

2010 References Cited

- Adams, N.S., Rondorf, D.W., Evans, S.D., and J.E. Kelly, 1998. Effects of surgically and gastrically implanted radio tags on growth and feeding behavior of juvenile Chinook salmon: Transactions of the American Fisheries Society, v.127, p. 128-136.
- Adams, N.S., Plumb, J.M., Hatton, T.W., Jones, E.C., Swyers, N.M., Sholtis, M.D., Reagan, R.E., and K.M. Cash, 2008. Survival and migration behavior of juvenile salmonids at McNary Dam, 2006: Report to U.S. Army Corps of Engineers, Contract No. W68SBV60478899, Walla Walla Washington.
- Adams, N.S., and T.D. Counihan, editors, 2009. Survival and migration behavior of juvenile salmonids at McNary Dam, 2007: Report to U.S. Army Corps of Engineers, Contract No. W68SBV70178419, Walla Walla, Washington.
- Aoki T., 1999. Motile Aeromonads. Chapter 11 In: Fish Diseases and Disorders, Vol. 3: Viral, Bacterial and Fungal Infections, Woo P T K and Bruno D W, editors, CABI Pub. New York.
- Baker, P.F., Speed, T.P., and F.K. Ligon, 1995. Estimating the influence of temperature on survival of Chinook salmon smolts (*Oncorhynchus tshawytscha*) migrating through the Sacramento-San Joaquin Delta of California: Canadian Journal of Fisheries and Aquatic Sciences, v. 52, p. 855-863.
- Barton, B.A., J.D. Morgan and M.M. Vijayan, 2002. Physiological and condition-related Indicators of environmental stress in fish. Pages 111-148 in Adams S M, editor. Biological Indicators of Aquatic Ecosystem Stress. American Fisheries Society, Bethesda, Maryland.
- Bowen, M.D. and R Bark, 2010. 2010 Effectiveness of a Non-Physical Fish Barrier at the Divergence of the Old and San Joaquin Rivers (CA) (Draft). U. S. Department of Interior, Bureau of Reclamation Technical Memorandum 86-68290-10-07, Sept 2010.
- Bowen, M.D., L. Hanna, R. Bark, V. Maisonneuve, and S. Hiebert, 2008. Non-physical barrier evaluation, Physical Configuration I. US Department of the Interior, Bureau of Reclamation. Technical Memorandum. Technical Service Center. Denver, CO, US.
- Bowen, M. D., Hiebert, S., Hueth, C. and V. Maisonneuve, 2009. 2009 Effectiveness of a Non-Physical Fish Barrier at the Divergence of the Old and San Joaquin Rivers (CA) (Draft). U. S. Department of Interior, Bureau of Reclamation Technical Memorandum 86-68290-11, Sept 2009.
- Brandes, P.L., and J.S. McLain, 2001. Juvenile Chinook salmon abundance, distribution, and survival in the Sacramento-San Joaquin Estuary, in Brown, R.L., ed., Contributions to the biology of Central Valley salmonids, v. 2, Fish Bulletin 179: California Department of Fish and Game, Sacramento, California, p. 39-138
- Brownie, C., Hines, J.E., Nichols, J.D., Pollock, K.H, and J.B. Hestbeck, 1993. Capture-recapture studies for multiple strata including non-Markovian transitions: Biometrics, v. 49, p. 1173-1187.
- Burnham, K.P., Anderson, D.R., White, G.C., Brownie, C., and K.H. Pollock, 1987. Design and analysis methods for fish survival experiments based on release-recapture: American Fisheries Society, Monograph 5, Bethesda, Maryland.
- Burnham, K.P., and D.R. Anderson, 2002. Model selection and multimodel inference: A practical information-theoretic approach, 2nd edition: Springer, New York, 488 p.
- California Department of Water Resources (DWR), 2010. Water Conditions in California, California Cooperative Snow Surveys Bulletin 120, Report 3, April 1, 2010.
- Clark, G.H., 1929. Sacramento-San Joaquin salmon (*Oncorhynchus tshawytscha*) fishery of California: California Department of Fish and Game, Fisheries Bulletin No. 17, 73 p.
- Clark, K.W, 2009. 2010 Temporary Barriers Fish Monitoring Proposal. California Department of Water Resources, Bay-Delta Office. January 2010.
- Clifton-Hadley R.S., R.H. Richards and D. Bucke, 1987. Further consideration of the haematology of proliferative kidney disease (PKD) in rainbow trout, *Salmo gairdneri*
- Cowan, L., and C.J. Schwarz, 2005. Capture-recapture studies using radio telemetry with premature radio-tag failure: Biometrics, v. 61, p. 657-664.
- Duston J., R. L. Saunders and D.E. Knox, 1991. Effects of increases in freshwater temperature on loss of smolt characteristics in Atlantic salmon (*Salmo salar*). Canadian Journal of Aquatic Animal Sciences 48: 164-169.
- Ehrenberg, J.E., and T.W. Steig, 2003. Improved techniques for studying the temporal and spatial behaviour of a fish in a fixed location: ICES Journal of Marine Science, v. 60, p. 700-706.

- Ewing R. D., G. S. Ewing and T.D. Satterthwaite, 2001. Changes in gill Na⁺, K⁺-ATPase specific activity during seaward migration of wild juvenile Chinook salmon. *Journal of Fish Biology* 58: 1414-1426.
- Ferguson, H.W., 1981. The effects of water temperature on the development of proliferative kidney disease in rainbow trout, *Salmo gairdneri*: *Journal of Fish Diseases*, v. 4, p. 175-177.
- Foott J. S. and R. Stone, 2008. FY 2008 Investigational Report: Evaluation of sonic tagged Chinook juveniles used in the 2008 VAMP study for delayed mortality and saltwater survival – effects of Proliferative Kidney Disease. US Fish and Wildlife Service, California-Nevada Fish Health Center, Anderson, CA. Available: <http://www.fws.gov/canvfhc/reports.asp> (September 2010).
- Foott, J.S., R. Stone and K. Nichols, 2005. FY 2005 Investigational Report: The effects of Proliferative Kidney Disease on blood constituents, swimming performance and saltwater adaptation in Merced River Hatchery juvenile Chinook salmon used in the 2005 VAMP study. US Fish and Wildlife Service, California-Nevada Fish Health Center, Anderson, CA. Available: <http://www.fws.gov/canvfhc/reports.asp> (September 2009).
- Foott J.S., R. Stone, and K. Nichols, 2007. Proliferative kidney disease (*Tetracapsuloides bryosalmonae*) in Merced River Hatchery juvenile Chinook salmon: Mortality and performance impairment in 2005 smolts. *California Fish and Game* 93(2): 57 – 76.
- Harmon R., K. Nichols, and J.S. Foott, 2004. FY 2004 Investigational Report: Health and Physiological Assessment of VAMP Release Groups – 2004. US Fish and Wildlife Service, California-Nevada Fish Health Center, Anderson, CA Available: (<http://www.fws.gov/canvfhc/reports.asp>).
- Healey, M.C., Dettinger, M.D., and R.B. Norgaard, editors, 2008. The state of Bay-Delta science, 2008: CALFED Science Program, Sacramento, California, 174 p., available from < <http://www.science.calwater.ca.gov/publications/>>
- Hedrick R.P., M.L. Kent, and C.E. Smith, 1986. Proliferative kidney disease in salmonid fishes. *Fish Disease Leaflet* 74, Fish and Wildlife Service, Washington D.C. 20240.
- Hedrick R.P. and D. Aronstien, 1987. Effects of saltwater on the progress of proliferative kidney disease in Chinook salmon (*Oncorhynchus tshawytscha*). *Bulletin of the European Association of Fish Pathologists* 7(4): 93-96.
- Holbrook, C.M., R.W. Perry, and N.S. Adams, 2009. Distribution and joint fish-tag survival of juvenile Chinook salmon migrating through the Sacramento-San Joaquin River Delta, 2008. US Department of the Interior, US Geological Survey. Biological Resources Discipline Report to San Joaquin River Group Authority. Cook, WA, US.
- Humason G. L. 1979. *Animal Tissue Techniques*, 4th edition. W H Freeman and Co., San Francisco.
- Kimmerer, W.J., 2002. Physical, biological, and management responses to variable freshwater flow into the San Francisco Estuary: *Estuaries*, v. 25, p. 1275-1290.
- Kimmerer, W.J., 2008. Losses of Sacramento River Chinook salmon and delta smelt to entrainment in water diversions in the Sacramento-San Joaquin Delta: *San Francisco Estuary and Watershed Science*, v. 6, p. 1-27.
- Lady, J.M., and J.R. Skalski, 2009. USER 4: User specified estimation routine. School of Aquatic and Fishery Sciences. University of Washington, available from <<http://www.cbr.washington.edu/paramest/user/>>
- Lemasson, B.H., J.W. Haefner, and M.D. Bowen, 2008. The effect of avoidance behavior on predicting fish passage rates through water diversion structures. *Ecological Modeling* 219: 178-188.
- Li, T. and Anderson, J.J., 2009. The Vitality Model: A way to understand population survival and demographic heterogeneity. *Theoretical Population Biology* 76: 118-131.
- Lindley, S.T., Schick, R., May, B.P., Anderson, J.J., Greene, S., Hanson, C. Low, A., McEwan, D. MacFarlane, R. B., Swanson, C., and J.G. Williams, 2004. Population structure of threatened and endangered Chinook salmon ESUs in California's Central Valley Basin: National Marine Fisheries Service, La Jolla, California, Technical Memorandum no. 360, 56 p.
- Lindley, S.T., Grimes, C.B., Mohr, M.S., Peterson, W., Stein, J., Anderson, J.T., Botsford, L.W., Bottom, D.L., Busack, C.A., Collier, T.K., Ferguson, J., Garza, J.C., Grover, A.M., Hankin, D.G., Kope, R.G., Lawson, P.W., Low, A., MacFarlane, R.B., Moore, K., Palmer-Zwahlen, M. Schwing, F.B., Smith, J., Tracy, C., Webb, R., Wells, B.K., and T.H. Williams, 2009. What caused the Sacramento River fall Chinook stock collapse?: Pre-publication report to the Pacific Fishery Management Council, 57 p.
- Manner, C.E., Laboratory evaluation of platelets. Pages 671-679 in: Lotspeich-Steininger C A, Stiene-Martin E A, Koepke J A, editors. *Clinical hematology: principles, procedures, correlations*. J B Lippincott Company, Philadelphia.
- Marine, K.R., and J.J. Cech, Jr., 2004. Effects of high water temperatures on growth, smoltification, and predator avoidance in juvenile Sacramento River Chinook salmon: *North American Journal of Fisheries Management*, v. 24, p. 198-210.

- Martinelli, T.L., Hansel, H.C., and R.S. Shively, 1998. Growth and physiological responses to surgical and gastric radio tag implantation techniques in subyearling Chinook salmon: *Hydrobiologia*, v. 371/372, p. 79-87.
- McCormick, S.D. and H.A. Bern, 1989. In vitro stimulation of Na⁺-K⁺-ATPase activity and ouabain binding by cortisol in Coho salmon gill. *American Journal of Physiology*. 256: R707-R715.
- McCullagh, P., and J. Nelder, 1983. Generalized linear models. Chapman and Hall, London.
- McCullagh, P., and J. Nelder, 1989. Generalized linear models. 2nd Edition. Chapman and Hall, London.
- McKenzie, D. J., A. Shingles and A. H. Taylor, 2003. "Sub-lethal plasma ammonia accumulation and the exercise performance of salmonids." *Comparative Biochemistry and Physiology* 135: 515-526.
- Myers, J.M., Kope, R.G., Bryant, G.J., Teel, D., Lierheimer, L.J., Wainwright, T.C., Grant, W.S., Waknitz, F.W., Neely, K., Lindley, S.T., and R.S. Waples, 1998. Status review of Chinook salmon from Washington, Idaho, Oregon, and California: National Marine Fisheries Service, La Jolla, California, Technical Memorandum no. 35, 443 p.
- Newman, K.B., 2008. An evaluation of four Sacramento-San Joaquin River Delta juvenile salmon survival studies: U.S. Fish and Wildlife Service, Stockton, California, Project number SCI-06-299, available from <<http://www.science.calwater.ca.gov/pdf/psp/>>
- Newman, K.B., and J. Rice, 2002. Modeling the survival of Chinook salmon smolts outmigrating through the lower Sacramento River system: *Journal of the American Statistical Association*, v. 97, p. 983-993.
- Nichols, K., 2010. FY2010 Technical Report: Health and Physiological Assessment of VAMP Release Groups. U.S. Fish and Wildlife Service California-Nevada Fish Health Center, Anderson, CA. Available: <http://www.fws.gov/canvfhc/reports.asp>
- Nichols K. and J.S. Foott, 2002. Health monitoring of hatchery and natural fall-run Chinook salmon juveniles in the San Joaquin River and tributaries, April – June 2001. US Fish and Wildlife Service, California-Nevada Fish Health Center, Anderson, C A (<http://www.fws.gov/canvfhc/reports.asp>).
- Nichols, K. and J. S. Foott, 2008. Survival and Physiological Evaluation of Chinook Salmon held in the San Joaquin River near the Stockton Wastewater Treatment Plant, May 2008. Draft Report. U.S. Fish & Wildlife Service California – Nevada Fish Health Center, Anderson, CA.
- Nichols K. and J.S. Foott, 2009. FY 2009 Technical Report: Health and Physiological Assessment of VAMP Release Groups. U.S. Fish and Wildlife Service California-Nevada Fish Health Center, Anderson, CA.
- Perry, R.W. and J.R. Skalski, 2009. Survival and migration route probabilities of juvenile Chinook salmon in the Sacramento-San Joaquin river Delta during the winter of 2007-2008. School of Fisheries and Aquatic Sciences, University of Washington. Report submitted to the U.S. Fish and Wildlife Service, Stockton, CA . July 15, 2009. 47 p.
- Perry, R.W., J.R. Skalski, P.L.Brandes, P.T.Sandstrom, A.P. Klimley, A. Ammann, and B. MacFarlane, 2010. Estimating survival and migration route probabilities of juvenile Chinook salmon in the Sacramento-San Joaquin River Delta: *North American Journal of Fisheries Management* 30:142-156.
- Phillips A. M. 1969. Nutrition, digestion and energy utilization. In: Hoar W S and Randall D J, editors. *Fish Physiology*. Vol I. Academic Press, San Diego. p. 391-432.
- RBI_Inc, 2007. "Assessment of fish mortality observed in the San Joaquin River near Stockton in May 2007".
- San Joaquin River Group Authority, (2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007). Annual Technical Report: On implementation and Monitoring of the San Joaquin River Agreement and the Vernalis Adaptive Management Plan. Available:< <http://www.sjrg.org/technicalreport>>
- San Joaquin River Group Authority, 2008. 2007 Technical Report: On implementing and monitoring of the San Joaquin River Agreement and the Vernalis Adaptive Management Plan: Prepared by San Joaquin River Group Authority for California Water Resource Control Bd, 127 p. Available:< <http://www.sjrg.org/technicalreport>>
- San Joaquin River Group Authority, 2009. 2008 Technical Report: On implementing and monitoring of the San Joaquin River Agreement and the Vernalis Adaptive Management Plan: Prepared by San Joaquin River Group Authority for California Water Resource Control Bd, 128 p. Available:< <http://www.sjrg.org/technicalreport>>
- San Joaquin River Group Authority, 2010. 2009 Technical Report: On implementing and monitoring of the San Joaquin River Agreement and the Vernalis Adaptive Management Plan: Prepared by San Joaquin River Group Authority for California Water Resource Control Bd, 128 p. Available:< <http://www.sjrg.org/technicalreport>>

- Seber, G.A.F., 1982. The estimation of animal abundance and related parameters: Macmillan, New York.
- Seber, G.A.F., 2002. The estimation of animal abundance 2nd Edition. Blackburn Press, Caldwell, New Jersey.
- Skalski, J.R., Townsend, R., Lady, J., Giorgi, A.E., Stevenson, J.R., and R.S. McDonald, 2002. Estimating route-specific passage and survival probabilities at a hydroelectric project from smolt radiotelemetry studies: Canadian Journal of Fisheries and Aquatic Sciences, v. 59, p. 1385-1393.
- Skinner, J.E., 1962. An historical review of the fish and wildlife resources of the San Francisco Bay Area: California Department of Fish and Game, Sacramento, California, Water Projects Report no. 1, 226 p., available from <<http://www.estuaryarchive.org/archive>>
- Smith, S.G., Muir, W.D., Hockersmith, E.E., Zabel, R.W., Graves, R.J., Ross, C.V., Connor, W.P., and B.D. Arnsberg, 2003. Influence of river conditions on survival and travel time of Snake River subyearling fall Chinook salmon: North American Journal of Fisheries Management, v. 23, p. 939-961.
- Sokal, R.R. and F.J. Rohlf, 1995. Biometry, 3rd edition, W.H. Freeman and Company, New York, NY, USA.
- Sweet L.I., D.R. Passion-Reader, P.G. Meir, and G.M. Omann., 1999. Xenobiotic-induced apoptosis: significance and potential application as a general biomarker of response. Biomarkers 4(4): 237 – 253.
- The Bay Institute, 2003. The Bay Institute Ecological Scorecard: San Francisco Bay Index, 2003: The Bay Institute of San Francisco, 102 p., available from <<http://www.bay.org/>>
- Townsend, R.L., Skalski, J.R., Dillingham, P., and T.W. Steig, 2006. Correcting bias in survival estimation resulting from tag failure in acoustic and radiotelemetry studies: Journal of Agricultural, Biological, and Environmental Statistics, v. 11, p. 1-14.
- USFWS and AFS-FHS (U.S. Fish and Wildlife Service and American Fisheries Society-Fish Health Section), 2007. Standard procedures for aquatic animal health inspections. In AFS-FHS. FHS blue book: suggested procedures for the detection and identification of certain finfish and shellfish pathogens, 2007 edition. AFS-FHS, Bethesda, Maryland.
- Vogel, D.A., 2007a. Use of acoustic telemetry to evaluate Chinook salmon smolt migration and mortality in California's Central Valley and Delta. American fisheries Society 137th Annual Meeting. Thinking Downstream and Downcurrent: Addressing Uncertainty and Unintended Consequences in fish and fisheries. September 2-6, 2007. San Francisco, CA.
- Vogel, D.A., 2007b. Technical memorandum to participating agencies in the 2007 Adaptive Management Program concerning high fish mortality near Stockton, California. Natural Resource Scientists, Inc. May 20, 2007. 5 p.
- Vogel, D.A., 2008. Pilot study to evaluate acoustic-tagged juvenile Chinook salmon smolt migration in the northern Sacramento-San Joaquin Delta, 2006-2007. Prepared for the California Department of Water Resources, Natural Resource Scientists, Inc. March 2008. 43p.
- Vogel, D. A., 2010. Evaluation of Acoustic-Tagged Juvenile Chinook Salmon Movements in the Sacramento – San Joaquin Delta during the 2009 Vernalis Adaptive Management Program. Prepared for the Vernalis Adaptive Management Program, Natural Resource Scientists, Inc. March 2010.
- Vogel, D. A., 2011. Evaluation of Acoustic-Tagged Juvenile Chinook Salmon and Predatory Fish Movements in the Sacramento – San Joaquin Delta during the 2010 Vernalis Adaptive Management Program. Draft Report Prepared for the California Department of Water Resources and the Vernalis Adaptive Management Program, Natural Resource Scientists, Inc. September 2011.
- Wedemeyer G. A. 1996. Physiology of Fish in Intensive Culture Systems. Chapman & Hall, New York.
- Welton J.S., Beaumont W.R.C. and M. Ladle, 2002. The efficacy of Acoustic bubble screens in deflecting Atlantic Salmon (*salmo salar L.*) smolts in the River From, U.K. Fisheries Management and Ecology 9: 11-18.
- Wilder, R.M., and J.F. Ingram, 2006. Temporal patterns in catch rates of juvenile Chinook salmon and trawl net efficiencies in the Lower Sacramento River: IEP Newsletter, v. 19, p. 18-28.
- Williams, J.G., 2006. Central Valley salmon: A perspective on Chinook and steelhead in the Central Valley of California: San Francisco Estuary and Watershed Science, v. 4, p. 1-398.
- Yoshiyama, R.M., Fisher, F.W., and P.B. Moyle, 1998. Historical abundance and decline of Chinook salmon in the Central Valley region of California: North American Journal of Fisheries Management, v. 18, p. 487-521.

2010 Contributing Authors and Reviewers

MIKE ABILOULI, MARK HOLDERMAN, ANGELA LLABON, SHELIA GREENE and KEVIN CLARK
California Department of Water Resources, Bay-Delta Unit, Sacramento

MICHAEL ARCHER
MBK Engineers, Sacramento

PATRICIA BRANDES, MICHAEL MARSHALL, DAVID LaPLANTE, KEN NICHOLS, and RON STONE
U.S. Fish and Wildlife Service, Stockton/Anderson

MARK BOWEN and RAY BARK
U S Bureau of Reclamation Technical Service Center, Denver

RANDI FIELD and ELIZABETH KITECK
U S Bureau of Reclamation, Mid-Pacific Office, Sacramento

ANDREA FULLER, CHRISSEY SONKE and JASON GUIGNARD
FISHBIO Environmental, LLC, Oakdale

CHARLES HANSON and NATALIE STAUFFER
Hanson Environmental, Inc., Walnut Creek

DENNIS WESTCOT
San Joaquin River Group Authority, Modesto/Davis

STEVE TSAO, JENNIFER O'BRIEN and TIM HEYNE
California Department of Fish and Game, Merced/Fresno

REBECCA BUCHANAN and JOHN SKALSKI
Columbia Basin Research Group, University of Washington, Seattle

NOAH ADAMS and SCOTT BREWER
U.S. Geological Survey, Columbia River Research Laboratory, Cook, Washington

The entire VAMP team would like to extend our appreciation to the U.S. Bureau of Reclamation, the U.S. Fish and Wildlife Service, the California Department of Fish and Game and the California Department of Water Resources for the vast support they provided in implementing this experiment.

Signatories to the San Joaquin River Agreement

U.S. BUREAU OF RECLAMATION¹

U.S. FISH AND WILDLIFE SERVICE¹

CALIFORNIA DEPARTMENT OF WATER RESOURCES

CALIFORNIA DEPARTMENT OF FISH AND GAME¹

OAKDALE IRRIGATION DISTRICT^{1, 2}

SOUTH SAN JOAQUIN IRRIGATION DISTRICT^{1, 2}

MODESTO IRRIGATION DISTRICT^{1, 2}

TURLOCK IRRIGATION DISTRICT^{1, 2}

MERCED IRRIGATION DISTRICT^{1, 2}

SAN JOAQUIN RIVER EXCHANGE CONTRACTORS WATER AUTHORITY^{1, 2}

CENTRAL CALIFORNIA IRRIGATION DISTRICT

FIREBAUGH CANAL WATER DISTRICT

COLUMBIA CANAL COMPANY

SAL LUIS CANAL COMPANY

FRIANT WATER USERS AUTHORITY^{1, 2}

PUBLIC UTILITIES COMMISSION OF THE CITY AND COUNTY OF SAN FRANCISCO^{1, 2}

NATURAL HERITAGE INSTITUTE

METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

SAN LUIS AND DELTA-MENDOTA WATER AUTHORITY¹

SAN JOAQUIN RIVER GROUP AUTHORITY¹

¹ Signatory to the one-year extension of the agreement in 2010

² San Joaquin River Group Authority Members

Common Acronyms and Abbreviations

ADCP	Acoustic Doppler Current Meters	GPS	Global Positioning System
BAFF	Bio-Acoustic Fish Fence	HTI	Hydroacoustic Technology Inc
Bay-Delta	Sacramento and San Joaquin Rivers, San Francisco Bay Delta	HOR	Head of Old River
BCA	San Joaquin River near the Banta Carbona Intake Structure	HORB	Head of Old River Barrier
BO	Biological Opinion	ID	Irrigation District
CCF	Clifton Court Forebay	LED	Light Emitting Diode
CCFB	Clifton Court Forebay	MAL	Mallard Slough
CDEC	California Data Exchange Center	MeID	Merced Irrigation District
CDFG	California Department of Fish and Game	MFE	San Joaquin River at Medford Island, East Acoustic Receiver Location
CDRR	Combined Differential Recovery Rate	MFW	San Joaquin River at Medford Island, West Acoustic Receiver Location
CDRR	Cubic Feet Per Second	MID	Modesto Irrigation District
C16	San Joaquin River at Shipping Channel Marker C16 Acoustic Receiver Location	MR	Middle River
C18	San Joaquin River at Shipping Channel Marker C18 Acoustic Receiver Location	MRN	Middle River North Acoustic Receiver Location (2 Receivers)
CHPe	Chippis Island East Acoustic Receiver Location	MRND	Middle River North, Downstream Acoustic Receiver Location
CHPw	Chippis Island West Acoustic Receiver Location	MRNU	Middle River North, Upstream Acoustic Receiver Location
CNFHC	California/Nevada Fish Health Center	MRS	Middle River South Acoustic Receiver Location
CPUE	Catch Per Unit Effort	MRH	Merced River Fish Hatchery
CRR	Combined Recovery Rate	MSD	San Joaquin River at Mossdale
CRRL	Columbia River Research Laboratory	MOS	San Joaquin River at Mossdale Acoustic Receiver Location
CVP	Central Valley Project or Central Valley Project Trash Rack	MSL	Mean Sea Level
CVPTank	Central Valley Project Holding Tank	MST	Merced River at Stevinson
CVPIA	Central Valley Project Improvement Act	NEW	San Joaquin River at Newman
CWT	Coded Wire Tagged	NMFS	National Marine Fisheries Service
D-1641	Water Rights Decision 1641 of the SWRCB	NOAA	National Oceanic and Atmospheric Administration
DF	San Joaquin River at Durham Ferry - Acoustic Receiver Location	OHI	Head of Old River
DFG	California Department of Fish and Game	OID	Oakdale Irrigation District
DO	Dissolved Oxygen	OR	Old River
DWR	California Department of Water Resources	OR1/OR2	Old River at the junction with San Joaquin River (2 Receivers)
EPA	United States Environmental Protection Agency	ORN	Old River North Acoustic Receiver Location (2 Receivers)
FERC	Federal Energy Regulatory Commission	ORND	Old River North, Downstream Acoustic Receiver Location
FL	Fork Length		
GLC	Grant Line Canal		

ORNU	Old River North, Upstream Acoustic Receiver Location	SLDMWA	San Luis Delta Mendota Water Authority
ORS	Old River South Acoustic Receiver Location (2 Receivers)	SOP	Standard Operating Procedure
ORSD	Old River South, Downstream Acoustic Receiver Location	STK	San Joaquin River Near Stockton Acoustic Receiver Location
ORSU	Old River South, Upstream Acoustic Receiver Location	STN	San Joaquin River at Navy Bridge near Stockton Acoustic Receiver Location
ORT	Old River at Tracy	STP or SWWTP or SWWTF	Stockton Wastewater Treatment Plant / Facility
OSJ	North Old River	STS	San Joaquin River at USGS Gauge at Stockton
PKD	Proliferative Kidney Disease	SSJID	South San Joaquin Irrigation District
RGD	Radial Gates at Clifton Court Forebay, Interior Acoustic Receiver Location (2 Receivers)	SWC	State Water Contractors
RGU	Radial Gates at Clifton Court Forebay, Entrance Channel Acoustic Receiver Location	SWP	State Water Project
RM	River Mile	SWRCB	State Water Resources Control Board
RPA	Reasonable and Prudent Alternatives	TAN	Total Ammonia Nitrogen
RST	Rotary Screw Trap	TBP	Temporary Barriers Project
SDIP	South Delta Improvement Project	TCN/TCS	San Joaquin River at Turner Cut Acoustic Receiver Location (2 Receivers)
SDWA	South Delta Water Agency	TFCF	Tracy Fish Collection Facility
SEI	Sucrose-EDTA-Imidazole	TID	Turlock Irrigation District
SJ1/SJ2	San Joaquin River at Lathrop Acoustic Receiver Location (2 Receivers)	TMN/TMS	Thremile Slough Acoustic Receiver Location (2 Receivers)
SJL	San Joaquin River at Lathrop	TRN	Turner Cut
SJR	San Joaquin River	USACE	United States Army Corps of Engineers
SJT	San Joaquin River at Channel Markers 16 & 18	USB	Universal Serial Bus
SJRA	San Joaquin River Agreement	USBR	United States Bureau of Reclamation
SJRECWA	San Joaquin River Exchange Contractors Water Authority	USFWS	United States Fish and Wildlife Service
SJRGGA	San Joaquin River Group Authority	USGS	United States Geological Survey
SJRATC	San Joaquin River Agreement Technical Committee	VAMP	Vernalis Adaptive Management Plan
SJRTC	San Joaquin River Agreement Technical Committee	VSN	Vernalis
		WBC	White Blood Cell
		WOMT	CALFED Water Operations Management Team
		WQCP	Water Quality Control Plan
		WWTP	Wastewater Treatment Plant

APPENDIX TABLE OF CONTENTS

APPENDIX A

Hydrology and Operational Plans

Section A-1	Daily Operation Plans (Tables 1-4)	124
Section A-2	Comparison of Real Time and Provisional Flows (Figures 1-7)	128

APPENDIX B

Historic Data

Figure 1	Storage Impacts, 2000-2010 at Lake McClure (Merced River)	133
Figure 2	Storage Impacts, 2000-2010 at Don Pedro Reservoir (Tuolumne River)	133
Figure 3	Flow Impacts on Merced River below Crocker-Huffman Dam, 2000-2010	134
Figure 4	Flow Impacts on Tuolumne River below LaGrange Dam, 2000-2010	134

APPENDIX C

Analysis of Reservoir Storage and Release for Years When Reservoir Refill Occurs With and Without D-1641

136

APPENDIX D

Analysis of Vernalis Water Quality and Goodwin Dam Releases to Stanislaus River During Reservoir Refill Periods

141

Appendix E

Standard Operating Procedure for Acoustic Tagging Used by the 2010 VAMP

146

APPENDIX F

Environmental Monitoring During VAMP (data)

Water Temperature Monitoring Locations	149
Water Temperature Monitoring Data Plots	150

APPENDIX G

Survival Model Parameters

Acronyms and Abbreviations Used in Appendix D.....	162
Survival Model Parameters for 2010 VAMP Chinook Salmon Survival Investigations.....	163

San Joaquin River Group Authority

P.O. Box 4060 • Modesto, CA 95352-4060 • (209) 526-7407 • fax (209) 526-7315

Modesto Irrigation District

Turlock Irrigation District

Oakdale Irrigation District

Merced Irrigation District

Friant Water Authority

City and County of San Francisco

South San Joaquin Irrigation District

San Joaquin River Exchange Contractors Water Authority

Web site: www.SJRG.org

