

2011 References Cited

- 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.
- 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., Rondorf, D.W., Evans, S.D., and J.E. Kelly, 1998a. 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., Rondorf, D.W., Evans, S.D., Kelly J.E., and R.W. Perry, 1998b. Effects of surgically and gastrically implanted radio transmitters on swimming performance and predator avoidance of juvenile Chinook salmon (*Oncorhynchus tshawytscha*). Canadian Journal of Fisheries and Aquatic Sciences, v. 55, p. 781-787.
- 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., 2000. 1999 South Delta Salmon Smolt Survival Studies. May 26, 2000. 32 pgs. Available from USFWS Stockton Office, 850 Guild Avenue, Suite 105, Lodi, CA.
- 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.
- Buchanan, R.A., Skalski, J. R. Brandes, P. L. and A. Fuller, 2013. Route use and survival of juvenile Chinook salmon through the San Joaquin River Delta. North American Journal of Fisheries Management, 33:1, p 216-229. Also published online at <http://dx.doi.org/10.1080/02755947.2012.728178>
- 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), 1995a. Temporary Barriers Project Fishery, Water Quality, and Vegetation Monitoring, 1994. Environmental Services Office, California Department of Water Resources. August 1995.
- California Department of Water Resources (DWR), 1995b. Comprehensive Monitoring Report for the Proposed Test Program for the Temporary Barriers Project, 1995. Resources Agency, California Department of Water Resources.

- California Department of Water Resources (DWR), 1997. Temporary Barriers Project Fishery, Water Quality, and Vegetation Monitoring, 1996. Environmental Services Office, California Department of Water Resources. August 1997.
- California Department of Water Resources (DWR), 1998. Temporary Barriers Project Fishery, Water Quality, and Vegetation Monitoring, 1997. Environmental Services Office, California Department of Water Resources. August 1998.
- California Department of Water Resources (DWR), 1999. South Delta Temporary Barriers Project, 1998 Fishery, Water Quality, and Vegetation Monitoring Report. Resources Agency, California Department of Water Resources. Memorandum Report. October 1999.
- California Department of Water Resources (DWR), 2001. South Delta Temporary Barriers Project, 1999 Fishery, Water Quality, and Vegetation Monitoring Report. Resources Agency, California Department of Water Resources. September 2001.
- California Department of Water Resources (DWR), 2003. South Delta Temporary Barriers Project, 2002 Fishery, Water Quality, and Vegetation Monitoring Report. South Delta Temporary Barriers Monitoring Report. Resources Agency, California Department of Water Resources. December 2003.
- California Department of Water Resources (DWR), 2011. Water Conditions in California, California Cooperative Snow Surveys Bulletin 120, Report 3, April 1, 2011.
- 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.
- Clark, K.W., 2010. 2011 Temporary Barriers Fish Monitoring Study Work Plan. California Department of Water Resources. November 2010. 25 pp.
- Clark, K., Clark, W., Bowen, M.D., Mayfield, R.B., Zehfuss, K.P., Taplin, J.D. and C.H. Hanson, 2009. Quantification of Pre-Screen Loss of Juvenile Steelhead within Clifton Court Forebay. Technical Report. California Department of Water Resources. Available at: http://baydeltaoffice.water.ca.gov/ndelta/fishery/documents/2009_clark_et_al_quantification_of_steelhead_pre-screen_loss.pdf
- 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* Richardson. *Journal of Fish Diseases* 10:435-444.
- Cowan, L., and C.J. Schwarz, 2005. Capture-recapture studies using radio telemetry with premature radio-tag failure: *Biometrics*, v. 61, p. 657-664.
- Dickerson, H.W. and D. L. Dawe. 1995. *Ichthyophthirius multifiliis* and *Cryptocaryon irritans* (Phylum Ciliophora). In: Woo PTK (ed) *Fish diseases and disorders*, Vol 1. Protozoan and metazoan infections. CAB International, Wallingford.
- 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.
- Fisheries Management Work Group (FMWG), 2010a. Fisheries Management Plan: a framework for adaptive management in the San Joaquin River Restoration Program, November 2010. San Joaquin River Restoration Program. 147 pp plus appendices.
- Fisheries Management Work Group (FMWG), 2010b. Fisheries Implementation Plan. Prepared for the San Joaquin River Restoration Program by the Fisheries Management Work Group. January 2010. San Joaquin River Restoration Program. 175 pp.
- Foot 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.
- Gingras, M., 1997. Mark/Recapture experiments at Clifton Court Forebay to estimate pre-screening loss to juvenile fishes: 1976-1993. Technical Report 55. Interagency Ecological Program (IEP).
- 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>).
- Hawkins, D. K., and T. P. Quinn, 1996. Critical Swimming Speed Velocity and Associated Morphology of Juvenile Coastal Cutthroat Trout (*Oncorhynchus clarki clarki*), Steelhead Trout (*Oncorhynchus mykiss*), and Their Hybrids. *Canadian Journal of Fisheries and Aquatic Sciences* 53: 1487 – 1496.
- 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, J.S. Foott, R. Rosemark and D. Manzer, 1985. Proliferative kidney disease (PKD) among salmonid fish in California, U.S.A.; a second look. *Bulletin of the European Association of Fish Pathologists*. 5:36-38.
- 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.
- Holbrook, C.M., R.W. Perry, P.L. Brandes, and N.S. Adams, 2013. Adjusting Survival Estimates for Premature Transmitter Failure: A Case Study from the Sacramento-San Joaquin Delta. *Environmental Biology of Fishes: Volume 96: 2-3*, pp 165-173. Also published online 26 April 2012 (DOI 10.1007/s10641-012-0016-3) 9 pages. Springer Netherlands.
- Humason G. L., 1979. *Animal Tissue Techniques*, 4th edition. W H Freeman and Co., San Francisco.
- Interagency Ecological Program (IEP), 1996. Newsletter of the Interagency Ecological Program, Volume 9, No. 4. Autumn 1996.
- Interagency Ecological Program (IEP), 1998. Newsletter of the Interagency Ecological Program, Volume 11, No. 1. Winter 1998. Pages 29 – 38.
- Interagency Ecological Program (IEP), 1999a. Results of the 1998 Complementary VAMP Salmon Smolt Survival Evaluation. Interagency Ecological Program for the Sacramento-San Joaquin Estuary. Vol 12, Number 1, Winter 1999, pp 49-56.
- Interagency Ecological Program (IEP), 1999b. Health Assessment of Merced River Fish Facility and Feather River Hatchery Juvenile Fall-run Chinook Salmon Released at Mossdale and CWT Fish Recovered at Chipps Island – 1998. Interagency Ecological Program for the Sacramento-San Joaquin Estuary. Vol 12, Number 1, Winter 1999, pp 34-36.
- Interagency Ecological Program (IEP), 1999c. Newsletter of the Interagency Ecological Program, Volume 12, No. 1. Winter 1999. Pages 49-56.
- Israel, J.A., 2011. OCAP RPA IV.2.2: Survival of Steelhead Smolts During Outmigration in the San Joaquin River and Delta. Study Plan for the Six-Year Study dated February 15, 2011. 34 pp.
- 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.

- Kjelson, M.A., P. F. Raquel and F.W. Fisher, 1982. Life History of fall-run juvenile Chinook salmon, *Oncorhynchus Tshawytscha*, in the Sacramento-San Joaquin Estuary, California. Pgs 393-411 in V.S. Kennedy, editor. Estuarine Comparisons. Academic Press, New York. (ISBN 0-12-404070-5)
- Kleinbaum, D.G., L.L. Kupper, and K.E. Muller, 1988. Applied Regression Analysis and other Multivariable Methods. PWS-KENT Publishing Company, Boston.
- 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 J.J. Anderson, 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., 1993. Methods for Nonlethal Gill Biopsy and Measurement of Na⁺, K⁺-ATPase Activity. Canadian Journal of Fisheries and Aquatic Sciences. 50: 656-658.
- 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., Shingles, A., and A. H. Taylor, 2003. "Sub-lethal plasma ammonia accumulation and the exercise performance of salmonids." Comparative Biochemistry and Physiology 135: 515-526.
- Miranda, J.B., Padilla, R., DuBois, J., Morinaka, J., and M. Horn, 2010. Release Site Predation Study. Technical Report. California Department of Water Resources. Available at: <http://baydeltaoffice.water.ca.gov/announcement/Element2FinalReport5-2010.pdf>
- 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.
- Myrick, C.A. and J.J. Cech, 2004. Temperature Effects on Juvenile Anadromous Salmonids in California's Central Valley: What Don't We Know? Reviews in Fish Biology and Fisheries 14:113-123.
- National Marine Fisheries Service (NMFS). 2008. Endangered Species Act Section 7 Consultation. Biological opinion on the temporary barriers program. National Marine Fisheries Service, Southwest Region. May 2008
- 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.

- Ng, C.L., Able, K.W., and T.M. Grothues, 2007. Habitat Use, Site Fidelity, and Movement of Adult Striped Bass in a Southern New Jersey Estuary Based on Mobile Acoustic Telemetry. *Transactions of the American Fisheries Society* 136:1344–1355.
- 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., 2011. FY2011 Technical Report: Health and Physiological Assessment of VAMP and SDTB 2011 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. U.S. Fish and Wildlife Service, California-Nevada Fish Health Center, Anderson, CA. (<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.
- National Oceanographic and Atmospheric Administration (NOAA), 2008. Fisheries Off West Coast States and in the Western Pacific: West Coast Salmon Fisheries; 2008 Management Measures and a Temporary Rule. 50 CFR Part 660, Docket No. 080428611-8612-01 RIN 0648-AW60. U.S. Federal Register/Vol. 73, No. 85/ Thursday, May 1, 2008/Rules and Regulations. Page 23974. Accessed on 1/8/13 at <http://www.pccouncil.org/wp-content/uploads/E8-9687.pdf>
- National Oceanographic and Atmospheric Administration (NOAA), 2009. Fisheries off West Coast States and in the Western Pacific: West Coast Salmon Fisheries; 2009 Management Measures. 50 CFR Part 660, Docket No. 090324366-9371-01 RIN 0648-AX81. U.S. Federal Register/Vol. 74, No. 85/ Tuesday, May 5, 2009/Rules and Regulations. Page 20613. Accessed on 1/8/13 at <http://www.pccouncil.org/wp-content/uploads/E9-10308.pdf>
- NRDC vs. Rodgers et al., 2006. Stipulation of the Settlement in *NRDC, et al., v. Kirk Rodgers, et al.* United States District Court, Eastern District of California. 80pp.
- NRDC vs. Kempthorne et al., 2007. Interim Remedial Order Following Summary Judgment and Evidentiary Hearing in *NRDC, et al., v. Kempthorne, et al.* Case 1:05-cv-01207-OWW-GSA. Document 560. Filed 12/14/2007. United States District Court, Eastern District of California. 11pp.
- Okamura B. and T.S. Wood, 2002. Bryozoans as hosts for *Tetracapsula bryosalmonae*, the PKX organism. *Journal of Fish Diseases* 2002, 25: 469-475.
- Perry, R. W., 2010. Survival and Migration Dynamics of Juvenile Chinook Salmon (*Oncorhynchus tshawytscha*) in the Sacramento-San Joaquin River Delta. Dissertation, University of Washington, Seattle, WA.
- 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.
- Pincock, D.C. 2008. False detections: what they are and how to remove them from detection data. VEMCO, Amirix System, Inc. Doc-004691-08. Halifax, Nova Scotia, Canada.
- RBI Inc, 2007. “Assessment of fish mortality observed in the San Joaquin River near Stockton in May 2007”.
- San Joaquin River Group Authority (SJRG), 1999. Summary Report for Meeting the Flow Objectives for the San Joaquin River Agreement. January 20,1999. 15 pages.

- San Joaquin River Group Authority (SJRGA), 2000. The San Joaquin River Agreement. July, 2000. 20 pages. Available :< <http://www.sjrg.org/technicalreport>>
- San Joaquin River Group Authority (SJRGA), 2001. 2000 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 Board. 84 p. Available at:< <http://www.sjrg.org/technicalreport>>
- San Joaquin River Group Authority (SJRGA), 2002. 2001 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 Board. 125 p. Available at:< <http://www.sjrg.org/technicalreport>>
- San Joaquin River Group Authority (SJRGA), 2003. 2002 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 Board. 119 p. Available at:< <http://www.sjrg.org/technicalreport>>
- San Joaquin River Group Authority (SJRGA), 2004. 2003 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 Board. 123 p. Available at:< <http://www.sjrg.org/technicalreport>>
- San Joaquin River Group Authority (SJRGA), 2005. 2004 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 Board. 131 p. Available at:< <http://www.sjrg.org/technicalreport>>
- San Joaquin River Group Authority (SJRGA), 2006. 2005 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 Board. 128 p. Available at:< <http://www.sjrg.org/technicalreport>>
- San Joaquin River Group Authority (SJRGA), 2007. 2006 Annual Technical Report: On Implementation 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 Board, 136 p. Available at:< <http://www.sjrg.org/technicalreport>>
- San Joaquin River Group Authority (SJRGA), 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 Board. 128 p. Available at:< <http://www.sjrg.org/technicalreport>>
- San Joaquin River Group Authority (SJRGA), 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 Board. 128 p. Available at:< <http://www.sjrg.org/technicalreport>>
- San Joaquin River Group Authority (SJRGA), 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 Board. 128 p. Available at:< <http://www.sjrg.org/technicalreport>>
- San Joaquin River Group Authority (SJRGA), 2011. 2010 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 Board. 128 p. Available at:< <http://www.sjrg.org/technicalreport>>
- San Joaquin River Restoration Program (SJRRP), 2010. 2009 San Joaquin River Restoration Program Restoration Administrator Annual Report, April 2010. 37 pp. available: http://www.restoresjr.net/flows/ATR/2011_ATR/2011DF_ATR_AppA_19-25.pdf
- 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.
- Stringfellow, W.T., 2012. Analysis of Variables Influencing Water Temperature in the San Joaquin River and Estuary. Report by the Ecological Engineering Research Program, University of the Pacific. October 2012.
- 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. 183-196.
- U.S. Environmental Protection Agency (US EPA), 2003. EPA Region 10 Guidance for Pacific Northwest State and Tribal Temperature Water Quality Standards, April 2003. Report No. EPA 910-B-03-002. U. S. EPA Region 10, Office of Water, Seattle, Washington. 57pp.
- United States Fish and Wildlife Service (USFWS), 1987. The Needs of Chinook Salmon, *Oncorhynchus tshawytsch*, in the Sacramento-San Joaquin Estuary. Exhibit 31 Entered by the U. S. Fish and Wildlife Service for the State Water Resources Control Board 1987 Water Quality/Water rights Proceedings on the San Francisco Bay/Sacramento-San Joaquin Delta. 1987. 179 pgs.
- USFWS and AFS-FHS (U.S. Fish and Wildlife Service and American Fisheries Society-Fish Health Section), 2010. 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, 2010 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. Available at: <http://www.sjrg.org/technicalreport/> (accessed 13 December 2011)
- 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. Available at: <http://www.sjrg.org/technicalreport/> (accessed 13 December 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.

Workman, M., 2011. San Joaquin River Restoration Program Final Annual Technical Report - Section 24.0 of Appendix A. Available at: http://www.restoresjr.net/flows/ATR/2011_ATR/2011DF_ATR_AppA_19-25.pdf

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.

Zar, J.H., 1999. Biostatistical Analysis, 4th Edition. 4th edition. Prentice Hall, Inc., Upper Saddle River, NJ.

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CALIFORNIA DEPARTMENT OF FISH AND GAME ¹

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WATER AUTHORITY ¹

SAN JOAQUIN RIVER GROUP AUTHORITY ¹

¹ Signatory to the one-year extension of the agreement in 2011

² San Joaquin River Group Authority Members

Common Acronyms and Abbreviations

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

OH1	Head of Old River	SJRGA	San Joaquin River Group Authority
OID	Oakdale Irrigation District	SJRRP	San Joaquin River Restoration Program
OR	Old River	SJRATC	San Joaquin River Agreement Technical Committee
OR1/OR2	Old River at the junction with San Joaquin River (2 Receivers)	SJRTC	San Joaquin River Agreement Technical Committee
ORN	Old River North Acoustic Receiver Location (2 Receivers)	SLDMWA	San Luis Delta Mendota Water Authority
ORND	Old River North, Downstream Acoustic Receiver Location	SOP	Standard Operating Procedure
ORNU	Old River North, Upstream Acoustic Receiver Location	STK	San Joaquin River Near Stockton Acoustic Receiver Location
ORS	Old River South Acoustic Receiver Location (2 Receivers)	STN	San Joaquin River at Navy Bridge near Stockton Acoustic Receiver Location
ORSD	Old River South, Downstream Acoustic Receiver Location	STP or SWWTP or SWWTF	Stockton Wastewater Treatment Plant / Facility
ORSU	Old River South, Upstream Acoustic Receiver Location	STS	San Joaquin River at USGS Gauge at Stockton
ORT	Old River at Tracy	SSJID	South San Joaquin Irrigation District
OSJ	North Old River	SWC	State Water Contractors
PKD	Proliferative Kidney Disease	SWP	State Water Project
RAT	Raw Acoustic Telemetry	SWRCB	State Water Resources Control Board
RGD	Radial Gates at Clifton Court Forebay, Interior Acoustic Receiver Location (2 Receivers)	TAN	Total Ammonia Nitrogen
RGU	Radial Gates at Clifton Court Forebay, Entrance Channel Acoustic Receiver Location	TBP	Temporary Barriers Project
RM	River Mile	TCN/TCS	San Joaquin River at Turner Cut Acoustic Receiver Location (2 Receivers)
RMS	Root Mean Square	TFCF	Tracy Fish Collection Facility
RPA	Reasonable and Prudent Alternatives	TID	Turlock Irrigation District
RST	Rotary Screw Trap	TMN/TMS	Threemile Slough Acoustic Receiver Location (2 Receivers)
SDIP	South Delta Improvement Project	TRN	Turner Cut
SDWA	South Delta Water Agency	USACE	United States Army Corps of Engineers
SEI	Sucrose-EDTA-Imidazole	USB	Universal Serial Bus
SJ1/SJ2	San Joaquin River at Lathrop Acoustic Receiver Location (2 Receivers)	USBR	United States Bureau of Reclamation
SJL	San Joaquin River at Lathrop	USFWS	United States Fish and Wildlife Service
SJR	San Joaquin River	USGS	United States Geological Survey
SJT	San Joaquin River at Channel Markers 16 & 18	VAMP	Vernalis Adaptive Management Plan
SJRA	San Joaquin River Agreement	VNS	Vernalis
SJRECWA	San Joaquin River Exchange Contractors Water Authority	WBC	White Blood Cell
		WOMT	CALFED Water Operations Management Team
		WQCP	Water Quality Control Plan
		WWTP	Wastewater Treatment Plant

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