

Appendix B. *Abbreviations and Acronyms*

The following abbreviations and acronyms are encountered frequently in AFS publications. Unless indicated otherwise, they should be spelled out in full at first use.

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| AAAS | American Association for the Advancement of Science |
| Ab | antibody |
| ACE | Army Corps of Engineers |
| ACR | acute–chronic ratio |
| ACS | American Chemical Society (Washington, D.C.) |
| ACSIRO | Australia Commonwealth Scientific and Industrial Research Organisation |
| ADCP | Aquaculture Development and Coordination Programme (FAO) |
| ADF&G | Alaska Department of Fish and Game (ADFG also acceptable) |
| AEC | Atomic Energy Commission (became ERDA in 1977) |
| AFA | (1) Anadromous Fish Act; (2) a fixative consisting of acetic acid, formalin, and alcohol |
| AFCA | Anadromous Fish Conservation Act (see Fisheries 12(6):7–9) |
| AFTA | American Factory Trawlers Association (Seattle) |
| AGU | American Geophysical Union |
| AI | artificial intelligence |
| AIBS | American Institute of Biological Sciences |
| AICHE | American Institute of Chemical Engineers |
| AID | Agency for International Development (U.S.) |
| AIFRB | American Institute of Fishery Research Biologists |
| ALS | American Littoral Society |
| A&M | e.g., Texas A&M University (<i>not</i> “A and M”) |
| ANC | acid-neutralizing capacity |
| ANCOVA | analysis (<i>or</i> analyses) of covariance |
| ANL | Argonne National Laboratory (Argonne, Illinois) |
| ANODEV | analysis (<i>or</i> analyses) of deviance |
| ANOVA | analysis (<i>or</i> analyses) of variance |
| AOAC | Association of Official Analytical Chemists (Arlington, Virginia) |
| AOSERP | Alberta Oil Sands Environmental Research Program |
| APHA | American Public Health Association (Washington, D.C.) |
| APHIS | Animal and Plant Health Inspection Service (USDA) |
| API | (1) American Petroleum Institute; (2) Analytical Profile Index System (as in “API20E test strips”; standard notation, <i>no need to spell out</i>) |
| APL | (1) A Programming Language (<i>never spelled out</i> but should be identified as a computer language); (2) Applied Physics Laboratory (Laurel, Maryland) |
| ARC | Aquaculture Research Center (Norwegian; as in “Nutreco ARC”) |
| ARMA | autoregressive moving average |
| ARS | Agricultural Research Service (USDA) |
| A/S | Aksje Selskap (Norwegian equivalent of “Inc.”; <i>do not spell out</i>) |
| ASB | Association of Southeastern Biologists |
| ASCE | (1) American Society of Civil Engineers; (2) American Society of Chemical Engineers |
| ASCII | American Standard Code for Information Interchange (in Webster’s, <i>no need to spell out</i>) |
| ASI | American Sportfishing Institute |
| asl | above sea level |
| ASME | American Society of Mechanical Engineers |

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| ASMFC | Atlantic States Marine Fisheries Commission (Washington, D.C.) |
| ASPP | American Society of Plant Pathologists |
| ASTM | American Society for Testing and Materials (Philadelphia) |
| ASW | artificial seawater |
| ATCC | American Type Culture Collection (acronym used in the codes that designate cell lines) |
| ATP | adenosine triphosphate (in Webster's, <i>no need to define/spell out</i>) |
| AWG | American wire gage |
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| b | base (usually used with a prefix to denote thousands of bases, i.e., kb; see bp) |
| BALB/c | strain of mouse (standard notation, <i>no need to spell out</i>) |
| BaP | benzo[<i>a</i>]pyrene |
| BARD | Binational Agricultural Research and Development |
| BASIC | Beginners All-Purpose Symbolic Instruction Code (in Webster's, <i>do not spell out</i>) |
| B.A.S.S. | Bass Anglers Sportsman Society |
| BB | brown bullhead (a cell line) |
| BBL | Baltimore Biological Laboratories |
| BCWD | bacterial cold-water disease |
| BHI | brain–heart infusion |
| BHIA | brain–heart infusion agar |
| BIA | Bureau of Indian Affairs (USDI) |
| BKD | bacterial kidney disease |
| BLM | Bureau of Land Management (USDI) |
| BMDP | Biomedical Programs (statistical software package published by the University of California Press) |
| BOD | biochemical oxygen demand |
| BOR | Bureau of Reclamation (USDI) |
| bp | base pair; a paired purine and pyrimidine in double-stranded DNA |
| BP | before present (radio carbon dating present = 1950) |
| B.P. | Boite Postale (French equivalent of “Post Office Box”) |
| BPA | Bonneville Power Administration (USDOE, Portland, Oregon) |
| BRD | Biological Resources Division (research arm of USGS) |
| BSA | bovine serum albumin |
| BSS | balanced salt solution (see HBSS) |
| BST | British summer time |
| BVET | basinwide visual estimation technique (see Dolloff et al., <i>NAJFM</i> 17(2)) |
| | |
| CAD | computer-aided design |
| CAFIR | Comité d'Attribution des Fonds Internes de Recherche |
| CAFSAAC | Canadian Atlantic Fisheries Scientific Advisory Committee (Dartmouth or Halifax, Nova Scotia) |
| CalCOFI | California Cooperative Oceanic Fisheries Investigations |
| CBE | Council of Biological Editors |
| CBG | C-bands treated with barium hydroxide and stained with Giemsa (e.g., “CBG-banded chromosomes”) |
| CBI | Chesapeake Bay Institute (Baltimore) |
| CBL | Chesapeake Biological Laboratory |
| CCAMLR | Commission for the Conservation of Antarctic Marine Living Resources |
| CCL | certified cell line (a designation of the American Type Culture Collection indicating a cell line that has been better studied and characterized than one designated CRL) |
| CCV | channel catfish virus |
| cdf | cumulative density function (see pdf) |
| CECPI | Commission Européenne Consultative pour les Pêches dans les Eaux Intérieures (FAO; see also EIFAC) |
| Cedex | Courrier d'Entreprise à Distribution Exceptionnelle (basically a P.O. Box for businesses; <i>do not spell out</i>) |

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| CEMAGREF | Centre d'Etude du Machinisme Agricole, du Rural, des Eaux et Forêts (Bordeaux, France) |
| CEMF | counter electromotive force (a voltage) |
| CEQ | Council on Environmental Quality (U.S.) |
| CERF | Coastal Education and Research Foundation (Charlottesville, Virginia) |
| CFA | complete Freund's adjuvant |
| CFI | Council of Forest Industries (Vancouver, Canada) |
| CFU | colony-forming unit (see PFU) |
| CGPM | Conseil Général des Pêches pour la Méditerranée (FAO; see also GFCM) |
| CHH | chum salmon heart (a cell line) |
| CHSE | chinook salmon embryo (a cell line) |
| CI | confidence interval |
| CICESE | Centro de Investigación Científica y de Educación Superior de Ensenada (Baja California) |
| CICTUS | Center of Scientific and Technological Research of the University of Sonora |
| CIE | counterimmunoelectrophoresis |
| CIEM | Conseil International pour l'Exploration de la Mer (Charlottenlund, Denmark; see also ICES) |
| CIFA | Committee for Inland Fisheries of Africa (a committee in the Fisheries Division of FAO; also CPCA) |
| CIMAS | Cooperative Institute for Marine and Atmospheric Studies (Rosenstiel School of Marine and Atmospheric Sciences, University of Miami) |
| CISTI | Canada Institute for Scientific and Technical Information |
| CITES | Convention on International Trade in Endangered Species (of Wild Fauna and Flora) |
| CJFAS | Canadian Journal of Fisheries and Aquatic Sciences |
| CL | (1) certified line (a variant of CCL); (2) confidence limit |
| CMFRI | Central Marine Fisheries Research Institute (Ernakulum, Cochin, India) |
| CMOS | complementary-metal-oxide semiconductor |
| CNEXO | Centre National pour l'Exploitation des Océans (Paris; see IFREMER) |
| CNRS | Centre National de la Recherche Scientifique |
| COD | chemical oxygen demand |
| COE | Corps of Engineers (U.S. Army) |
| COLS | corrected ordinary least squares |
| COPESCAL | Comisión de Pesca Continental para América Latina (FAO) |
| COPRAQ | Cooperative Programme of Research in Aquaculture |
| CORR | correlation procedure (SAS statistical procedure) |
| C.P. | (1) Casier postal (French for "postal drawer"; <i>do not spell out</i>) (2) Código postal (Spanish for "postal code"; <i>do not spell out</i>) |
| CPCA | Comité des Pêches Continentales pour l'Afrique (FAO; also CIFA) |
| CPE | (1) catch per effort (can also stand for "catch per unit [of] effort"); (2) cytopathic effect |
| CPUE | catch per unit (of) effort |
| CR | Carrier Route (in address) |
| CRD | Coastal Resource Division (NMFS) |
| CREES | Cooperative Research, Education, and Extension Service (USDA; see CSREES) |
| CRL | cell repository line (designation of the American Type Culture Collection; see CCL) |
| cRNA | complementary RNA |
| CRSP | Cooperative Research Support Program (Pond Dynamics Aquaculture) |
| CSE | coho salmon embryo (a cell line) |
| CSIC | Consejo Superior de Investigaciones Científicas |
| CSIR | Council of Scientific and Industrial Research (New Delhi, India) |
| CSIRO | Commonwealth Scientific and Industrial Research Organization (often preceded by the first letter of a country; see ACSIRO) |
| CSREES | Cooperative State Research, Education, and Extension Service (USDA) |
| CSRS | Cooperative State Research Service (under Science and Education in USDA) |
| CT | buffer system of Clayton and Tretiah (1972) |
| CTAB | hexadecyltrimethylammonium bromide (used in the process of extracting mtDNA; entered as centrimonium bromide in Merck, but accept the more common alternative name) |

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| CTM | critical thermal maximum (does not require further definition in Abstract but needs explanation in Methods; see UILT) |
| CV | coefficient of variation (must be defined; usually $100 \times SD/\text{mean}$ but sometimes $100 \times SE/\text{mean}$) |
| Da | dalton (unit of molecular mass; often kDa [1 Da = 1 g/Avogadro's number]; note: no units if molecular <i>weight</i>) |
| DAPI | 4',6-diamidino-2-phenylindole (a stain) |
| DBA | dot blot analysis (<i>or</i> assay) |
| DDBA | direct dot blot assay |
| DDE | 1,1-dichloro-2,2-bis(<i>p</i> -chlorophenyl)ethane (in Webster's, <i>no need to spell out</i>); also known as DDD (dichlorodiphenyldichloroethane, which is in Webster's), <i>p,p'</i> -DDD, and TDE (tetrachlorodiphenylethane) |
| DEA | Department of External Affairs (Canada) |
| DEAE | diethylaminoethanol (often used in descriptions of column chromatography; e.g., "DEAE-cellulose") |
| DEC | Department of Environmental Conservation (an agency of several states, e.g., "NYDEC") |
| DEMR | Department of Energy, Mines, and Resources (Canada) |
| Dep. | (definition unknown; essential part of some Norwegian addresses) |
| DFO | Department of Fisheries and Oceans (Canada) |
| DGICYT | Dirección General de Investigación Científica y Técnica (Spain) |
| DIC | disseminated intravascular coagulation |
| DIG | digoxigenin |
| DMSO | dimethyl sulfoxide (in Webster's, <i>no need to spell out</i>) |
| DNase | sometimes DNAase: deoxynuclease (in Webster's, <i>no need to spell out</i>) |
| dNTP | deoxynucleotide triphosphate |
| DO | dissolved oxygen |
| DOC | (1) Department of Commerce (U.S.); (2) Department of Conservation (an agency of several states) |
| DOE | Department of Energy (U.S.) |
| DORM | dogfish reference material (for trace elements) |
| DPD | diethylphenylenediamine |
| DPST | double-pole single-throw switch |
| DSARMA | deseasonalized ARMA |
| EC | (1) emulsifiable concentrate; (2) European Commission |
| ECP | extracellular product(s) |
| EDF | European Development Fund |
| EDTA | ethylenediaminetetraacetic acid (in Webster's, <i>no need to spell out</i>) |
| E_i | Ivlev's electivity index |
| EIBS | erythrocytic inclusion body syndrome |
| EIFAC | European Inland Fishery Advisory Commission (FAO; see also CECPI) |
| EIS | environmental impact statement |
| ELIFA | enzyme-linked immunofiltration assay |
| ELISA | enzyme-linked immunosorbent assay |
| EMAP | Environmental Monitoring and Assessment Program (EPA) |
| EMEM | Eagle's minimum essential medium |
| EMF | electromotive force |
| EMI | electromagnetic interference |
| EMSL | Environmental Monitoring Systems Laboratory (EPA) |
| EN-SO | El Niño-Southern Oscillation |
| ENV | erythrocytic necrosis virus |
| EPA | Environmental Protection Agency (U.S. and some state governments; acceptable with full identification) |

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| EPC | epithelioma papillosum cyprini (cell line derived from an epithelial tumor of common carp) |
| EPRI | Electric Power Research Institute (Palo Alto, California) |
| EPSCoR | Experimental Program to Stimulate Competitive Research (NSF) |
| ERDA | Energy Research and Development Administration (DOE) |
| ERM | enteric redmouth (disease) |
| EROD | 7-ethoxyresorufin- <i>O</i> -deethylase |
| ESU | evolutionarily significant unit |
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| F | filial generation (on AFS symbols list; <i>does not need definition</i>) |
| <i>F</i> | instantaneous fishing mortality |
| $F_{0.1}$ | (a) fishing mortality at which yield per recruit is 10% less than its value at F_{MAX} ; (b) fishing mortality at which the slope of the yield-per-recruit curve is 10% of the value at zero fishing mortality; (c) fishing mortality at which the marginal increase in yield from adding one more unit of fishing effort is 10% of the increase in yield from adding the same unit of effort in the very lightly exploited fishery; (d) fishing mortality at which the marginal increase in total yield is one-tenth the original catch per unit effort (all of these definitions are equivalent) |
| F_{MAX} | (a) fishing mortality at which the yield-per-recruit curve has its maximum; or equivalently (b) fishing mortality below which growth overfishing is prevented |
| FAA | formol–acetic acid–alcohol |
| Fab | fragment, antigen-binding arm (the region or fragment [either of two] of an IgG molecule that contains the antigen-combining site |
| F(ab) ₂ | fragment of an IgG molecule that contains both Fab regions and the hinge region connecting them |
| FAME | fatty acid methyl ester |
| FAO | Food and Agriculture Organization of the United Nations (Rome) |
| FASEB | Federation of American Societies for Experimental Biology (Bethesda, Maryland) |
| FAT | fluorescent antibody technique (also see MF-FAT) |
| FCA | Freund’s complete adjuvant (see FIA) |
| FCAR | Fonds pour la Formation de Chercheurs de l’Aide à la Recherche |
| FCMA | Fishery Conservation and Management Act (Public Law 94-265 of 1976; see MFCMA) |
| FDA | Food and Drug Administration (U.S.) |
| FDP | fibrin degradation products |
| FEBS | Federation of European Biochemical Societies |
| FEMAT | Forest Ecosystem Management Assessment Team (representatives of USFS, BLM, USFWS, NPS, EPA, and NMFS; studies problems of Pacific Northwest forests) |
| FERC | Federal Energy Regulation Commission (DOE) |
| FERIC | Forest Engineering Research Institute of Canada |
| FET | field-effect transistors |
| FFA | filtration–fluorescent antibody (a staining method) |
| FFI | Fish Farming International |
| FHM | fathead minnow (a cell line) |
| FIA | Freund’s incomplete adjuvant |
| FITC | fluorescein isothiocyanate |
| FL | fork length (fish length from snout to the cleft of a forked caudal fin) |
| FMC | Fishery Management Council |
| FONDE | |
| PESCA | Fondo Nacional para el Desarrollo de la Pesca (Mexico) |
| FORTAN | <i>formula translation (or Fortran; in Webster’s, no need to spell out)</i> |
| FRBC | Fisheries Research Board of Canada |
| FRED | Fisheries Rehabilitation, Enhancement, and Development (ADF&G) |
| FSH | follicle-stimulating hormone |
| FTU | formazin turbidity unit |

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| <i>g</i> | gravity or acceleration due to gravity (e.g., “5,000 × <i>g</i> ”; spelled out unless used more than once) |
| G ₀ | cell-cycle phase consisting of the period of quiescence after cell division |
| G ₁ | cell-cycle phase consisting of the “preparatory” period before DNA synthesis |
| G ₂ | cell-cycle phase consisting of the period after DNA synthesis and before cell division |
| G _i | inhibiting form of trimenic G proteins (as used in <i>JAAH</i> 8:10) |
| GENBANK | a genetics database of the National Center for Biotechnology Information at the National Library of Medicine, National Institutes of Health, Bethesda, Maryland (<i>no need to define in JAAH</i>) |
| GFCM | General Fisheries Council for the Mediterranean (FAO; see CGPM) |
| GFDL | Geophysical Fluid Dynamics Laboratory (Princeton University; acronym is applied to a general circulation climate model developed at the laboratory) |
| GH | growth hormone |
| GIS | geographical information systems |
| GISS | Goddard Institute for Space Sciences (acronym is applied to a general circulation climate model developed at NASA Goddard Space Flight Center, Greenbelt, Maryland) |
| GLC | (1) gas–liquid chromatography; (2) Great Lakes Commission (Ann Arbor, Michigan) |
| GLFC | Great Lakes Fishery Commission (Ann Arbor, Michigan) |
| GLIM | general(ized) linear interactive model |
| GLM | general(ized) linear model (acronym of SAS Institute) |
| GLP | good laboratory practice |
| GLPS | good laboratory practice standards |
| GLRC | Great Lakes Research Consortium |
| GLS | generalized least squares |
| GmbH | German equivalent of “Co.” or “Corp.” |
| GMFMC | Gulf of Mexico Fishery Management Council (Tampa, Florida) |
| GnRH | gonadotropin-releasing hormone; synonym of LHRH |
| GPC | Government Printing Centre (Canada) |
| GPO | (1) Government Printing Office (Washington, D.C.); (2) General Post Office (in Australian addresses) |
| GPS | Global Positioning System |
| GRAS | generally recognized as safe (FDA registration standard) |
| GSI | gonadosomatic index (calculated by dividing the weight of reproductive tissue by the total body weight) |
| GSMFC | Gulf States Marine Fisheries Commission (Ocean Springs, Mississippi) |
| GtH | gonadotropic hormone |
| H&E | hematoxylin and eosin (a group of stains; equivalent to HE) |
| HAT | hypoxanthine, aminopterin, and thymidine (a tissue culture medium) |
| Hb | hemoglobin |
| HBSS | Hanks’ balanced salt solution (= physiological saline) |
| HCG | human chorionic gonadotropin |
| HCP | health and condition profile (e.g., Goede and Barton in AFS Symposium 8) |
| HCR | Highway Contract Route (in addresses, e.g., “HCR-7, Box 27”; <i>do not spell out</i>) |
| Hct | hematocrit |
| HE | hematoxylin–eosin (a group of stains; equivalent to H&E) |
| HEPES | <i>N</i> -(2-hydroxyethyl)-1-piperazineethanesulfonic acid (a buffer; primary entry in the Merck Index, <i>no need to spell out</i>) |
| HPI axis | hypothalamic–pituitary–interrenal axis |
| HPLC | high-performance liquid chromatography |
| HRP | horseradish peroxidase |
| HSD | honestly significantly different (<i>also</i> , honestly significant difference test) |
| HUFA | highly unsaturated fatty acid |

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| IAEA | International Atomic Energy Agency (Vienna) |
| IAFWA | International Association of Fish and Wildlife Agencies |
| IAM | Institute of Applied Microbiology (University of Tokyo) |
| IATTC | Inter-American Tropical Tuna Commission (Scripps Institution of Oceanography, La Jolla, California) |
| IBI | index of biotic integrity |
| IBP | International Biological Programme |
| IC | integrated circuit |
| ICCAT | International Commission for the Conservation of Atlantic Tunas |
| ICES | International Council for the Exploration of the Sea (see also CIEM) |
| ICLARM | International Center for Living Aquatic Resources Management (Manila, Philippines) |
| ICNAF | International Commission for the Northwest Atlantic Fisheries (now defunct; replaced by NAFO) |
| ICP | inductively coupled argon plasma emission spectrometry |
| ICPRB | Interstate Commission on the Potomac River Basin |
| ICU | international chick units (used with vitamin dosages) |
| ID | inside diameter |
| IDBA | indirect dot blot assay |
| IDRC | International Development Research Centre (Ottawa, Canada) |
| IEEE | Institute of Electrical and Electronics Engineers |
| IFAT | indirect fluorescent antibody test (or technique) |
| IFIM | instream flow incremental methodology |
| IFR | instream flow recommendation |
| IFRDC | Institut Français de Recherche Scientifique pour le Developpement en Cooperation |
| IFREMER | Institut Français de Recherche pour l'Exploitation de la Mer (Paris [also Nantes], France) |
| IFS | International Foundation for Science (Stockholm, Sweden) |
| IgA | immunoglobulin A (other immunoglobulins: IgD, IgE, IgG, and IgM) |
| IGFA | International Game Fish Association |
| IHHNV | infectious hypodermal and hematopoietic necrosis virus (<i>or</i> IHHN virus) |
| IHNV | infectious hematopoietic necrosis virus (<i>or</i> IHN virus) |
| IJC | International Joint Commission (Washington, D.C.) |
| ILT | incipient lethal temperature |
| INAD | investigational new animal drug (a type of FDA permit) |
| INPFC | International North Pacific Fisheries Commission (Vancouver, British Columbia) |
| INRA | Institut National de la Recherche Agronomique (several locations in France and its former colonies) |
| INRAT | (<i>or</i> I.N.R.A.T.) Institut National de la Recherche Agronomique Tunisia (Arabia) |
| I-O | input-output (a type of economic analysis) |
| IOC | Intergovernmental Oceanographic Commission |
| ip | intraperitoneal(ly) (sometimes IP or i.p.) |
| IPFC | Indo-Pacific Fisheries Commission (FAO) |
| IPHC | International Pacific Halibut Commission (Seattle) |
| IPNV | infectious pancreatic necrosis virus (<i>or</i> IPN virus) |
| IPSFC | International Pacific Salmon Fisheries Commission |
| IPTP | Indo-Pacific Tuna Development and Management Programme |
| IRI | index of relative importance |
| ISACF | International Society of Arctic Char Fanatics (published in Drottningholm, Sweden) |
| ISH | in situ hybridization |
| ISO | International Organization for Standardization (Geneva, Switzerland) |
| IWC | International Whaling Commission (Cambridge, UK) |
| JEM | a company name (now JEOL, Ltd., Peabody, Massachusetts) |
| JFRBC | Journal of the Fisheries Research Board of Canada (became CJFAS in 1980) |
| JTU | Jackson turbidity units |

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| <i>K</i> | condition factor (generally $10^5 \times \text{weight/fork length}^3$) |
| K/A | alkaline/acid |
| kDa | kilodaltons |
| KDM | kidney disease medium |
| K1K | walking catfish kidney (a cell line) |
| LC50 | concentration that is lethal to 50% of test organisms in a specified time (usually 96 h; different mortality criteria and time periods are possible) |
| LD50 | dose that is lethal to 50% of test organisms in a specified time |
| LED | light-emitting diode |
| LGLFRO | Lower Great Lakes Fisheries Resources Office (USFWS) |
| LH | lutinizing hormone |
| LHRF | lutinizing hormone releasing factor (an acceptable synonym for LHRH) |
| LHRH | lutinizing hormone releasing hormone |
| LHRH-A | synthetic analogues of LHRH |
| LILT | lower incipient lethal temperature |
| LOEC | lowest-observed-effect concentration (see NOEC) |
| LPS | lipopolysaccharide |
| LSC | liquid scintillation count (counting) |
| LSD | least significant difference (<i>also</i> , least-significant-difference test) |
| LT50 | temperature that is lethal to 50% of test organisms (invariably refers to the upper temperature limit) |
| LWD | large woody debris (or lwd) |
| <i>M</i> | instantaneous natural mortality |
| M | cell-cycle phase consisting of the period of cell division |
| MAb | (<i>or</i> MoAb) monoclonal antibody |
| MAFF | Ministry of Agriculture, Fisheries, and Food (Great Britain) |
| MAFMC | Mid-Atlantic Fishery Management Council (Washington, D.C.) |
| MANOVA | multivariate ANOVA |
| MARFIN | Marine Fisheries Initiative Program (USDOC) |
| MARMAP | Marine Resources Monitoring, Assessment, and Prediction (a program of NMFS) |
| MATC | maximum acceptable toxicant concentration |
| MDS | a manufacturer's designation (<i>do not spell out</i>) |
| <i>m/e</i> | ratio of molecular mass (weight) to ionic charge (used in mass spectrometry; also denoted <i>m/z</i>) |
| MEH | mean erythrocytic hemoglobin |
| MEHC | mean erythrocytic hemoglobin content |
| MEI | morphoedaphic index |
| MEM | minimum essential medium |
| meq | milliequivalents (blood Na and K are often given as meq/L) |
| MEV | (1) mean erythrocyte volume; (2) million electron-volts |
| MFCMA | Magnuson Fishery Conservation and Management Act (see FCMA) |
| MF-FAT | membrane filtration-fluorescent antibody technique |
| mho | unit of conductance or conductivity (replaced by S [siemens] in the International System of Units) |
| MIC | minimum inhibitory concentration of a drug (e.g., MIC50 is the minimum concentration needed to inhibit the growth of cultured bacteria or other cells by 50%) |
| MICRA | Mississippi Interstate Cooperative Resource Association (Bettendorf, Iowa) |
| micron | micrometer (in Webster's, but not allowed in AFS style; <i>spell out or use</i> μm) |
| mil | nonmetric measure of thickness (1 mil = 0.001 in = 0.0254 mm; <i>not an abbreviation</i>) |
| MMC | Marine Mammal Commission (Washington, D.C.) |
| MNRM | (<i>or</i> M.N.R.M.) Master's of Natural Resource Management (use "master's thesis" in AFS references) |
| MOA | memorandum of agreement |

MoAb (or MAb) monoclonal antibody
 mos metallic-oxide semiconductor
 MOSFET metallic-oxide semiconductor field-effect transistor
 MOU memorandum of understanding
 mRNA messenger RNA
 MS mean square
 MS-222 tricaine methanesulfonate (proprietary name)
 MSE mean square(d) error (*not* “mean SE” or “mean² error”)
 MSH melanocyte-stimulating hormone (occurs in two forms: alpha- and beta-MSH)
 msl mean sea level
 MSY maximum sustainable yield
 mtDNA mitochondrial DNA
m/z see *m/e*

N normal (chemical term)
 NAD nicotinamide adenine dinucleotide (in Webster’s, *no need to spell out*)
 NADH reduced form of NAD (in Webster’s, *no need to spell out*)
 NADP (1) nicotinamide adenine dinucleotide phosphate (in Webster’s, *no need to spell out*);
 (2) National Atmospheric Deposition Program
 NADPH reduced form of NADP (in Webster’s, *no need to spell out*)
 NAFO North Atlantic Fisheries Organization (supercedes ICNAF; Dartmouth, Nova Scotia)
 NAPAP National Acid Precipitation Assessment Program
 NASCO North Atlantic Salmon Conservation Organization
 NAS–NAE National Academy of Sciences–National Academy of Engineering
 NBII national biological information infrastructure
 NBT nitro-blue tetrazolium
 NCASI National Council of the Paper Industry for Air and Stream Improvements (New York)
 NCMB National Collection of Marine Bacteria
 NCRAC North Central Regional Aquaculture Center
 NCSS a computer package
 NCTC National Collection of Type Cultures (now NTCC)
 NEAFC North-East Atlantic Fisheries Commission (London)
 NEFMC New England Fishery Management Council
 NEFSC Northeast Fisheries Science Center
 NERC Natural Environmental Research Council (UK)
 NF nombre fondamental (chromosome arm number)
 NFE nitrogen-free extract
 NFFR Norwegian Council of Fisheries Research
 NGVD National Geodetic Vertical Datum (see Kondolf, *TAFS* 125[6])
 NIEHS National Institutes of Environmental Health Services
 NIFI (*or* N.I.F.I.) National Inland Fisheries Institute (Fisheries Department, Bangkok, Thailand)
 NIH National Institutes of Health
 NINA Norwegian Institute for Nature Research
 NMFS National Marine Fisheries Service (NOAA)
 NOAA National Oceanic and Atmospheric Administration (USDOC)
 NOEC no-observed-effect concentration (see LOEC)
 NOS National Ocean Service (USDOC)
 NPS National Park Service (USDI)
 NRC (1) National Research Council (U.S.);
 (2) Nuclear Regulatory Commission (U.S.)
 NRCC National Research Council of Canada
 NRCS Natural Resources Conservation Service (USDA; formerly SCS)
 NRI National Research Initiative (USDA)
 NRICGP National Research Initiative Competitive Grants Program (USDA)

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| nRNA | nuclear RNA |
| NSERC | Natural Sciences and Engineering Research Council of Canada |
| NSF | National Science Foundation (U.S.) |
| NTCC | National Type Culture Collection (Rockville, Maryland) |
| NTIS | National Technical Information Service (Springfield, Virginia) |
| NTNF | Norwegian Council for Scientific and Industrial Research |
| NTU | nephelometric turbidity units |
| NWRI | National Water Research Institute |
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| OCS | outer continental shelf |
| OD | (1) optical density; (2) outside diameter |
| OECD | Organisation for Economic Cooperation and Development (Paris) |
| OIE | Office International des Epizooties (Paris) |
| OLS | ordinary least squares |
| OMNR | Ontario Ministry of Natural Resources |
| OMP | Oregon Moist Pellet (a feed; capitalized) |
| OPD | <i>o</i> -phenylenediamine (a substrate solution for ELISA) |
| ORNL | Oak Ridge National Laboratory |
| ORSTOM | (<i>or</i> O.R.S.T.O.M.) Office de la Recherche Scientifique et Technique Outre-Mer |
| OSY | optimum sustainable yield |
| OTC | oxytetracycline |
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| P-4501A | cytochrome P-4501A (an enzyme used to monitor exposure to petroleum products) |
| p.a. | pro analysis (a grade of chemicals, as in p.a. grade; standard notation; <i>no need to spell out</i>) |
| PAGE | polyacrylamide gel electrophoresis (see SDS) |
| PAH | polycyclic aromatic hydrocarbon |
| PAR | periodic autoregressive |
| PAS | periodic acid–Schiff (a stain) |
| PAUP | phylogenetic analysis using parsimony |
| PBS | phosphate-buffered saline |
| PC | polycarbonate |
| PCA | principal components analysis |
| PCO ₂ | (<i>or</i> <i>p</i> CO ₂) partial pressure of the gas CO ₂ (PCO ₂ preferred but <i>p</i> CO ₂ acceptable) |
| PCR | polymerase chain reaction |
| PDB | Pee Dee belemnite (isotopic standard for ¹³ C/ ¹² C ratio) |
| pdf | probability density function (<i>not</i> probability distribution function; see cdf) |
| PEG | polyethylene glycol |
| PERCIS | Percid International Symposium (published in JFRBC 34(10)) |
| PFA | perfluoroalkoxy (as in Teflon PFA pipe) |
| PFMC | Pacific Fishery Management Council |
| PFU | plaque-forming unit (see cfu) |
| PGD | (<i>or</i> PKX) proliferative gill disease |
| PHA | phytohemagglutinin (erythrocyte agglutinator and T cell mitogen) |
| PHABSIM | physical habitat simulation system (<i>no need to spell out</i>) |
| Pi | inorganic phosphate |
| pI | isoelectric point of a protein (i.e., the pH at which its net charge is 0) |
| PIPES | piperazine- <i>N,N</i> -bis-[2-ethanesulfonic acid] |
| PKX | see PGD |
| PIT | passive integrated transponder (may be used in title if defined in Abstract) |
| PMSF | phenylmethylsulfonyl-fluoride |
| PNFHPC | Pacific Northwest Fish Health Protection Committee |
| PO ₂ | (<i>or</i> <i>p</i> O ₂) partial pressure of oxygen gas (PO ₂ preferred but <i>p</i> O ₂ acceptable) |

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| PONAR | dredge used to sample sediments, especially in the Great Lakes region (does not need definition, but should be solid caps; letters stand for the surnames of the inventors) |
| POW | programmable output waveform (e.g., “POW backpack electroshocker [Smith-Root]”) |
| ppm | parts per million (not allowed in <i>TAFS</i> or <i>JAAH</i> ; <i>change to metric</i>) |
| pro | as in “pro analysis” (see p.a.) |
| PSC | Pacific Salmon Commission (Vancouver, British Columbia) |
| PSD | proportional stock density |
| PSMFC | Pacific States Marine Fisheries Commission (Portland, Oregon) |
| PUD | Public Utility District (unique to the State of Washington) |
| PUFA | polyunsaturated fatty acid |
| PVC | polyvinyl chloride |
| PVP | polyvinyl pyrrolidone |
| Q | discharge or flow of water; a subscript sometimes denotes the frequency of a particular discharge (e.g., Q_{50} denotes a 50-year flood, $Q_{2.33}$ a discharge that occurs every 2.33 years on the average) |
| Q_{10} | factor by which a physiological rate increases for a 10°C rise in temperature |
| RAPD | randomly amplified polymorphic DNA |
| RBC | (<i>or rbc</i>) red blood cell |
| REAP | Restriction Enzyme Analysis Package (a computer program) |
| RFLP | restriction fragment length polymorphism |
| RFMC | Regional Fishery Management Council |
| RIA | radioimmunoassay |
| RKM | (<i>or rkm</i>) river kilometer (usually refers to distance above the river’s mouth, but zero point should be defined) |
| RM | river mile (see RKM) |
| rms | root mean square |
| RNase | (<i>or RNAase</i>) ribonuclease (in Webster’s, <i>no need to spell out</i>) |
| RNRF | Renewable Natural Resources Foundation (Bethesda, Maryland) |
| RPMI | a type of complete medium (sometimes followed by a hyphen and number; e.g., “RPMI-1640”; stands for Rosswell Park Memorial Institute but is <i>never spelled out</i>) |
| RRET | representative reach extrapolation technique (see Dollof et al., <i>NAJFM</i> 17[2]) |
| rRNA | ribosomal RNA |
| RSD | relative stock density |
| RSL | buffer system of Ridgeway et al. 1970 (see reference in Kriegler et al., <i>NAJFM</i> 15(4)) |
| RSMAS | Rosenstiel School of Marine and Atmospheric Science (University of Miami) |
| RTH | rainbow trout hepatoma (a cell line) |
| RTLA | Registry of Tumors in Lower Animals |
| S | (1) cell-cycle phase consisting of the period of DNA synthesis; (2) Svedberg unit (used to denote sizes of RNA molecules, e.g., a 1S molecule has a sedimentation coefficient of 1×10^{-13} s and an 18S molecule has a coefficient of 18×10^{-13} s) |
| SAF | Society of American Foresters (Bethesda, Maryland) |
| SAFMC | South Atlantic Fishery Management Council (Charleston, South Carolina) |
| SAS | Statistical Analysis System (created by the SAS Institute, Cary, North Carolina) |
| SCOL | Salmonid Communities in Oligotrophic Lakes (symposium published in <i>JFRBC</i> 29[6]) |
| SCOPE | Scientific Committee on Problems of the Environment |
| SCS | Soil Conservation Service (USDA; now called NRCS) |
| SCSP | South China Sea Fisheries Development Coordinating Programme (FAO) |
| SD | standard deviation |
| SDA | specific dynamic action (the metabolic heat loss from the digestion and transformation of food, |

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| | measured in J/[kg × h]) |
| SDI | shoreline development index (ratio of shoreline length to the circumference of a circle with the same area as the water body) |
| SDS | sodium dodecyl sulfate (used in conjunction with polyacrylamide gel electrophoresis; sometimes denoted SDS–PAGE) |
| SE | standard error |
| SEAFDEC | Southeast Asian Fisheries Development Center (Bangkok, Thailand) |
| SEM | scanning electron microscope (<i>or</i> microscopy) |
| SETAC | Society of Environmental Toxicology and Chemistry |
| SFI | Sport Fishing Institute (Washington, D.C.; now part of ASI) |
| SFIA | Sea Fish Industry Authority (Hull, UK) |
| SGR | specific growth rate |
| SH | sulfhydryl |
| SIAM | Society for Industrial and Applied Mathematics (Philadelphia) |
| SIC | standard industrial classification |
| SINE | short interspersed repetitive DNA element (e.g., “ <i>Hpa</i> I SINE”) |
| S–K | Saltonstall–Kennedy (NMFS program that provides grants for marine research) |
| SL | standard length (fish length measured from snout to insertion of caudal fin rays on the last vertebra) |
| SNARL | Sierra Nevada Aquatic Research Laboratory (Mammoth Lakes, California) |
| SOPHEIA | solid-phase enzyme immunoassay, trademarked as a kit |
| sp. | species (plural: spp.; <i>no need to spell out</i>) |
| SP-4 | agar (standard notation, <i>no need to spell out</i>) |
| SPC | South Pacific Commission (Noumea, New Caledonia) |
| SPF | specific pathogen free |
| SPOF | Strategic Plan for Ontario Fisheries |
| spp. | species (plural of sp.) |
| SPSS | Statistical Package for the Social Sciences (McGraw-Hill) |
| SPST | single-pole single-throw (a kind of switch) |
| SRBC | sheep red blood cells |
| SRR | stock–recruit(ment) relationship |
| SS | sum of squares |
| SSC | standard sodium citrate (a solution of 150 mM NaCl and 15 mM sodium citrate that is often used to stabilize preparations for DNA analysis [the actual concentration of the solution is usually expressed as a multiple of the standard: 5× SSC, 0.1× SSC, etc.] |
| SSE | sockeye salmon embryo (a cell line) |
| ssp. | subspecies |
| SSP | Society for Scholarly Publishing |
| SST | sea surface temperature |
| STE | salt–tris–EDTA (a buffer) |
| SV | simian virus |
| | |
| T ₃ | triiodothyronine (a thyroid hormone) |
| T ₄ | thyroxine (a thyroid hormone) |
| T20 | Tween-20 |
| TAC | total allowable catch |
| TAE | tris–acetate–EDTA (a buffer) |
| TAN | total ammonia nitrogen |
| TAPPI | Technical Association of the Pulp and Paper Industry (Norcross, Georgia) |
| TBAR | thiobarbituric |
| TBE | tris–boric acid (borate)–EDTA (a buffer) |
| TCBS | thiosulphate–citrate–bile–sucrose |
| TCID50 | tissue culture infective dose of a cytopathogenic agent (virus) that produces a cytopathic effect in 50% of inoculated cultures (in <i>JAAH</i> , often “tissue culture infectious dose with 50% endpoint”) |

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| TDE | tetrachlorodiphenylethane (see DDE) |
| TDS | total dissolved solids |
| TE | tris-EDTA (a buffer) |
| TED | turtle excluder device |
| TEM | transmission electron microscope (<i>or</i> microscopy) |
| TFN | transfer-function noise (a model) |
| TINRO | Pacific Scientific Research Institute of Fisheries and Oceanography (Russia) |
| TL | total length (fish length measured from snout to tip of longest caudal fin ray) |
| TLC | thin-layer chromatography |
| TRLSC | time-resolved liquid scintillation count (counting) |
| tRNA | transfer RNA |
| TSB | trypticase soy broth <i>or</i> tryptic soy broth (<i>not</i> “soya”) |
| TSP | (<i>or</i> tsp) triple super phosphate |
| TTBS | tris-Tween buffered saline (a typical formulation: 50 mM tris, 0.9% NaCl, 0.1% Tween-20; final pH 7.2) |
| TVA | Tennessee Valley Authority |
| TVG | time-varied gain <i>or</i> time-varying gain (hydroacoustic term) |
| TYES | trypticase yeast extract agar + skim milk |
| | |
| U | unit (used chiefly for drugs or other pharmaceuticals) |
| UILT | upper incipient lethal temperature (see ctm) |
| UNDP | United Nations Development Programme (New York) |
| UNEP | United Nations Environment Programme (Nairobi, Kenya) |
| UNESCO | United Nations Educational, Scientific, and Cultural Organization |
| UPGMA | unweighted pair-group method with arithmetic averages |
| USACE | U.S. Army Corps of Engineers |
| USAID | U.S. Agency for International Development |
| USBLM | U.S. Bureau of Land Management |
| USDA | U.S. Department of Agriculture |
| USDA/NRI | U.S. Department of Agriculture, National Research Initiative |
| USDI | U.S. Department of the Interior |
| USDOC | U.S. Department of Commerce |
| USDOE | U.S. Department of Energy |
| USFS | U.S. Forest Service (USDA) |
| USFWS | U.S. Fish and Wildlife Service (USDI) |
| USGS | U.S. Geological Survey |
| USNM | U.S. National Museum |
| USP | U.S. Pharmacopeia <i>or</i> U.S. Pharmaceutical (grade; may need to add “units”) |
| | |
| VCR | video cassette recorder (in Webster’s, <i>no need to spell out</i>) |
| VEN | viral erythrocytic necrosis |
| VESO | Veterinaermedisink Senter for Oppdragvirksomhet (Norwegian for “veterinary contract research center”; <i>do not spell out</i>) |
| VHS | (1) viral hemorrhagic septicemia; (2) video home system |
| VHSV | viral hemorrhagic septicemia virus (also referred to as the Egtved virus) |
| VI | visual implant (type of tag) |
| VNIRO | a publishing company (Moscow) |
| VNTR | variable number of tandem repeats (refers to repeated sequences of DNA bases in a gene) |
| VOM | volt-ohm-milliammeter or voltohm milliammeter (a multimeter used to measure volts, ohms, and milliamperes) |
| VP | Voges-Proskauer test (APHA) |
| VPA | virtual population analysis |

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| v/v | (<i>or</i> v:v) volume per volume (mL/L; only used parenthetically) |
| WAS | World Aquaculture Society |
| WRI | Water Resources Research Institute |
| WSD | wholly significantly different (<i>or</i> , wholly significant difference test) |
| WTA | willingness to accept (compensation) |
| WTP | willingness to pay |
| w/v | (<i>or</i> w:v) weight per volume (g/L; only used parenthetically) |
| w/w | (<i>or</i> w:w) weight per weight (mg/g; only used parenthetically) |
| YOY | young of (the) year (<i>avoid using this acronym</i> ; define young of [the] year as “age 0” and use that term thereafter) |
| Z | instantaneous total mortality (= natural + fishing mortality) |