Robin S. Waples

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Affiliate Professor
School of Aquatic and Fishery Sciences
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Education

Yale University	American Studies	B.A. 1969
Scripps Institution of Oceanography	Marine Biology	Ph.D. 1986

Professional Employment

2001-:	Senior Scientist, Northwest Fisheries Science Center (NWFSC), Seattle
1997-2000:	Director, Conservation Biology Division, NWFSC
1991-1997:	Manager, Conservation Biology Project/Program, NWFSC
1987-1991:	Geneticist, NWFSC
1986-1987:	National Research Council Research Associate, NWFSC
1985-1986:	Biology Instructor, University of San Diego

Professional Activities and Responsibilities Include:

Chair, NMFS Biological Review Teams for Endangered Species Act (ESA) evaluations, 1990-2003 (these teams provided the scientific basis for all ESA listing determinations for Pacific salmon)

Scientific Lead, ESA recovery planning for West Coast salmon, 1999-2003 (oversight for scientific aspects of ESA recovery planning in Washington, Oregon, Idaho, and California)

NMFS Biological Review Teams for green sea turtles (2012-2014); SE Alaska Herring (2008, 2013); Puget Sound marine fish (2000, 2005, 2008, 2016); Puget Sound killer whales (2001-02; 2004)

Marine Fishes Specialist Committee, Committee on the Status of Endangered Wildlife in Canada (COSEWIC), 2001–2009 (these committees provide the scientific basis for endangered species listing determinations in Canada)

Independent Scientific Panels to review scientific whaling: Western North Pacific (Yokohama, Japan, 2009); Iceland (Reykjavik, 2013); Antarctica (Tokyo, Japan, 2014 & 2015)

IUCN Species Specialist Group for salmon, 2002–; IUCN Conservation Genetics SG 2014-

Chair, Technical Committee, Western Alaska Salmon Stock Identification Program, 2008-2013

Steering Committee, Fishery-independent estimate of spawning biomass of southern Bluefin tuna through identification of close kin using genetic markers. CSIRO, Australia, 2008-2012

Steering Committee, FishPopTrace, a large, EU-funded study that used genomics techniques to trace fish products to population of origin, 2007-2012.

Editorial Activities

Conservation Biology, Associate Editor, 1998-2022; *Conservation Genetics*, Associate Editor, 1999-2007; Editorial Board 2007-present; *Journal of Heredity*, Associate Editor, 2008-present

Guest Editor for: Special Issue, 9 papers from 2014 AGA Presidential Symposium, *J. Heredity*, January 2016; Special Section, Climate Change and the U.S. Endangered Species Act, *Conservation Biology*, December 2013; Virtual Issue, 25 Years of Papers on Conservation Genetics, *Conservation Biology*, March 2012; Special Issue, *Fish and Fisheries*, December 2008; Special Issue, *Evolutionary Applications*, May 2008. (* = co-editor)

Synergistic Activities Include:

Director, NWFSC Internal Grants Program, 2000–2015 (provided over $2.4M in competitive seed-money grants, esp. for career development of junior scientists)

Chair (with Jeff Hutchings of Dalhousie University), Workgroup on Redflags and Extinction Risk, National Center for Ecological Analysis and Synthesis, Santa Barbara, CA 2010-2013

Chair (with Daniel Schindler of U. Washington), Workgroup on Pacific Salmon and Climate Change, National Center for Ecological Analysis and Synthesis, Santa Barbara, CA 2007-2010

Instructor, Short Courses in Conservation Genetics Data Analysis (Denmark 2003; Italy 2005; France 2006; Portugal 2006-2008; Montana USA 2007-2023)--these courses target advanced graduate students and postdocs and included lectures and hands-on computer data analysis

Affiliate Professor, School of Aquatic and Fishery Sciences, U. Washington, 1991- present

Visiting scientist: U. Montana (2004); UC Berkeley (2004); Université Joseph Fourier, Grenoble, France (2003-2004); CSIRO, Hobart, Tasmania (2017)

Conferences/Symposia/Workshops Organized: *American Genetic Association Presidential Symposium*, June 2014, Seattle, WA; American Society of Ichthyologists and Herpetologists, Vancouver, B.C., August 2012; *Six Decades of Fishery Genetics*, Seattle, WA, September 2007; *Evolutionary Responses of Salmon to Anthropogenic Changes to Their Ecosystems*, Seattle, WA, December 2006; *Evolutionarily Significant Units and Artificial Propagation*, Seattle, WA, March 2005; *Evolutionary Ecology of Pacific Salmon,* Society of Conservation Biology, Missoula MT, June 2000; *Genetic Effects of Straying of Non-Native Hatchery Fish into Natural Populations*, Seattle, WA, June 1997; *Application of DNA Technology to the Management of Pacific Salmon*, Seattle, WA, March 1993.

Honors and Awards (* = shared award):

Molecular Ecology Prize 2018

Barrett-Hamilton Memorial Lecture, University of Manitoba, January 2017

JW Jones Memorial Lecture, Fisheries Society of the British Isles, July 2001 and July 2016

Thomson Reuters Highly Cited Researcher 2015,2016,2017,2018 (http://hcr.stateofinnovation.thomsonreuters.com/)

Elected to the American Fisheries Society, Genetics Section Hall of Excellence, 2015

Elected to Washington State Academy of Sciences, 2014

Elected President, American Genetic Association, 2014 term

Society for Conservation Biology, Edward T. LaRoe III Memorial Award, 2013 (For being a leader in translating principles of conservation biology into real-world conservation)

American Fisheries Society, William Ricker Fishery Conservation Award, 2008 (For significantly advancing aquatic resource conservation at the national/international level)

NOAA Distinguished Career Award, 2008 (For groundbreaking applied research in the field of conservation genetics that greatly advanced protection of genetic diversity in marine organisms)

Department of Commerce Silver Medal, 1999 (For innovative scientific leadership in advancing the implementation of the Endangered Species Act by introducing new science-based processes)*

NOAA Administrator's Award, 1992 (For outstanding contributions toward developing a policy to define species of Pacific salmon under the Endangered Species Act)

NOAA Bronze Medals, 1996 (For resolving a long-term US vs Oregon dispute and providing a framework for the Columbia River Basin co-managers to cooperate on wild stock supplementation)*; 2003 (For developing an innovative, state-of-the-art technical foundation for effective conservation and recovery of Pacific salmon in four Western states)*; 2003 (For completing the first comprehensive status review of the southern resident killer whale population under the Endangered Species Act)*

Opponent for Doctoral Dissertations: Sweden (1995), Ireland (2009), Norway (2011, 2012, 2017), Denmark (2012)

Research interests

Over 4+ decades, my research interests have ranged from ichthyology, identification of cryptic species, population and conservation genetics, genetic mixture analysis, endangered species, climate change, life-history evolution, and the genetic consequences of artificial propagation. Most of my research has involved salmon or marine fish, but I have also published on cetaceans, walrus, red wolves and black bears, birds, and plants. Recuring themes have included: adapting evolutionary theory to account for life histories of real species; developing and applying scientifically-based criteria for conserving at-risk species; disentangling population genetic structure in high gene-flow species; understanding and estimating effective population size in natural populations; and evaluating adaptive responses by species to anthropogenic changes to their ecosystems. Recent work has focused on evolutionary demography in age-structured species, especially the distribution of variation in offspring number, which is the driver of two of the four evolutionary forces: genetic drift and natural selection.

Peer-Reviewed Publications

Waples, R.S. 2024. Practical application of the linkage disequilibrium method for estimating contemporary effective population size: a review. Molecular Ecology Resources 24:e13879 (DOI: 10.1111/1755-0998.13879).

Allendorf, F.W., Ryman, N. and Waples, R.S., 2023. In Memoriam: Fred M. Utter, a founder of fisheries genetics. *Journal of Heredity*, p.esad028.

Gargiulo, R., Waples, R.S., Grow, A., Shefferson, R., Viruel, J., Fay, M. and Kull, T. 2023. Effective population size in partially clonal plants is not predicted by the number of genetic individuals. Evolutionary Applications 16:750-766.

Reed, TE, ME Visser, and RS Waples. 2023. The opportunity for selection: an important but slippery concept in ecology and evolution. Journal of Animal Ecology 92:7-15.

Waples, R.S. 2023. Robustness of Hill's overlapping-generation method for calculating N_e to extreme patterns of reproductive success. Heredity 131(2):170-177.

Waples, RS. 2023. Partitioning variance in reproductive success, within years and across lifetimes. Ecology and Evolution *13*, e10647 (https://doi.org/10.1002/ece3.10647).

Waples, RS, and TE Reed. 2023. Null models for the Opportunity for Selection. American Naturalist 201:779-793.

Ardren, WR, GR Jordan, PW DeHaan, and RS Waples. 2022. Demographic and evolutionary history of pallid and shovelnose sturgeon in the Upper Missouri River. Journal of Fish and Wildlife Management 13(1):124-143.

Waples, RS. 2022. *THEWEIGHT*: A simple and flexible algorithm for simulating non-ideal, age-structured populations. Methods in Ecology and Evolution 13:2030-2041.

Waples, RS. 2022. What is N_e, anyway? Journal of Heredity 113:371-379.

Waples, RS, and P Feutry. 2022. Close-kin methods to estimate census size and effective population size. Fish and Fisheries 23:273-293; DOI: 10.1111/faf.12615).

Waples, RS, and 19 coauthors. 2022. Implications of large-effect loci for conservation: a review and case study with Pacific salmon. Journal of Heredity 113:121-144 (doi.org/10.1093/jhered/esab069).

Waples, R.S., Waples, R.K., and Ward, E.J., 2022. Pseudoreplication in genomics-scale datasets. Molecular Ecology Resources 22:503-518.

Luikart, G., T. Antao, B.K. Hand, C.C. Muhlfeld, M.C. Boyer, T. Cosart, B. Trethewey, R. Al-Chockhachy, R.S. Waples. 2021. Detecting population declines via estimating the effective number of breeders (N_b). *Molecular Ecology Resources* 21:379-393.

Olah G, Stojanovic D, Webb M, Waples RS, Heinsohn R. 2021. Comparison of three techniques for genetic estimation of effective population size in a critically endangered parrot. Animal Conservation 24:491-498.

Schweizer, R.M., Saarman, N., Ramstad, K.M., Forester, B.R., Kelley, J.L., Hand, B.K., Malison, R.L., Ackiss, A.S., Watsa, M., Nelson, T.C., Beja-Pereira, A., Waples, R.S., Funk, W.C., and Luikart, G. 2021. Big data in conservation genomics: boosting skills, hedging bets, and staying current in the field. *Journal of Heredity* 112:313-327.

Waples, RS. 2021. Relative precision of the sibship and LD methods for estimating effective population size with genomics-scale datasets. Journal of Heredity 112:535:539 DOI: 10.1093/jhered/esab042.

Antao T, T Cosart, B Trethewey, RS Waples, M Ackerman, G Luikart, and BK Hand. 2020. *AgeStrucNb*: software for simulating and detecting changes in the effective number of breeders (N_b). Journal of Heredity 111:491-497.

Waples, R.S. 2020. An estimator of the Opportunity for Selection that is independent of mean fitness. Evolution 74:1942-1953 (doi: 10.1111/evo.14061)

Waples, RS. 2020. Serendipity and me. ICES J. Mar. Sci. 77:1658-1665.

Waples RS, KA Naish, CR Primmer. 2020. Conservation and management of salmon in the age of genomics. Annual Review of Animal Biosciences 8:117-143.

Crandall, ED, and coauthors. 2019. The molecular biogeography of the Indo-Pacific: testing hypotheses with multispecies genetic patterns. Global Ecology and Biogeography 28(7):943-960 (authorship as a member of the Diversity of the Indo-Pacific Network).

Kitada S, K Nakajima, K Hamasaki, H Shishidou, RS Waples, and H Kishino. 2019. Rigorous monitoring of a largescale marine stock enhancement program demonstrates the need for comprehensive management of fisheries and nursery habitat. Scientific Reports 9:5290.

Lehnert, SJ, T Kess, P Bentzen, MP Kent, S Lien, J Gilbey, M Clément, NW Jeffrey, RS Waples, and IR Bradbury. 2019. Genomic signatures and correlates of widespread population declines in salmon. Nature Communications 10:2996 (doi: 10.1038/s41467-019-10972).

Marandel F, Lorance P, Berthelé O, Trenkel VM, Waples RS, Lamy JB. 2019. Estimating effective population size of large fish populations, is it feasible? Fish and Fisheries 20:189-198.

Moran, BM, K Hench, RS Waples, MC Höppner, CC Baldwin, O McMillan, O Puebla. 2019. The evolution of microendemism in a reef fish (*Hypoplectrus maya*). Molecular Ecology 28:2872-2885 https://doi.org/10.1111/mec.15110).

Yang, L, ML Baskett, and RS Waples. 2019. Life history and temporal variability of escape events interactively determine the fitness consequences of aquaculture escapees on wild populations. Theoretical Population Biology 129:93-102. doi.org/10.1016/j.tpb.2018.12.006.

Hendricks, S., E.C. Anderson, T. Antao, L. Bernatchez, B.R. Forester, B. Garner, B.K. Hand, P.A. Hohenlohe, M. Kardos, B. Koop, A. Sethuraman, R. S. Waples, G. Luikart. 2018. Recent advances in population genomics data analysis. Evolutionary Applications 11:1197-1211.

Milligan BG, FI Archer, A-L Ferchaud, BK Hand, EM Kierepka, and RS Waples. 2018. Disentangling genetic structure for genetic monitoring of complex populations. Evolutionary Applications 11:1149-1161.

Waples, RS. 2018. Null alleles and F_{IS}×F_{ST} correlations. Journal of Heredity 109:457-461.

Waples RS, Grewe PG, Bravington MV, Hillary R, Feutry P. 2018. Robust estimates of a high N_e/N ratio in a top marine predator, southern bluefin tuna. Science Advances 4:eaar7759.

Waples RS, R Kays, R Fredrickson, K Pacifici, and LS Mills. 2018. Is the red wolf a listable unit under the U.S. Endangered Species Act? Journal of Heredity 109:585-597.

Waples, R.S., and S. T. Lindley. 2018. Genomics and conservation units: The genetic basis of adult migration timing in Pacific salmonids. Evolutionary Applications 11:1518-1526 (doi: 10.1111/eva.12687).

Waples RS, S Mariani, and C. Benvenuto. 2018. Consequences of sex change for effective population size. Proc Royal Soc. London, B, 285:20181702. doi.org/10.1098/rspb.2018.1702

Waples RS, Scribner K, Moore J, Draheim H, Etter D, Boersen, M. 2018. Accounting for age structure and spatial structure in eco-evolutionary analyses of a large, mobile vertebrate. Journal of Heredity 109:709-723 (doi.org/10.1093/jhered/esy018).

Waples, R. S., A. R. Hoelzel, O. E. Gaggiotti, R. Tiedemann, P. Palsboll, F. Cipriano, J. A. Jackson, J. W. Bickham, A. R. Lang. 2018. Guidelines for genetic data analysis. Journal of Cetacean Research and Management 18:33-80.

Ackerman, MW, BK Hand, RK Waples, G Luikart, RS Waples, C Steele, BA Garner, J McCane, and M Campbell. 2017. Effective number of breeders from sibship reconstruction: empirical evaluations using hatchery steelhead. Evolutionary Applications 10:146-160 (DOI: 10.1111/eva.12433.)

Boyd C, DeMaster DP, Waples RS, Ward EJ, Taylor BL. 2017. Consistent extinction risk assessment for marine species under the U.S. Endangered Species Act. Conservation Letters 10:328-336 (doi: 10.1111/conl.12269).

Fung, HC, and RS Waples. 2017. Performance of IUCN proxies for generation length. Conservation Biology 31:883-893 (DOI: 10.1111/cobi.12901).

Hamner RH, R Constantine, R Mattlin, RS Waples, and CS Baker. 2017. Genotype-based estimates of local abundance and effective population size for Hector's dolphins. Biological Conservation 211:150-160.

Silber GK, M Lettrich, PO Thomas, J Baker, M Baumgartner, EA Becker, P Boveng, D Dick, J Fiechter, J Forcada, KA Forney, R Griffis, J Hare, A Hobday, D Howell, K Laidre, N Mantua, L Quakenbush, JA Santora, P Spencer, K Stafford, C Stock, W Sydeman, K Van Houtan, and RS Waples. 2017. Projecting marine mammal distribution in a changing climate. Frontiers in Marine Science 4:413. doi:10.3389/fmars.2017.00413.

Wade, A.A., B.K. Hand, R.P. Kovach, C.C. Muhlfeld, R.S. Waples, and G. Luikart. 2017. Assessments of species' vulnerability to climate change: from pseudo to science. Biodiversity and Conservation 26:223-229 (DOI: 10.1007/s10531-016-1232-5).

Waples, R.S., and E.C. Anderson. 2017. Purging putative siblings from population genetic datasets: A cautionary view. Molecular Ecology 26:1211-1224 (DOI: 10.1111/mec.14022).

Waples, R.S., A. Elz, B.D. Arnsberg, J.R. Faulkner, J.J. Hard, E. Timmins-Schiffman, L.K. Park. 2017. Human-mediated evolution in a threatened species? Juvenile life-history changes in Snake River salmon. Evolutionary Applications 10:667-681; DOI: 10.1111/eva.12468.

Audzijonyte, A, Fulton, E, Haddon, M, Helidoniotis F, Hobday AJ, Kuparinen A, Morrongiello J, Smith ADM, Upston J, and Waples, RS. 2016. Trends and management implications of human-induced life-history changes in marine ectotherms. Fish and Fisheries 17:1005-1028 DOI: 10.1111/faf.12156.

Busch, D. S., R. Griffis, J. S. Link, K. Abrams, J. Baker, R. E. Brainard, M. Ford, J. A. Hare, A. Himes-Cornell, A. Hollowed, N. Mantua, S. McClatchie, M. M. McClure, M. W. Nelson, K. Osgood, M. B. Rust, V. Saba, M. Sigler, S. Sykora-Bodie, C. L. Toole, E. Thunberg, R. S. Waples, R. Merrick. 2016. Climate Science Strategy of the US National Marine Fisheries Service. Marine Policy 74:58-67.

Coscia I, Chopelet J, Waples RS, Mann B, and Mariani S. 2016. Sex change and effective population size: implications for population genetic studies in marine fish. Heredity 117:251-258; doi:10.1038/hdy.2016.50.

Epifanio, J., and R.S. Waples. 2016. Artificial propagation of freshwater fishes: benefits and risks to recipient ecosystems from stocking, translocation, and re-introduction. Pp 399-436 in: Conservation of Freshwater Fishes. G. Closs, M. Krkosek, and J. Olden, eds. Cambridge University Press, UK.

Kuparinen A, Hutchings J, and Waples RS. 2016. Harvest-induced evolution and effective population size. Evolutionary Applications 9:658-672 (doi:10.1111/eva.12373).

Waples RK, Larson WA, and Waples RS. 2016. Estimating contemporary effective population size in non-model species using linkage disequilibrium across thousands of loci. Heredity 117:233-240; doi:10.1038/hdy.2016.60

Waples, R.S. 2016. Making sense of genetic estimates of effective population size. Molecular Ecology 25:4689-4691 (Invited Perspective).

Waples, R.S. 2016. Life history traits and effective population size in species with overlapping generations revisited: the importance of adult mortality. Heredity 117:241-250;

doi:10.1038/hdy.2016.29.
Waples, R.S. 2016. Tiny estimates of the N_e/N ratio in marine fishes: Are they real? J Fish Biology 89:2479-2504; doi 10.1111/jfb.13143.
Waples, R.S., and Audzijonyte, A. 2016. Fishery-induced evolution provides insights into adaptive responses of marine species to climate change. Frontiers in Ecology and the Environment 14:217-224.
Waples, R.S., K. Hindar, S. Karlsson, and J. J. Hard. 2106. Evaluating the Ryman-Laikre effect for marine stock enhancement and aquaculture. Current Zoology 62:617-627 (doi: 10.1093/cz/zow060).
Fisch, K.M., C.C. Kozfkay, J.A. Ivy, O.A. Ryder, and R.S. Waples. 2015. Fish hatchery genetic management techniques: integrating theory with implementation. N. Am. J. Aquaculture 77:343-357 (DOI: 10.1080/15222055.2014.999846).
Keith, D.M., H.R. Akcakaya, S.H.M. Butchart, B. Collen, N.K. Dulvy, E.E. Holmes, J.A. Hutchings, D. Keinath, M.K. Schwartz, A.O. Shelton, and R.S. Waples. 2015. Temporal correlations in population trends: Conservation implications from time-series analysis of diverse animal taxa. Biological Conservation 192:247-257.
Mantua, N.J., L.G. Crozier, T.E. Reed, D.E. Schindler, and R.S. Waples. 2015. Response of chinook salmon to climate change. Nature Climate Change 5:613-615 (commentary).
Shelton, A. O., J. A. Hutchings, R. S. Waples, D. M. Keith, and H. R. Akçakaya. 2015. Maternal age effects on Atlantic cod recruitment and implications for future population trajectories. ICES Journal of Marine Science 72:1769-1778 (doi: 10.1093/icesjms/fsv058).
Waples, R.S. 2015. Testing for Hardy-Weinberg proportions: Have we lost the plot? Journal of Heredity 106:1-19 (doi: 10.1093/jhered/esu062).
Waples RS, Adams PB, Bohnsack J, Taylor BL. 2015. When is a species threatened or endangered in "all or a significant portion of its range"? Endangered Species Research 27:189-192.
Waters, CD, JJ Hard, MSO Brieuc, DE Fast, KI Warheit, RS Waples, CM Knudsen, WJ. Bosch, and KA Naish. 2015. Effectiveness of managed gene flow in reducing genetic divergence associated with captive breeding. Evolutionary Applications 8:956-971 (doi:10.1111/eva.12331).
Do, C., R.S. Waples, D. Peel, G.M. Macbeth, B.J. Tillet, and J.R. Ovenden. 2014. NeEstimator V2: re-implementation of software for the estimation of contemporary effective population size (Ne) from genetic data. Molecular Ecology Resources 14:209-214 (DOI: 10.1111/1755-0998.12157).
Landguth, E.L., C.C. Muhlfeld, R.S. Waples, L. Jones, D. Whited, W.H. Lowe, J. Lucotch, H. Neville, and G. Luikart. 2014. Combining demographic and genetic factors to assess population vulnerability in stream species. Ecological Applications 24:1505-1524.
Waples, R.S., T. Antao, and G. Luikart. 2014. Effects of overlapping generations on linkage disequilibrium estimates of effective population size. Genetics 197:769-780.
Waples, R.S., and T. Antao. 2014. Intermittent breeding and constraints on litter size: consequences for effective population size per generation (N_e) and per reproductive cycle (N_b). Evolution 68:1722-1734 (doi:10.1111/evo.12384).
Baskett, M.L., S.C. Burgess, R.S. Waples. 2013. Assessing strategies to minimize unintended fitness consequences of aquaculture on wild populations. Evolutionary Applications 6:1090-1108 (DOI: 10.1111/eva.12089).
Baskett, M.L., and R.S. Waples. 2013. Minimizing unintended fitness consequences of cultured individuals on wild populations: keep them similar or make them different? Conservation Biology 27:83-94 (DOI: 10.1111/j.1523-1739.2012.01949.x).
Burgess, S.C., R.S. Waples, and M.L. Baskett. 2013. Local adaptation when competition depends on phenotypic similarity. Evolution 67:3012-3022 (doi:10.1111/evo.12176).
Neel, M.C., K.S. McKelvey, N. Ryman, M.W. Lloyd, R. Short Bull, F.W. Allendorf, and M.K. Schwartz, and R.S. Waples. 2013. Estimation of effective population size in continuously distributed populations: There goes the neighborhood. Heredity 111:189–199 (doi:10.1038/hdy.2013.37).

Peel, D., R.S. Waples, G.M. Macbeth, C. Do, and J.R. Ovenden. 2013. Accounting for missing data in genetic effective population size (N_e) estimation. Molecular Ecology Resources 13:243-253 (doi: 10.1111/1755-0998.12049).

Petrou, E.L., L. Hauser, R.S. Waples, J.E. Seeb, W.D. Templin, D. Gomez-Uchida, and L.W. Seeb. 2013. Secondary contact and changes in coastal habitat availability influence the nonequilibrium population structure of a salmonid (*Oncorhynchus keta*). Molecular Ecology 22:5848-5860 (doi: 10.1111/mec.12543).

Van Doornik, D.M., D.L. Eddy, R.S. Waples, S.J. Boe, T. Hoffnagle, E.A. Berntson, and P. Moran. 2013. Genetic monitoring of threatened Chinook salmon populations: Estimating introgression of non-native hatchery stocks and temporal genetic changes. North American Journal of Fisheries Management 33:693-706. (DOI: 10.1080/02755947.2013.790861).

Waples, R.S., G. Luikart, J.R. Faulkner, D.A. Tallmon. 2013. Simple life history traits explain key effective population size ratios across diverse taxa. Proc. Royal Society London, Ser. B. 280: 20131339 (doi: 10.1098/rspb.2013.1339).

Waples, R.S., M. Nammack, J.F. Cochrane, and J.A. Hutchings. 2013. A tale of two Acts: Endangered species listing practices in Canada and the United States. Bioscience 63(9):723-734.

Christie, M.R., M.L. Marine, R.A. French, R.S. Waples, and M.S. Blouin. 2012. Effective size of a wild salmonid population is greatly reduced by hatchery supplementation. Heredity 109:254-260 (doi:10.1038/hdy.2012.39).

Hutchings, J.A., S.H.M. Butchart, B. Collen, M.K. Schwartz, and R.S. Waples. 2012. Red Flags: Correlates of impaired species recovery. Trends in Ecology and Evolution 27:542-546 (DOI 10.1016/j.tree.2012.06.005).

Kalinowski, S.T, D.M. Van Doornik, C.C. Kozfkay, and R.S. Waples. 2012. Genetic diversity in the Snake River sockeye salmon captive broodstock program as estimated from broodstock records. Conservation Genetics 13:1183-1193 (DOI 10.1007/s10592-012-0363-9).

Nielsen, E.E., A. Cariani, E. Mac Aoidh, G.E. Maes, I. Milano, R. Ogden, M. Taylor, J. Hemmer-Hansen, M. Babbucci, L. Bargelloni, D. Bekkevold, E. Diopere, L. Grenfell, S. Helyar, M.T. Limborg, J.T. Martinsohn, R. McEwing, F. Panitz, T. Patarnello, F. Tinti, J.K.J. Van Houdt, F.A.M. Volckaert, R.S. Waples, FishPopTrace consortium & G.R. Carvalho. 2012. Gene-associated markers provide tools for tackling illegal fishing and false eco-certification. Nature Communications **3,** 851 (2012). https://doi.org/10.1038/ncomms1845

Tallmon, D.A, R.S. Waples, D. Gregovich, and M.K. Schwartz. 2012. Detecting population recovery using gametic disequilibrium-based effective population size estimates. Conservation Genetics Resources 4:987-989 (DOI 10.1007/s12686-012-9689-3).

Vrijenhoek, R.C., and R.S. Waples. 2012. Popular misconceptions (invited Perspective). Molecular Ecology 21:4155-4156.

Hare, M., L. Nunney, M.K. Schwartz, D.E. Ruzzante, M. Burford, R.S. Waples, K. Ruegg, and F. Palstra. 2011. Understanding and estimating effective population size for practical application in marine conservation and management. Conservation Biology 25:438-449.

Israel, J.A., K.M. Fisch, T.F. Turner, and R.S. Waples. 2011. Conservation of native fishes of the San Francisco Estuary: Considerations for artificial propagation of Chinook salmon, delta smelt, and green sturgeon. San Francisco Estuary and Watershed Science 9(1). Retrieved from: http://escholarship.ucop.edu/uc/item/9r80d47p.

Martinsohn, J.T., A.J. Geffen, G.E. Maes, E.E. Nielsen, R. Ogden, R.S. Waples, and G.R. Carvalho. 2011. Tracing fish and fish products from ocean to fork using advanced molecular technologies. Pp. 259-282 In: Food chain integrity: a holistic approach to food traceability, safety, quality, and authenticity (edited by J. Hoorfar, K. Jordan, F. Butler, and R. Prugger). Woodhead Publishing Ltd., Cambridge, U.K.

Reed, T.E., D.E. Schindler, M.J. Hague, D.A. Patterson, E. Meir, R.S. Waples, and S.G. Hinch. 2011. Time to evolve? Potential evolutionary responses of Fraser River sockeye salmon to climate change and effects on persistence. PLoS ONE 6(6): e20380. doi:10.1371/journal.pone.0020380.

Reed, T.E., D.E. Schindler, and R.S. Waples. 2011. Interacting effects of phenotypic plasticity and evolution on population persistence in a changing climate. Conservation Biology 25:56-63.
Van Doornik, D.M., R.S. Waples, M.C. Baird, P. Moran, and E.A. Berntson. 2011. Genetic monitoring reveals genetic stability within and among threatened Chinook salmon populations in the Salmon River, Idaho. North American Journal of Fishery Management 31:96-105.
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