Office, One Shields Avenue, Davis, CA 95616. This analysis of the proposed *UC Davis 1997-98 Major Capital Improvement Projects* to replace the Plant and Environmental Sciences Facility, construct new greenhouses, Bowley center, and La Rue Student Housing, and to expand the I-80 Enterprise Reserve on UC Davis Campus supplements and amends the *1994 LRDP EIR* and includes a project background and description, environmental checklist, potential significant impacts and mitigation measures.

PC-20 University of California. October 1997. **Draft UC DAVIS WATER MANAGEMENT PLAN.** UC Davis Water Management Plan Task Force. Plan outlining development of a sustainable water budget for water conservation, disposal and treatment considering water demand projections for teaching, research, extension, public service, and land management on UC Davis campus in accordance with the *1994 UC Davis LRDP*. Water quality, water supply, utility water supply, water treatment, and discharge were considered.

PC-21 University of California, Davis. March 16, 1998. **UC DAVIS 1997-98 MAJOR CAPITAL IMPROVEMENT PROJECTS Draft Supplemental Environmental Impact Report.** State Clearinghouse No. 97122016. Planning and Budget Office, 376 Mrak Hall, One Shields Avenue, Davis, CA 95616. Supplemental Environmental Impact Report for the *1997-98 Major Capital Improvement Projects* on UC Davis campus to satisfy CEQA requirements, inform the public and stakeholders about the project, and provide evidence for consideration of project approval by The Regents of the University of California.

PC-23 California Environmental Protection Agency Regional Water Quality Control Board Central Valley Region. November 2000. **Cache Creek and Putah Creek Watersheds Toxicity Monitoring Results: 1998-1999 Final Report.** Karen Larsen (Environmental Specialist), Michelle McGraw (Environmental Specialist), and Valerie Connor (Senior Environmental Specialist), with Linda Deanovic, Tom Kimball, and Dr. David E. Hinton. Sacramento River Watershed Unit; University of California, Davis, respectively. Study characterizing toxicity to aquatic life in the Putah Creek and Cache Creek watersheds by monitoring for toxicity and chemical constituents, assessing Implementation Plans to achieve water quality objectives, and promoting comprehensive cooperative watershed management.

PC-24 Michael A. Melanson, M.S. November 2001. **WILDLIFE HABITAT MONITORING PROGRAM LOWER PUTAH CREEK, CALIFORNIA.** Strategic Environmental. 9040 Hazel Oak Court, Orangevale, California 95662. Prepared for Solano County Water Agency. Intensive habitat field studies collected over six years for baseline wildlife data to be used to verify and develop ecosystem enhancement and protection policies in the Putah Creek Riparian Corridor from the Diversion Dam to the Yolo bypass.

PC-25 EDAW, Inc. January 17, 2003. **Biological Resources Assessments Pickerel, Kilkenny, McNamara & Yolo Housing Authority Properties.** 2202 J Street, Sacramento, California 95814. Prepared for Rich Marovich, Streamkeeper, Lower Putah Creek Coordinating Committee. Biological resource assessments and descriptions for the riparian habitat portions of Pickerel, Kilkenny, McNamara, and Yolo Housing Authority properties adjacent to Putah Creek including types of habitat, wildlife, and plant species occurring, land suitability for special-status species, and recommendations to reduce adverse impacts resulting from proposed projects.

PC-26 StreamWise Stream Assessment and Restoration. February 26, 2003. **Pickerel Habitat Enhancement Proposal Putah Creek.** 101 E. Alma St. Suite 100, Mt. Shasta, CA 96067. Prepared for Lower Putah Creek Coordinating Committee. Enhancement of fishery habitat features along the portion of Putah Creek within the Pickerel property to mitigate impacts resulting from geomorphic alteration accompanying the Diversion Dam installation, to improve salmonid spawning by placing spawning gravels, increase habitat diversity, revegetating the site, and provide landowner access by constructing two rock weirs.

PC-28 Margret Kralovec, PCDC Planning Project Coordinator. March 2004. **THE PUTAH CREEK DISCOVERY CORRIDOR PLANNING REPORT.** This report documents the *PCDC Planning Project, Cooperative Strategic Plan, and Public Outreach Master Plan* for the inter-dam reach between Monticello Dam and the Putah Diversion Dam known as the Putah Creek Discovery Corridor to promote public use and outreach, and create a sustainable cooperative to meet public outreach goals.

PC-29 Deborah North. June 30, 2004. **Lower Putah Creek Land Conservation Tools and Strategies, A report to the Lower Putah Creek Coordinating Committee.** PO Box 496, Davis, CA 95617. Land conservation opportunities along Putah Creek, Partnerships, Land Conservation Tools, Real Estate, Stewardship, Easement legalities, and Recommendations to develop strategies that protect and enhance the Putah Creek riparian corridor and tributaries and maintain land resources potentially over generations.

PC-30 Thomas R. Payne & Associates. July 5, 2004. **PHABSIM Evaluation of Steelhead Spawning and Juvenile Rearing Habitat in Lower Putah Creek.** Tom Gast, Tim Salamunovich, Don Bremm, and Tom Payne. P.O. Box 4678, 890 L Street, Arcata, California 95521. Prepared for Solano County Water Agency.

Habitat Index Simulation of fish life history patterns, water quality, and limiting factors to populations quantified as square feet of suitable habitat per 1000 feet of stream that show increases in spawning habitat during water discharges up to 30 cfs, declining habitat during higher flows, and increasing habitat in larger available areas. Using habitat duration analysis, spawning habitat is projected to be successful most of the year excluding times of high flow release during the fall and winter.

PC-31 Ken W. Davis. July 1, 2004. **Putah Creek New Zealand Mud Snail Monitoring Project.** Wildlife Survey & Photo Service, 2443 Fair Oaks Blvd. #209, Sacramento, CA 95825. Prepared for Solano County Water Agency. New Zealand Mud Snail distribution and population density on Putah Creek, movement concerns, recommended actions for controlling current populations and preventing new populations, and photographic documentation of mollusk and invertebrate collection.

PC-32 James P. Saake. September 8, 2004. **A SUMMARY APPRAISAL REPORT CONVERING THE RAMOS PROPERTY: LOCATED IN THE VICINITY OF WINTERS, ON PUTAH CREEK, SOLANO COUNTY, CALIFORNIA.** Certified General Real Estate Appraiser, Saake's Real Property Services, 376 East 1st Avenue, Chico, CA 95926. Prepared for Solano County Water Agency. This appraisal provides survey and inspection information to be used to estimate the Ramos property market value and a range of values for lands within the vicinity of Putah Creek.

PC-33 Thomas R. Payne & Associates. November 9th, 2004. **PHABSIM Evaluation of Steelhead Spawning and Juvenile Rearing Habitat in Lower Putah Creek.** Tom Gast, Tim Salamunovich, Don Bremm, and Tom Payne. P.O. Box 4678, 890 L Street, Arcata, California 95521. Prepared for Solano County Water Agency. Instream flow study provided to quantify steel head spawning and rearing habitat suitability in Putah Creek by generating a weighted usable area or relative suitability index as square feet of suitable habitat per 1000 feet of stream for use as criteria to determine fish life history patterns, water quality, and limiting factors to steelhead populations.

PC-34 Phillip Williams & Associates, Ltd. March 4, 2005. **PUTH CREEK FLOW RESTORATION: FINAL EXISTING CONDITIONS REPORT (TASK 2).** With EDaw, Inc., KASL Engineers, Mead & Hunt, Inc., RBI, Inc., and StreamWise. Prepared for Solano County Water Agency. Site infrastructure assessment compiling hydraulic, hydrologic, geomorphic, biological, fishery and cultural resource data of the *Putah Creek Flow Restoration Project* site 1500 feet downstream of the Putah Diversion Dam, potential regulatory and permitting issues, opportunities and constraints, and alternative planning.

PC-35 Roland A. Sanford, Consulting Hydrologist. March 29, 2005. **Conceptual Framework of the Lower Putah Creek Riparian Water Availability Forecasting Model.** 529 Chipmunk Court, Santa Rosa, California 95401. Prepared for Solano County Water Agency. Putah Creek Riparian Water Availability Forecasting Model predicts riparian water availability from April through October of each year based on stream flow gains and losses, and is provided to help agricultural and other water users prepare for meeting their water supply needs.

PC-37 EcoAnalysts, Inc. February 6th, 2006. **Results of the New Zealand Mudsail Diverter Assessment Study.** David C. Richards Ph.D., Senior Research Ecologist and Tristan D. Arrington, Scientific Intern. Center for Aquatic Studies, 11 E. Main St., Suite M, Bozeman, MT 59715. Prepared for Solano County Water Agency. Results of literature review determining impacts of New Zealand mudsnail populations on water users found closure of public access locations didn't prevent spread of NZMS to other fisheries, fish hatcheries have become increasingly infected, and no impacts have been reported to hydroelectric

facilities, irrigation diverters, or municipal water supplies suggesting impacts on water use may be minimal.

PC-38 University of California, Davis. August 2005. **Putah Creek Riparian Reserve Management Plan.** Office of Resource Management and Planning, 376 Mrak Hall, One Shields Avenue, Davis, CA 95616. Annually reviewed guiding document incorporating elements and principles from the *1986 Management Plan Proposal* and more recent property acquisitions, land use, reserve, and research area changes, human use impacts and other applicable factors to set goals, objectives, implementation strategies, and identify planning issues managing the Putah Creek Riparian Reserve.

PC-40 Putah Creek Council. 2008. **Putah Creek: Flowing through Our Communities and Our Lives.** Amy J. Boyer, Dawn Calciano, Megan Harns, Molly Farrell, Melanie Allen Truan, Petra Unger, and Ron Unger. P.O. Box 743, Davis, CA 95617. Public outreach guide to Putah Creek explaining its geological and anthropogenic history, esthetic and ecological value, and importance to stakeholders and the community.

PC-48 EDAW. January, 2008. **Lower Putah Creek Watershed Management Action Plan Proposed Projects.** 2202 J Street, Sacramento, CA 95811. Prepared for Lower Putah Creek Coordinating Committee. Action plan and companion document to the *Lower Putah Creek WMAP – Resource Assessments* providing resource information (e.g. channel condition, invasive vegetation) and stakeholder input for guidance implementing, monitoring, and adapting enhancement projects in the Lower Putah Creek watershed.

PC-49 Wallace-Kuhl & Associates, Inc. April 3, 2008. **INITIAL STUDY and MITIGATED NEGATIVE DECLARATION for Winters Putah Creek Nature Park / Floodplain Restoration and Recreational Access Project.** 3251 Beacon Boulevard, Suite 300, West Sacramento, CA 95691. Prepared for the City of Winters. Environmental analysis of the two phases described in the *Winters Putah Creek Nature Park Master Plan* in compliance with CEQA, including a project description, environmental checklist, potential significant impacts, and mitigation measures for adverse effects.

PC-53 John F. Mann, Jr. June 30, 1997. **Hydrogeologic Investigations of the Putah Creek Fan.** Consulting Geologist and Hydrologist, 945 Reposado Drive, La Habra, California 90631. Report updating older investigations that concludes the entire Putah Plain (both fan sediments and the Tehama formation) is a common water body to a depth of nearly 500 feet, therefore water users are pumping from a common source and water recharge can't be considered separate in smaller areas within the Plain.

PC-57 Ken W. Davis. August 20, 2009. **Dry Creek Project: A Study of Aquatic Invertebrates in Putah Creek's Intermittent Tributaries Final Report.** Intermittent creek invertebrate study cataloguing species occurrence and recruitment for determination of recommendations to enhance intermittent waterways and improve benthic habitat (e.g. weir development, reduced sediments) to protect and encourage species populations and to educate agencies and the public about intermittent tributaries.

PC-58 Wallace-Kuhl & Associates, Inc. June 2009. **Putah Creek Floodplain Restoration and Percolation Dam Removal: Winters Putah Creek Park – Phase 1.** 3251 Beacon Boulevard, Suite 300, West Sacramento, CA 95691. Prepared for the Solano County Water Agency, Lower Putah Creek Coordinating Committee, and City of Winters. Notice and instructions to bidders, proposal, contract, bonds, conditions, and actions for Phase-1 of the *Winters Putah Creek Park Project*. The Project will remove the

Putah Creek Percolation Dam using best management practices to prevent and mitigate adverse impacts, protect native plant populations at the site, rehabilitate roads, establish staging areas, and potentially form a low terrace embankment for access.

PC-59 Roland A. Sanford. December 16, 2009. **2009 Update: Lower Putah Creek Riparian Water Availability Forecasting Model.** Consulting Hydrologist, 529 Chipmunk Court, Santa Rosa, California 95401. Prepared for Solano County Water Agency. Report correcting the stream flow gain/loss equations, updating the forecasting model with new data, and comparing the model with monitoring results.

PC-60. University of California, Davis. December 15, 1995. **TIERED INITIAL STUDY: WASTEWATER TREATMENT PLANT REPLACEMENT PROJECT.** Planning and Budget Office, 376 Mrak Hall, Davis, CA 95616. Consulting agency: Jones & Stokes Associates, Inc. Environmental analysis for the proposed *Wastewater Treatment Plant Replacement Project* tiered under and consistent with the *1994 LRDP EIR*, including a background and project description, tiered environmental checklist, significant impacts, and mitigation measures.

PC-61 Luhdorff and Scalmanini, Consulting Engineers. March 1, 2010. **FINAL TECHNICAL MEMORANDUM: LOWER PUTAH CREEK REGIONAL GROUNDWATER INFLUENCE STUDY LITERATURE REVIEW AND SUMMARY.** Prepared for Solano County Water Agency. Review of over 50 documents regarding streamflow, seepage gains and losses, and stream-aquifer interactions in Putah Creek to evaluate the ability to predict streamflow's in Lower Putah Creek from groundwater levels. The study found *The Riparian Water Availability Forecasting Model* could estimate streamflow instead of water availability by using water release data, which would allow comparisons of simulated and observed flows.

PC-63 Dames & Moore. February 1990. **FINAL REPORT: EVALUATION OF ON-SITE WELLS, UCD LEHR FACILITY, DAVIS, CALIFORNIA.** 9300 Tech Center Dr., Suite 100, Sacramento, California 95826. Investigation to evaluate on-site wells, monitor for water quality, radiological constituents, turbidity, flocculation, and make management recommendations in accordance with agency guidelines.

PC-64 Dames & Moore. November 1990. **EVALUATION OF POTENTIAL NITRATE AND HEXAVALENT CHROMIUM SOURCES IN THE VICINITY OF THE UCD LEHR FACILITY FOR UNIVERSITY OF CALIFORNIA, DAVIS.** Joe Niland, Project Manager and Andy Kopania, R.G., Project Hydrologist. 9300 Tech Center Drive, Suite 100, Sacramento, California 95826. Results of the investigation to compare the potential source(s) of elevated nitrate and chromium levels found in the water of private wells near the Laboratory for Energy-Related Health Research, the closed campus sanitary landfill, and the closed UC Davis and U.S. Department of Energy radioactive waste disposal sites. Wastewater treatment and agriculture are other potential nitrate sources. Migration of Coastal Range soil materials, wastewater, metals used in irrigation, preservatives and fungicides are other potential hexavalent chromium sources. Nitrate was likely to come from numerous point and nonpoint sources regionally, and the source(s) of hexavalent chromium could not be determined with the available information.

PC-65 Dames & Moore. November 1990. **FINAL DRAFT WORKPLAN: OLD UCD LANDFILL ADDITIONAL CHARACTERIZATION, UNIVERSITY OF CALIFORNIA, DAVIS.** Jim Brake, Project Geologist. 9300 Tech Center Drive, Suite 100, Sacramento, California 95826. Plan for the additional characterization of the groundwater downgradient and beneath the Old University of California, Davis Landfill requested by the

California Regional Water Quality Control Board for evaluation of the groundwater impact results of the Solid Waste Assessment Test to contribute to developing mitigation and remediation alternatives for the site if needed.

PC-66 Dames & Moore. December 1990. **REPORT: PUTAH CREEK SEDIMENT AND WATER SAMPLING FOR UNIVERSITY OF CALIFORNIA, DAVIS ENVIRONMENTAL HEALTH AND SAFETY.** Jim Brake, Project Manager and Rick Moren, R.G., Geologist. 9300 Tech Center Drive, Suite 100, Sacramento, California 95826. As requested by UC Davis Environmental Health and Safety, this report of Putah Creek sediment and water sample analysis during August, 1990 intended to provide baseline data for low flow periods and found sediment samples were within safe Total Threshold Limit Concentrations for metals, chlorinated pesticides, PCBs, and radiologic analyses.

PC-67 Dames & Moore. July 1991. **SUMMARY REPORT: WASTE BURIAL TRENCH INVESTIGATION LEHR FACILITY, UNIVERSITY OF CALIFORNIA, DAVIS.** Joseph J. Niland, Senior Geologist and Jim Brake, Project Geologist. 8801 Folsom Blvd., Suite 200, Sacramento, CA 95826. Soil sample analysis from exploratory trenches excavated at the Laboratory for Energy-Related Health Research waste burial trenches to characterize chemical and radiological constituents found debris (e.g. bones and broken glass), waste burial trench location inconsistencies, detectable levels of tritium, Strontium-90, and Cesium-137, and metals that were within safe Total Threshold Limit Concentrations. Recommendations for further characterization by exploratory trenching and Ground Penetrating Radar surveys to specify chemical and radiological constituents more accurately for remedial planning were outlined.

PC-68 Dames & Moore. May 11, 1995. **APPENDIX C BORING AND CPT WELL LOGS PHASE II SITE CHARACTERIZATION LEHR ENVIRONMENTAL RESTORATION.** Logs for soil borings and monitoring wells, Cone Penetrometer logs, and well driller logs located at or near the Laboratory for Energy-Related Health Research facility at UC Davis.

PC-69 Hydmet, Inc. July 25, 1997. **HSPF MODEL FOR PLEASANTS CREEK NEAR WINTERS (Preliminary Draft).** 9434 Deschutes Road, Suite 204, Palo Cedro, CA 96073. Prepared for Solano County Water Agency. Observed and simulated flows for the USGS gage on Peasants Creek from 1963-1968 were compared, analyzed for accuracy, and model calibration was suggested for improving the Hydrologic Simulated Program (HSPF) model.

PC-70 WAHLER ASSOCIATES. December 1988. **Groundwater and Soils Investigation U.C. Davis Research Facility, Davis, California.** Geotechnical Engineers, Geologists, and Hydrogeologists. 1023 Corporation Way, Palo Alto, California 94303. Prepared for University of California, Davis. Groundwater and soils investigation of the U.C. Davis Research Facility to assess potential chemical and radionuclide contamination as a basis for future site monitoring. Results found high concentrations of chloroform and methylene chloride in a well, debris in trenches, detectable radiation at one waste burial trench but no detectable groundwater contamination, and levels of chromium, lead, and nitrate above their safe maximum contaminant levels for drinking water. Recommendations include quarterly sampling to detect groundwater quality changes, and determination of the full extent of contamination in the soil and groundwater.

PC-71 WAHLER ASSOCIATES. May 1989. **VOLUME 1: Groundwater and Soils Investigation U.C. Davis LEHR Facility, Davis, California.** Geotechnical Engineers, Geologists, and Hydrogeologists. 1023 Corporation Way, Palo Alto, California 94303. Prepared for University of California, Davis. Final report

utilizing a multi-phase approach to produce efficient and cost-effective monitoring and exploration procedures for assessing the potential chemical and radionuclide contamination at the site providing baseline data for future site monitoring. The results found chromium, lead, and nitrate in higher concentrations than the safe maximum contaminant levels for drinking water, detected tritium, cesium, and Strontium-90, and found previously undetected Radium-226. Recommendations include quarterly sampling to detect groundwater quality changes, and investigations to determine the extent of soil and groundwater contamination.

PC-72 Michael P. Marchetti. February 22, 1999. **An experimental study of competition between the native Sacramento perch (*Archoplites interruptus*) and introduced bluegill (*Lepomis macrochirus*).** Department of Wildlife, Fish, and Conservation Biology, University of California, Davis, CA. 95616. Experiments to assess growth, aggressive behavior, and habitat use of Sacramento perch when bluegill are present indicate habitat shifts, lower weight and less growth where bluegill occur, implying interspecific competition during species interactions. Bluegill were found to be aggressive and dominant toward smaller perch.

PC-73 University of California, Davis. April 23, 1997. **Draft Tiered Initial Study: LABORATORY FOR ENERGY-RELATED HEALTH RESEARCH AND SOUTH CAMPUS DISPOSAL SITE (LEHR/SCDS) INTERIM REMEDIAL ACTIONS PROJECT.** Planning and Budget Office, 376 Mrak Hall, Davis, California 95616. Environmental Consultant: Dames & Moore. Environmental impact study for the proposed *LEHR Project* tiered under and consistent with the *1994 LRDP EIR*, in accordance with CEQA guidelines and the University of California implementation procedures, including a background and project description, growth issues, tiered environmental checklist, long-term cumulative impacts, mitigation measures, and determination of significant impacts.

PC-74 U.S. Department of Agriculture. July 1976. **FLOOD HAZARD ANALYSES: CITY OF WINTERS, Including portions of Putah Creek, Dry Creek and Moody (Dry) Slough, Yolo County, California.** Soil Conservation Service, Davis, California. In cooperation with the City of Winters, Western Yolo Resource Conservation District, and the California Department of Water Resources. Report of flood hazard analysis by the Soil Conservation Service and the Plan for the *City of Winters Flood Hazard Analysis of Floodplain Study* including flood history in the watersheds, floodplain management strategies, survey information, and land use data.

PC-75 United States Department of the Interior. **PUTAH CREEK SURVEYS Volume 5: Field Survey Notes and Plats for Township Ten North, Ranges Four and Five West, Mount Diablo Meridian.** A collection of environmental surveys.

PC-76 Michael P. Marchetti and Peter B. Moyle. **Running head: Fish assembly in a regulated stream. KEEPING ALIEN FISHES AT BAY: EFFECTS OF FLOW REGIME AND HABITAT STRUCTURE ON FISH ASSEMBLAGES IN A REGULATED CALIFORNIA STREAM.** Department of Wildlife, Fish, and Conservation Biology. University of California, Davis, CA 95616. Sampling results of native and non-native fish species from 1994-1998 using Two Way Indicator Species Analysis and Canonical Correspondence Analysis. Differences between assemblage habitat uses was extrapolated from the data, resulting in the conclusion restoration of natural flow regimes is needed to conserve native fish populations.

PC-77 Michael P. Marchetti and Peter B. Moyle. January 28, 1999. **Spatial and temporal ecology of native and introduced fish larvae in lower Putah Creek, California.** Department of Wildlife, Fish, and

Conservation Biology. University of California, Davis, CA 95616. Two year study (1998-99) of native and nonnative fish larvae distribution and abundance found higher native larvae abundance upstream and early in the season, and found more fish larvae when it was dark. Results suggest assemblage differences may be due to habitat differences resulting from the Monticello dam upstream where gravel riffles, shade, and faster flowing water are found. The lower creek had slow flowing water which may be preferred by nonnative species larvae.

PC-78 David A. Mullen, Ph.D. July 1998. **WILDLIFE HABITAT MONITORING PROGRAM LOWER PUTAH CREEK, CALIFORNIA.** Environmental Consultant. P.O. Box 9087, Berkeley, California 94709. Prepared for the Solano County Water Agency. Population indices and analysis of monitoring results from intensive field studies determined moderate to low wildlife habitat values for the lower Putah Creek Riparian Corridor. Low habitat values were attributed to low diversity of native reptiles and amphibians. Typical riparian vertebrate fauna (e.g. small mammals and rodents) assemblages were found, bird species diversity was moderate using the Shannon-Weaver Diversity Index, and riparian habitats were determined less severely impacted by human use encroachment than in other central California riparian habitats. Potential causes for negative impacts on species diversity are hypothesized.

PC-79 Michael P. Marchetti. 1999. **Ecological Effects of Non-native Fish Species in Low Elevation Streams of the Central Valley, California.** Dissertation, Doctor of Philosophy in Ecology. University of California, Davis, CA. 95616. Three studies examining non-native fish species effects on Central Valley California Streams, especially Putah Creek, including competition between Sacramento perch and bluegill, an investigation of larval ecology, and an examination of community level patterns of fish distribution. Results indicate bluegill competition causes lower growth rates and weight gain among perch, larval fish are found in greater numbers at night and differences in habitat impact larval presence, and finally native and non-native species assemblages varied with changes in environmental variables and habitat use, respectively.

PC-80 Anne Elena Benjamin. 1988. **Impact of Deep Aquifer Pumping on the Stream and Multi-Aquifer Systems Along Putah Creek Near Davis, California.** Thesis, Master of Science in Hydrologic Studies. University of California, Davis. Monitoring investigation of the interactions between Putah Creek and adjacent groundwater and for hydrologic system characterization and modeling by data collection from irrigation and observation wells, stream piezometers, stream seepage meters and a pumping well. Pumping well results indicate deep gravel aquifers are not impacted by vertical leakage suggesting the deep and shallow aquifers of the system are not vertically connected, chemical and hydraulic head analysis suggest there may be vertical leakage through irrigation wells implying the deep and shallow aquifers of the system may be vertically connected, and results conclusively show there is connectivity between Putah Creek and the shallow aquifer.

PC-81 United States Department of the Interior Fish and Wildlife Service. August 1993. **Reconnaissance Planning Report Fish and Wildlife Resource Management Options for Lower Putah Creek, California.** Ecological Services Field Office, 2800 Cottage Way, Room E-1803, Sacramento, California 95825. Prepared for United States Congress. Due to legal disputes Congress funded the U.S. Fish and Wildlife Services to prepare this report to identify fish and wildlife resource issues (e.g. water allocation and flood protection), provide cost and benefit analysis, provide proposed funding sources and stakeholder cooperation efforts, and describe possible short and long term management and enhancement measures for future projects.

PC-83 Peter B. Moyle and Michael P. Marchetti. 1999. **Applications of Indices of Biotic Integrity to California Streams and Watersheds.** T.P. Simon, ed., 1999. Assessing the Sustainability and Biological Integrity of Water Resources Using Fish Communities. CRC Press, Boca Raton, FL. Indices of Biotic Integrity (IBIs) measured as fish abundance and diversity assume integrated community responses amongst fish adequately reflect environmental conditions for determining biotic integrity. This paper addresses the problems developing IBIs and applying them in California watersheds, and offers solutions to these problems to achieve broader applicability across different conditions.

PC-84 Michael P. Marchetti and Peter B. Moyle. 2001. **EFFECTS OF FLOW REGIME ON FISH ASSEMBLAGES IN A REGULATED CALIFORNIA STREAM.** Department of Wildlife, Fish, and Conservation Biology, University of California, Davis, California 95616. Results of fish sampling from 1994-1998 show distinct native and nonnative fish assemblages in different reaches dependent on flow regime and on habitat characteristics and use. Native fish counts were higher in cooler water with less pools, higher streamflow, and more shade demonstrating the need for natural flow regime restoration and adaptive management strategies to conserve native populations.

PC-85 P.B. Moyle. 2013. **NOVEL AQUATIC ECOSYSTEMS: THE NEW REALITY FOR STREAMS IN CALIFORNIA AND OTHER MEDITERRANEAN CLIMATE REGIONS.** Center for Watershed Sciences and Department of Wildlife, Fish, and Conservation Biology, University of California, Davis, CA. Description and analysis of novel ecosystems and the role of reconciliation ecology in temporary streams and heavily altered California aquatic ecosystems for use developing practical management approaches. Managing a novel ecosystem requires realistic policy, basic understanding of the system, recognition of stakeholder needs, willingness to take risks, and holistic management techniques.

PC-86 Joseph D. Kiernan^{1,2}, Peter B. Moyle², and Patrick K. Crain^{2,3}. 2012. **Restoring native fish assemblages to a regulated California stream using the natural flow regime concept.** ¹Fisheries Ecology Division, Southwest Fisheries Science Center, NOAA National Marine Fisheries Service, 110 Shaffer Road, Santa Cruz, California 95060. ²Center for Watershed Sciences, University of California, One Shields Avenue, Davis, California 95616. ³ICF International, 630 K Street, Suite 400, Sacramento, California 95814. Examination of fish response to the establishment of the lower Putah Creek targeted flow regime to determine if native fishes reestablish and regain dominance over nonnative species in mimicked natural stream flow patterns. Results indicate increased spawning and rearing conditions, cooler temperatures, and higher stream flows do provide conditions that support reestablishment of native fish assemblages and reduce the abundance of nonnative fishes.

PC-87 Michael P. Marchetti and Peter B. Moyle. Nov-Dec 1995. **Conflicting values complicate stream protection.** California Agriculture, Volume 49, number 6, pages 73-78. Article describing water usage and needs in California, and how to develop long-term policies that balance the conflicting values of water users, anecdotally referring to The Putah Creek litigation process to present the need for collaboration.

PC-88 Peter B. Moyle, Michael P. Marchetti, Jean Baldrige, and Thomas L. Taylor. July 1998. **Fish Health and Diversity: Justifying Flows for a California Stream.** Fisheries Management, Vol. 25, No. 7. Explanations for, and presentation of, stream flow recommendations for fisheries management in Putah Creek, results of the Putah Creek Councils court trial to establish year round flows, and impacts these flows are having on the ecosystem.

PC-89 Lower Putah Creek Coordinating Committee. 2006. **LPCCC Report to Community**. Report of landowner and community member involvement in setting Lower Putah Creek restoration and stewardship priorities, project selection criteria, and feasibility of management strategies to foster long-term health of the creek.

The annotated bibliography for **PC-90** to **PC-141** were compiled and prepared by Melanie Truan, PhD, Ecologist, UC Davis Museum of Wildlife & Fish Biology.

ANNOTATED BIBLIOGRAPHY FOR PUTAH CREEK AND ENVIRONS

Compiled by Melanie Truan PhD, Ecologist, UC Davis Museum of Wildlife & Fish Biology. We have found these references to be useful in providing context and greater understanding of Putah Creek's historical, physical, and/or biological patterns, processes and dynamics. They include works produced by the Museum of Wildlife & Fish Biology and others, as part of their research and monitoring activities, as well as general reports, conference proceedings and books found useful in fostering a better understanding of regional and local history, natural history, and ecosystem structure, function, and dynamics.

REFERENCES SPECIFIC TO PUTAH CREEK

PC-90 Shaw, W. B. and J. O. McClurg (1962). Reconnaissance Report on Upper Putah Creek Basin Investigation. Resources Agency of California, Dept of Water Resources.

This bulletin contains basic data and information which identifies the water problems of the area, and included reconnaissance appraisals of various possibilities for development of additional surface and ground water supplies within the area. It recommended that local interests continue to proceed with development of their water resources as fast as economically possible, so that the possibility for the loss of right to appropriate water, which would be induced by the culmination of the Monticello Project, would be kept to a minimum.

PC-91 Sutter, G. E. and K. J. Dawson (1985). A Management Plan Proposal for the Putah Creek Riparian Reserve at the University of California, Davis [DRAFT]. Dept. of Environmental Design, University of California, Davis: 173.

This report was prepared by Kerry Dawson, Associate Professor with the UC Davis Department of Environmental Design Department, with assistance from graduate student Greg Sutter, to analyze the potential of the new UC Davis Putah Creek Riparian Reserve (designated in 1983) and to develop a master plan to serve as a guide for the future management of the reserve. This report contains several sections: Historical and Environmental Setting, Goals and Objectives, Planning Issues, Policies and an alternative management program for the reserve, and a short summary of high priority policies.

PC-9 USFWS, et al. (1993). Reconnaissance Planning Report: Fish and Wildlife Resource Management Options for Lower Putah Creek, CA. Ecological Services Field Office, Sacramento, CA 95825-1846, US Department of the Interior, Fish & Wildlife Service.

An early but useful reference produced by the US Fish & Wildlife Service which included actual field reconnaissance surveys. A good starting reference.

PC-92 Stevens, M. L. and A. Ryan (1997). Ethnobotany of the Putah and Cache Creeks Eco-region. Public Service Research Program, University of California, Davis.

PC-78 Mullen, D. A. (1998). Wildlife Habitat Monitoring Program Lower Putah Creek, CA. Prepared for Solano County Water Agency by David Mullen, Environmental Consultant.

During the litigation process that led ultimately to the Putah Creek Accord, the Solano County Water Agency initiated a series of intensive field studies designed to obtain baseline data on the wildlife of the Putah Creek riparian corridor from the Putah Diversion Dam to the Yolo Causeway, to serve as a basic tool with which SCWA and other interested agencies could develop administrative policies to enhance and protect wildlife resources.

PC-10 Brice, A. (2000). Exploring Putah Creek from Monticello Dam to the Yolo Wildlife Area. UC Davis Public Service Research Program and Putah Creek Council, Davis, CA.

PC-93 Madison, M. (2002). A Sense of Order: The Rural Landscape of Lower Putah Creek, Yolo Press.

PC-94 Truan, M. (2003). "The Western Bluebird as host for the Brown-headed Cowbird: A new record from California." *Western Birds* 34: 111-113.

*This paper documented three cases of parasitism of the Western Bluebird, one of which resulted in a cowbird fledging event with associated bluebird chick mortality. These findings were important because nest records for North America suggested that brood parasitism by Brown-headed Cowbirds (*Molothrus ater*) on cavity-nesting*

species was relatively rare, and that outcomes of such parasitism on Western Bluebirds had never been documented.

PC-95 Yates, G. (2003). Gravel and Temperature Surveys of Lower Putah Creek. Prepared for Lower Putah Creek Coordinating Committee. Vacaville, CA.

PC-25 EDAW (2003). Biological Resource Assessments: Pickerel, Kilkenny, McNamara & Yolo Housing Authority Properties. Prepared for the Lower Putah Creek Coordinating Committee.

This report presents biological resources assessments for riparian habitats on the titular properties. The report describes biological resources on the four properties, including habitats present and the wildlife and plant species occurring, or potentially occurring, within the riparian portion of the properties. It also describes the suitability of onsite riparian habitats to support special-status species and describes relevant federal, state, and local laws and policies. Recommendations that would reduce the potential for adverse impacts to biological resources resulting from the proposed projects are also included.

PC-96 EDAW (2005). Lower Putah Creek Watershed Management Action Plan. Phase I – Resource Assessments. Text and Appendices. Prepared for: Lower Putah Creek Coordinating Committee.

This WMAP is a comprehensive science-based and community-based approach to protect and enhance resources in the lower Putah Creek riparian corridor, including tributaries, extending from Lake Berryessa to the Yolo Bypass. The WMAP was one of the first actions initiated by the LPCCC, through funding by a grant from the CALFED Bay-Delta Program. It was designed to be a dynamic WMAP that landowners and other stakeholders can use as a conceptual and planning framework and that would be updated with new information and new ideas to improve the watershed. Its goals are to provide landowners and management entities with a blueprint for actions to protect and enhance resources in the lower Putah Creek watershed in a manner that is compatible with and respectful of landowner priorities, interests, and concerns.

PC-38 UC Davis Office of Resource Management and Planning. (2005). Putah Creek Riparian Reserve Management Plan. Office of Resource Management and Planning, University of California, Davis.

Since the 1985-6 Management Plan Proposal was never formally adopted as the management plan for the Reserve, this document was prepared by the Reserve Manager to serve as the new Management Plan, under review and comment from the Putah Creek Reserve Advisory Committee. This Plan was designed to guide the future direction of the Reserve, and incorporates some elements and guiding principles from the 1986 plan. However, this plan also takes into account recent changes within the Reserve, including recent property acquisitions and land use assignments, the increased use of the Reserve as a research area, increased impacts from human use due to population increases, and other factors which had changed since 1986.

PC-97 Fulks, A. (2006). Putah Creek Riparian Reserve 2006 Report, University of California, Davis.

PC-98 Fulks, A. (2008). Putah Creek Riparian Reserve Annual Report, University of California, Davis.

PC-48 EDAW (2008). Lower Putah Creek Watershed Management Action Plan Proposed Projects. Prepared for Lower Putah Creek Coordinating Committee.

The companion document to the Lower Putah Creek Watershed Management Action Plan – Resource Assessments document, this Lower Putah Creek Watershed Management Action Plan – Proposed Projects provides resource information and stakeholder input to guide implementation of projects to enhance and restore the lower Putah Creek watershed. Chapter 4 presents a list of over 60 proposed projects on private and public properties along the creek that contribute to the Overarching Goal of the WMAP: Restore and enhance the lower Putah Creek watershed to a self-sustaining ecological condition.

PC-40 Boyer, A. J., et al. (2008). Putah Creek: Flowing Through Our Communities and Our Lives, EDAW and Putah Creek Council, Davis, CA.

This illustrated booklet was prepared by a group of local experts to provide background and to foster a greater appreciation of the creek's historical, physical, and biological processes.

PC-99 UC Davis Office of Resource Management and Planning. (2009). Putah Creek Riparian Reserve Experimental Ecosystem and North Fork Supplemental Management Plan.

In 2007, management responsibility for the UC Davis Experimental Ecosystem was transferred to the Putah Creek Riparian Reserve. In 2009, management responsibility for an additional 13 acres of the relict North Fork channel of Putah Creek, and 2 acres of land south of the centrifuge, were also transferred to the Riparian Reserve. The 2005 Management Plan did not directly address these properties. This document is supplemental to the overall

Management Plan, and was prepared by the Reserve Manager with review and comment by the Putah Creek Reserve Advisory Committee.

PC-100 Fulks, A. (2009). Putah Creek Riparian Reserve Annual Report. University of California, Davis.

Museum of Wildlife & Fish Biology Publications

PC-101 Truan, M. et al. (2003). Putah Creek Terrestrial Wildlife Monitoring and Assessment Plan. Museum of Wildlife & Fish Biology, University of California, Davis.

Based on Accord-based management objectives and information needs identified by the Lower Putah Creek Coordinating Committee (LPCCC), the Museum of Wildlife and Fish Biology embarked on a long-term biomonitoring program designed to contribute information critical to the understanding and assessment of wildlife and ecosystem health and to the development and implementation of present and future habitat enhancement projects. These criteria included: 1) the development of a set of practical criteria against which habitat enhancement project progress could be measured; 2) the development of a set of wildlife species indicators that could signal successful habitat enhancement; 3) an assessment of the effects of exotic plant removal on wildlife; 4) an assessment of the importance to wildlife of riparian corridor width and continuity; and 5) the development of a metric or metrics to measure wildlife response to infilling of vegetation designed to serve as a deterrent to trash dumping. The monitoring plan established a minimum level of commitment needed to monitor terrestrial wildlife and was designed to serve as a platform for expanded studies.

PC-102 Engilis, A. et al. (2004). Lower Putah Creek Terrestrial Wildlife Monitoring Plan 2003 Report. Museum of Wildlife and Fish Biology, University of California, Davis.

Under the Putah Creek Long-term Monitoring Plan, 2003 was the first full year of monitoring of terrestrial wildlife along the creek. We established and surveyed monitoring points and transects along the same geographic boundaries and one-mile grid system used for the WMAP (EDAW 2005). Avian surveys consisted of walking transect surveys and timed variable radius point count surveys. We also integrated the Putah Creek Nestbox Highway project initiated in 2000 into the program and initiated the first Breeding Bird Atlas for Putah Creek. Mammal and herpetofaunal records, derived mainly from incidental surveys, were also incorporated.

PC-103 Truan, M. et al. (2004). Putah Creek Nestbox Highway 2004 Annual Report. Museum of Wildlife & Fish Biology, University of California, Davis.

This and the following reports provide results and analysis of activities and outcomes pertaining to the Putah Creek Nestbox Highway artificial nestbox program for cavity nesting birds, a combined conservation, research, and environmental education program.

PC-104 Truan, M. et al. (2005). Putah Creek Terrestrial Wildlife Monitoring Program 2004 Report. Occasional Papers #1. Museum of Wildlife and Fish Biology, University of California, Davis: 75pp.

This report reports findings from surveys for birds (including a second year of breeding bird atlas), ants, herpetofauna, and mammals. Breeding Bird Atlas surveys were continued.

PC-105 Truan, M. et al. (2005). Putah Creek Nestbox Highway 2005 Annual Report. Museum of Wildlife and Fish Biology, University of California, Davis.

PC-106 Lindgren, E. et al. (2006). Putah Creek Terrestrial Wildlife Monitoring Program 2005 Summary Progress Report. Occasional Papers #2. Museum of Wildlife and Fish Biology, University of California, Davis: 72pp.

Assessments were expanded to 17 sites in 2005. Vegetation surveys were initiated, to be completed in 2006. Lepidopteran surveys were conducted in late summer. Avian survey methods were expanded to include constant-effort mist-netting surveys under Monitoring Avian Productivity and Survivorship (MAPS) protocols (Institute of Bird Populations), and the final year of Round One of Breeding Bird Atlas.

PC-107 Truan, M. et al. (2006). Yolo Bypass Riparian Bird and Wildlife Monitoring Program 2005 Progress Report. Prepared for CA Dept of Water Resources by the Museum of Wildlife and Fish Biology, University of California, Davis.

In partnership with the California Department of Water Resources Environmental Services Office, biologists with the UC Davis Museum of Wildlife and Fish Biology designed a program to survey vegetation, butterflies, small mammals, and birds at selected riparian sites in and adjacent to the Yolo and Sutter Bypasses to assess population status and trends and to document species-habitat relationships in Bypass riparian habitats. This project, funded by the California Department of Water Resources, was designed to gather baseline data in support of California Bay-Delta Authority Ecosystem Restoration Program (CALFED-ERP) objectives for ecosystem restoration at selected

riparian sites in the Yolo Bypass. Under this partnership, the Museum of Wildlife and Fish Biology surveyed remnant riparian habitat in the Yolo Bypass. Sites were selected both to develop baseline data and to help identify desirable riparian habitat characteristics. Species surveyed included birds, small mammals, and butterflies. Information from these surveys were used to guide the development of a cooperative program to protect existing habitats, rehabilitate degraded habitats, and fill gaps in forest continuity.

PC-108 Truan, M. et al. (2007). Putah Creek Nestbox Highway 2007 Annual Report. Museum of Wildlife & Fish Biology, University of California, Davis.

PC-109 Truan, M. et al. (2007). Yolo Bypass Riparian Bird and Wildlife Monitoring Program 2006 Progress Report. Prepared for California Dept of Water Resources by the Museum of Wildlife and Fish Biology, University of California, Davis.

This report provided a summary of research findings and work completed under year two of the three year project.

PC-110 Truan, M. et al. (2008). Yolo Bypass Riparian Bird and Wildlife Monitoring Program, 2005-2007 Final Report with Appendices. Museum of Wildlife and Fish Biology, University of California, Davis, CA.

This final report presents the results of surveys conducted from 2004 through summer 2007. The wooded riparian habitats of the Yolo Bypass were found to be fragmented, few and far between. They exist mainly on the fringes of the Bypass, along tributaries, toe drains, sloughs, and remnant oxbows, in areas not deemed important for flood conveyance or where clearing of vegetation has ceased long enough for trees to become established. Often highly linear, they are typically just a few trees wide and support a high proportion of agriculturally-associated and/or nonnative species. Nevertheless, our surveys documented 135 different plant species (52% of which were native); 19 different butterfly species (36% of all species expected to occur in the region); and 164 species of birds (50% of all species known to occur in Yolo County). That these marginal habitats managed to support such biodiversity is encouraging and suggests that projects that improve wildlife habitat may be rewarded with regional population increases of many different species, including species of conservation concern. While other taxonomic groups were not systematically surveyed, incidental observations indicate that some of the sites (Fremont Weir in particular) provided habitat for relatively large animals like coyote and mule deer.

PC-111 Truan, M. et al. (2010). Putah Creek Terrestrial Wildlife Monitoring Program: Comprehensive Report and Map Volume, 1997-2009. Museum of Wildlife and Fish Biology, University of California, Davis.

This comprehensive report represented the culmination of the Phase I of the MWFb's Terrestrial Wildlife Monitoring and Assessment Program. It contained detailed data and analysis for a variety of wildlife surveyed, including overall impressions and recommendations for future research, restoration and management.

PC-112 Trochet, J. et al. (2013). "Tracy Storer and the bird life of Putah Creek in by-gone days." Central Valley Bird Club Bulletin.

An interesting account of the life of founding UC Davis professor Tracy Storer and his research on Putah Creek.

PC-113 Dybala, K. et al. (2015). "Summer vs. winter: Examining the temporal distribution of avian biodiversity to inform conservation." *The Condor: Ornithological Applications* **117**: 560-576.

Abstract: Winter habitat quality plays a key role in avian population regulation, and conservation of winter habitat is a priority for waterfowl, shorebirds, and Neotropical migrant landbirds. Yet, there has been little discussion of the importance of conserving temperate wintering habitat for landbirds, including the billions of Neotemperate migratory landbirds that winter in the United States. The value and impact of conservation initiatives in the U.S. could be maximized by accommodating the habitat requirements of bird communities throughout the full annual cycle, particularly in the southern and western U.S. where winter species richness is concentrated. To estimate the degree to which winter bird communities should be a conservation priority, we examined the temporal distribution of avian diversity using riparian habitat in the lower Cosumnes River and lower Putah Creek watersheds in California's Central Valley. We used hierarchical multispecies occupancy models to estimate seasonal species richness and phylogenetic diversity in each watershed. We found that total species richness was equally as high in winter as in summer, and that phylogenetic diversity was higher in winter, with a considerable proportion of the winter avian diversity attributable to boreal breeding Neotemperate migrants. Our results provide evidence that maintaining and restoring high-quality riparian habitat for winter bird communities in California is an important conservation opportunity. Broader recognition of the diversity of temperate winter bird communities and additional research into the factors affecting body condition and survival would facilitate effective conservation of high-quality winter habitat, benefiting Neotemperate migrants and year-round residents during a season that can have important impacts on their population dynamics.

PC-114 Dybala, K. et al. (2016). "LONG-TERM, LARGE-SCALE RESPONSES OF THE BREEDING BIRD COMMUNITY TO RESTORATION OF THE LOWER PUTAH CREEK WATERSHED, CALIFORNIA, U.S.A." *Ecological Restoration* (in review).

Abstract: Restoration of river processes and riparian vegetation is a high priority, particularly in the western United States, where it provides critical habitat for fish and wildlife along with many other environmental and economic benefits. Despite considerable time and resources invested in restoration, surprisingly few studies have quantified long-term and large-scale responses of wildlife. We evaluated the long-term, large-scale responses of the breeding bird community to restoration and management of the lower Putah Creek watershed in the Central Valley of California, USA following the establishment of the Putah Creek Accord, a historic agreement designed to protect the ecosystem as well as the livelihoods of farmers and residents along the lower creek. We surveyed the breeding bird community at 14 sites distributed over 30 km of the creek between 1999 and 2012. We quantified changes in the abundance of 43 breeding bird species, as well as changes in the density and diversity of the entire breeding bird community, with a focus on riparian species. Consistent with a long-term, large-scale improvement in riparian ecosystem condition, we detected significant large-scale increases in the average densities of 27 individual species and the density and diversity of the entire breeding bird community, which could not be accounted for by broader regional trends or the influence of local nest box installation. Further, changes in the watershed favored riparian and woodland-associated species over urban-associated species. However, in comparison with Central Valley Joint Venture density objectives for seven riparian focal species, there is still considerable room for further improvement, particularly at sites farthest downstream. Overall, our results echo previously-observed shifts in the Putah Creek fish community, and provide evidence that the Putah Creek Accord and subsequent management actions have been successful in improving the lower Putah Creek riparian ecosystem condition for both aquatic and terrestrial organisms.

PC-115 Trochet, J. et al. (2016). "NEW AND EXTRALIMITAL BREEDING BIRD RECORDS FOR PUTAH CREEK, CALIFORNIA." *Western Birds* (in press).

This paper reports on extralimital and new breeding records from our long-term dataset of birds along lower Putah Creek, summarizing records from a 16-year period beginning in 1997. These breeding records are important as they support the pioneering nature of birds and the importance of Putah Creek in the maintenance of riparian species in the Sacramento Valley.

REGIONAL REFERENCES

PC-116 Brinson, M. M., et al. (1981). *Riparian Ecosystems: Their Ecology and Status*, US Dept of the Interior, Fish and Wildlife Service Biological Services Program Eastern Energy and Land Use Team.

The purpose of this publication was to document and interpret information available on riparian ecosystems so that the consequences of their alterations and deterioration could be assessed at a national level. This document was a second generation effort whereby the authors summarized and synthesized what was known about riparian ecosystem function, values, and management at that time. It was intended to provide a geographically balanced treatment of technical information on riparian ecosystems from a nationwide perspective. By focusing on the common properties of these ecosystems, recommendations and decisions that affect their management and protection were simplified. This manuscript was oriented to provide assistance to decisionmakers involved in ecosystem management using ecological principles and information.

PC-117 California State Lands Commission. (1993). *California's Rivers: A Public Trust Report Executive Summary*: 92pp.

This report was another in a series that examined the status of and trends affecting public trust lands under the jurisdiction of the Commission. The series of reports had three purposes: 1) to mark the status of the public trust resources of California's rivers, lakes, bays, estuaries and tidelands; 2) to explore the likely future of those resources if present trends continued; and 3) to identify means by which such resources could be protected and restored.

PC-118 Jones & Stokes Associates. (1994). *Suitability analysis for enhancing wildlife habitat in the Yolo Basin*. Prepared for Central Valley Habitat Joint Venture and California Wetlands Foundation.

PC-119 EIP Associates et al. (1995). *Technical Studies and Recommendations for the Lower Cache Creek Resource Management Plan*. Prepared for Yolo County Community Development Agency by EIP Associates, Northwest Hydraulic Consultants, and David Keith Todd Consulting Engineers.

This report contained three technical studies covering the areas of streamway fluvial morphology, groundwater resources, and riparian habitat for Cache Creek. The objective of this report was to provide: 1) a comprehensive evaluation of all existing relevant data on Cache Creek resources; 2) a thorough review of historic conditions on and adjacent to the creek; 3) a credible evaluation of changes in the nature of the creek and its resources over time and why those changes occurred; and 4) a general understanding of the interrelationship between the streamway morphology, ox and riparian habitat characteristics of Cache Creek, and how conditions were likely to change in the future under various approaches to resource management.

PC-120 American River Natural History Association. (1996). The Outdoor World of the Sacramento Region.

PC-121 Faber, P. M. and R. F. Holland (1996). Common Riparian Plants of California, Pickleweed Press, 212 Del Casa, Mill Valley, CA 94941.

PC-122 Kemper, J. (1996). Discovering Yolo County Wildlife.

PC-123 The Bay Institute. (1998). From the Sierra to the Sea: The Ecological History of the San Francisco Bay-Delta Watershed.

This report was designed to provide a summary of the ecological history of the SF-BD watershed and to provide a coherent and defensible ecological framework and information base for restoration. The philosophy of this report centered on the need for an historical, broad-scale perspective on system ecology stemming from two fundamental principles of ecological restoration - the need to manage toward a natural template and to manage at ecosystem and landscape levels.

PC-124 Jones & Stokes Associates. (2001). A Framework for the Future: Yolo Bypass Management Strategy (Final Rpt). Prepared for CALFED Bay-Delta Program by Yolo Bypass Working Group, Yolo Basin Foundation, and Jones & Stokes.

This Management Strategy was the product of more than two years of meetings held by the Working Group, a collection of landowners, water users, and public agencies (collectively defined as "stakeholders") that had ownership of or responsibility for property and flood conveyance functions in the Yolo Bypass. The genesis of the project came from the Yolo Basin Foundation and other parties who were concerned that many entities throughout the Sacramento River watershed were expressing an interest in creating and enhancing fish and wildlife habitat in the Bypass. Specifically, the Foundation observed that such habitat-related discussions were ignoring the presence of private property in the Bypass.

PC-125 California Dept. of Fish & Game. (2008). Yolo Bypass Wildlife Area Land Management Plan.

This LMP was prepared through a partnership between DFG and the Yolo Basin Foundation and with the benefit of an extensive public-input program. The stated purpose of the LMP was to a) guide management of habitats, species, appropriate public uses, and programs to achieve DFG's mission; b) direct an ecosystem approach to managing the Yolo Bypass Wildlife Area in coordination with the objectives of the CALFED Ecosystem Restoration Program; c) identify and guide appropriate, compatible public-use opportunities within the Yolo Bypass Wildlife Area; d) direct the management of the Yolo Bypass Wildlife Area in a manner that promotes cooperative relationships with adjoining private-property owners; e) establish a descriptive inventory of the sites and the wildlife and plant resources that occur in the Yolo Bypass Wildlife Area; f) provide an overview of the Yolo Bypass Wildlife Area's operation, maintenance, and personnel requirements to implement management goals, g) serve as a planning aid for preparation of the annual budget for the Bay-Delta Region (Region 3); h) present the environmental documentation necessary for compliance with state and federal statutes and regulations, i) provide a description of potential and actual environmental impacts that may occur during plan management, and j) identify mitigation measures to avoid or lessen these impacts.

Conference Reports and Abstracts

PC-126 California Riparian Systems Conference. (1977). Riparian Forests in California: Their Ecology and Conservation, University of California, Davis, Institute of Ecology, UC Davis.

PC-127 Warner, R. E. and K. M. Hendrix (1984). California Riparian Systems: Ecology, Conservation, and Productive Management, University of California Press.

This volume had its origin in the California Riparian Systems Conference, held at the University of California, Davis, 17-19 September 1981. The conference was organized as a means of bringing together the wide range of riparian interests which have been evolving throughout California over the previous decade. The main goals of the conference were: a) to define major riparian concepts, problems, and opportunities; b) to promote discussion and information exchange among riparian interests; and c) to establish the technical and communicative base for a long-term, statewide riparian planning, management, and conservation strategy. From 150 papers presented, 128 papers were ultimately accepted for publication and then subjected to intensive post-conference technical and general editorial review. The result was a document of significantly higher professional quality than the usual conference proceedings, falling perhaps midway between that and rigorously peer-reviewed, heavily edited technical journals and monographs.

PC-128 California Riparian Systems Conference. (1989). Proceedings of the California Riparian Systems Conference: protection, management, and restoration for the 1990's, Pacific Southwest Forest and Range Experiment Station US Forest Service, US Department of Agriculture.

The nearly 100 papers in these proceedings were aimed at a diverse audience of resource managers, environmental consultants, researchers, landowners, environmental activists, and a variety of user groups. Some of the papers explained how streams interact with the plants and animals at their margins and with the land that they occupy to accomplish a range of important functions, including protecting the banks from erosion, reducing the impacts of flooding, providing wildlife habitat, protecting instream habitat for fishes, producing forage for livestock, and enhancing human lives. Biological diversity in western lands is often directly related to these corridors, which also serve as major routes for migratory birds. Special attention was given to the several threatened and endangered species which need riparian habitats and to the response of riparian systems to such disturbances as fire, logging, landslides and diversion for power or water supply. A concluding section dealt with measures being taken to preserve and restore riparian lands, particularly along large rivers and in the cities. Special attention was given in some of these papers to revegetation techniques.

PC-129 CALFED Bay-Delta Program Abstracts. (2000). Science Conference 2000, Sacramento Convention Center.

PC-130 California Riparian Systems: Processes and Floodplains Management, Ecology, and Restoration. (2001). Riparian Habitat and Floodplains Conference, Radisson Hotel, Sacramento CA, Pickleweed Press, Mill Valley, CA.

PC-131 CALFED Bay-Delta Program Abstracts. (2003). Advances in Science and Restoration in the Bay, Delta, and Watershed, Sacramento Convention Center.

PC-132 CALFED Bay-Delta Program Abstracts. (2004). Getting Results: Integrating Science and Management to Achieve System-Level Responses. 3rd Biennial CALFED Bay-Delta Program Science Conference.

PC-133 CALFED Bay-Delta Program Abstracts. (2006). Making Sense of Complexity: Science for a Changing Environment. 4th Biennial CALFED Science Conference 2006, Sacramento Convention Center.

PC-134 CALFED Bay-Delta Program Abstracts. (2008). Global Perspectives and Regional Results: Science and Management in the Bay-Delta System. 5th Biennial CALFED Science Conference, Sacramento Convention Center.

GENERAL RIPARIAN, LANDSCAPE AND RESTORATION ECOLOGY REFERENCES

PC-135 Malanson, G. P. (1993). Riparian Landscapes, Cambridge University Press.

Examines the ecological systems of streamside and floodplain areas from the perspective of landscape ecology. The specific spatial pattern of riparian vegetation is seen as a result of, and a control on, the ecological, geomorphological, and hydrological processes that operate along rivers. Riparian structures are controlled by the spatial dynamics of channels, flooding and soil moisture. These dynamics are part of integrated cascades of water, sediment, nutrients and carbon, to which animal and plant species respond in ways that illuminate community structure and competition. The role of the riparian zone in controlling species distribution and abundance is discussed. Intelligent management of these valuable ecological resources is highlighted. The potential for linking hydrological, geomorphological and ecological simulation models is also explored.

PV-136 Leopold, L. B. (1994). A View of the River, Harvard University Press.

Written by a seminal and creative scholar in the field of river morphology, presents a coherent description of the river, its shape, size, organization, and action, along with a consistent theory that explains much of the observed character of channels. Both technical and personal, based mainly on fieldwork in the eastern and Rocky Mountain States, this book provides a firm foundation for understanding the behavior of rivers and a wealth of firsthand observations by a thoughtful and experienced scientist.

PC-137 Forman, R. T. T. (1995). Land Mosaics: The ecology of landscapes and regions, Cambridge University Press.

This book builds upon a previous tome, Landscape Ecology (Forman & Godron 1986) which contains an initial weaving of the field into a land mosaic paradigm. That book remains a good introduction to the subject and contains a fuller discussion of terminology, landscape typology, natural processes and human roles in the origin of landscapes, and information-theory analyses of landscape heterogeneity. The present book is a state-of-the-art synthesis of more recent additions to the body of knowledge concerning land mosaics including: worldwide coverage, a broader range of application in land-use issues, extensive literature citations, integration of human

culture and activities with natural phenomena, boundaries and edges, patch shape, stream and river corridors, road corridors, windbreaks, movements and flows across a mosaic, land transformation and fragmentation, land planning and management, creating sustainability on land, and the ecology of regions.

PC-138 Mount, J. F. (1995). *California Rivers and Streams: The Conflict Between Fluvial Process and Land Use*, University of California Press.

A seminal reference providing a clear and informative overview of the physical and biological processes that shape California's rivers and watersheds.

PC-139 Rosenzweig, M. L. (2003). *Win-Win Ecology: How the Earth's Species Can Survive in the Midst of Human Enterprise*, Oxford University Press.

A thought-provoking treatise on "reconciliation ecology" the deliberate sharing of our habitats with other species. Provides examples and evidence of ways that people can coexist with nature without jeopardizing human enterprise.

PC-140 Naiman, R. J., et al. (2005). *Riparia: Ecology, Conservation, and Management of Streamside Communities*, Elsevier Academic Press.

Another seminal work that details our understanding of the unique ecological functions of riparia and how these functions are linked to dynamic biophysical processes and interactions across multiple spatial and temporal scales.

PC-141 Hobbs, R. J., et al. (2013). *Novel Ecosystems: Intervening in the New Ecological World Order*, Wiley-Blackwell.

In this book, the authors use a framework presented by Hobbs et al. (2009) as a starting point in which varying degrees of alteration of abiotic and/or biotic components result in systems that move away from their historical configuration and dynamics into different configurations. This framework identifies a gradation in level of change, with moderately changed systems forming a hybrid state and more extensively changed systems forming a novel state. Inherent in this formulation is the idea that there may be thresholds in play, both ecological and social, that effectively prevent the return of the system from a novel state to a less altered state. Book contains a series of chapters developed by presenters at a workshop held in British Columbia, Canada in May 2011. Main chapters aim to explore current understanding of novel ecosystems, their biophysical, social and ethical dimensions and how they might be managed most effectively. These are complemented by a set of case studies. Finally a number of perspectives from authors are included that illustrate how different people perceive or came to know or appreciate novel systems, or give local anecdotes of how the issues surrounding novel ecosystems are being played out in different settings.