

## Appendix A. *Spelling List*

This appendix shows the treatment of technical terms that are encountered frequently in AFS publications. There are two lists, one for terms relating to mathematics and statistics and one for other terms. Parts of speech are abbreviated as follows: adj = adjective, adv = adverb, n = noun, and v = verb. Superscripted numerals refer to notes at the end of the appendix.

Sources for the second list are abbreviated as follows: W11 = *Merriam-Webster's Collegiate Dictionary*, 11th edition; W3 = *Webster's Third New International Dictionary* (but not W11); CMS = *Chicago Manual of Style*, 15th edition; CBE = *Scientific Style and Format*, 6th edition (Council of Biology Editors, Cambridge, UK); and FT = *Fisheries Techniques*, 2nd edition (American Fisheries Society, Bethesda, Maryland). Asterisks indicate terms that are not in either of the two dictionaries, plus signs terms for which AFS's treatment differs from that in these dictionaries.

### 1. *Mathematical and Statistical Terms*

	chi-square (or $\chi^2$ ) test ( <i>not</i> chi-squared test)
	coefficient of variation [define as 100 × SD/mean or 100 × SE/mean]
	cross-classify
analysis of variance (n; adj)	
analysis of covariance (n; adj)	
arcsine [arcsin in expressions, e.g., arcsin( $x + 1$ )]	detrended correspondence analysis
	discriminant function analysis
	dome-shaped curve
arcsine transformation	Delphi technique
arcsine-transformed	Duncan's multiple-range test
Bartlett's test	$E(x)$ (expected value)
base $e$ ; base 10 (n)	$\eta$ (eta [amount of variation in a given variable accounted for by ANOVA])
base- $e$ ; base-10 (adj)	expectation-maximization algorithm
best fit (n)	error-prone estimates
best-fit (adj)	
Beverton-Holt	
Bonferroni $t$ -test	Friedman's rank-sum statistic
bootstrap	Friedman's test
Chapman-Robson method	

Friedman two-way analysis of variance by ranks  
*F*-statistic, -test, -value

general linear model (n; adj)  
generalized least squares  
*G*-test, -value  
goodness of fit (n)  
goodness-of-fit (adj)  
growth-invariant discriminant functions

*H'* (Shannon–Weiner diversity index)

*H*<sub>0</sub> (null hypothesis)  
habitat suitability curves  
Hardy–Weinberg expectation  
heteroscedastic, -icity  
homoscedastic, -icity  
honestly significant difference (n; adj)  
Hotelling–Lawley criteria  
Hotelling's  $T^2$ -statistic

Jolly-Seber model  
Jonckheere test

Kendall coefficient of correspondence (*W*)  
Kendall rank correlation coefficient ( $\tau$ )  
Kendall's tau (*or*  $\tau$ )  
Keuls' test  
Kolmogorov D-statistic  
Kolmogorov–Smirnov cumulative distribution  
test  
Kolmogorov–Smirnov one-sample test  
*k*-sample binomial test ( $2 \times k$  test)  
Kruskal–Wallis *H*-test

Kruskal–Wallis *k*-sample test

least significant difference (n)  
least-significant-difference (adj)  
least squares (n)  
least-squares (adj)  
linear discriminant analysis  
 $\log_e$ ,  $\log_{10}$   
logistic regression  
log-likelihood function  
log-linear  
lognormal, -ity  
log-transformed (before noun)  
log transformed (after noun)

Mahalanobis distance  
Mann–Whitney *U*-test  
maximum likelihood (n; adj)  
mean square error  
Monte Carlo  
multiattribute utility analysis  
multinomial distribution  
multiple comparison procedure  
multiple correlation (n)  
multiple-correlation (adj)  
multiple regression (n)  
multiple-regression (adj)  
multisample single recapture model  
multivariate analysis  
multivariate analysis of variance

Newman–Keuls  
nonlinear least-squares regression  
nonuniform probability sampling

one-way analysis of variance

pair-group method

pairwise comparisons

Pearson's product-moment correlation coefficient

Pillai criteria

product-moment correlation

product-multinomial sampling

*P*-value

*r* (correlation coefficient)

$R^2$  (coefficient of multiple determination;  $r^2$  if only one explanatory variable)

rank-sum

Scheffé's statistic

Shannon–Weiner diversity index

Shapiro–Wilk *W*

signed rank

sign test

skewed distribution

Spearman's rank correlation coefficient ( $r_s$ )

square-root-transformed data

stratified random design (or sampling)

stratified-random-sample model

Strauss's linear index

Student–Newman–Keuls test

time series analysis

*t*-test

Tukey–Kramer analysis

Tukey post hoc analysis

Tukey's test

two-way analysis of variance

type I (or II) error

unweighted pair-group method with arithmetic averages

*U*-test

$\text{Var}(x)$  (or  $V[x]$ ) (population variance)

$\text{var}(x)$  (or  $\text{var}[x]$  or  $V\{\text{caret}\}[x]$ ) (sample variance)

variance–covariance

*W* (Kendall coefficient of correspondence)

Wilcoxon–Mann–Whitney two-sample test

Wilcoxon matched-pairs, signed-ranks test

Wilcoxon rank-sum test

Wilcoxon's signed rank test

Wilks criterion

Wilks' lambda (or  $\lambda$ )

*x*-axis, -coordinate, -intercept

*y*-axis, -coordinate, -intercept

## 2. *Other Terms*

acid-neutralizing (adj)\*

acid-tolerant (adj)\*

acre-foot; acre-feet (n)<sup>W11</sup>

acre-foot-day; acre-feet-day (n)\*

acre-inch (n)<sup>W11</sup>

*x* at age (n)\*  
*x*-at-age (adj)\*  
age *x* (n)\*

age-*x* (adj [before noun])\*  
age *x* (adj [after noun])\*  
age-class (n<sup>W3</sup>; adj\*)<sup>17</sup>  
age-cohort (n; adj)<sup>17</sup>  
age-group (n<sup>W11</sup>; adj\*)<sup>17</sup>  
age structure (n; adj)\*  
air bladder (n<sup>W11</sup>; adj\*)<sup>24</sup>  
air-breathing (adj)\*  
air-dry (adj; v)<sup>W11</sup>; air-dried (adj; v)\*  
air sac (n)<sup>W11</sup> [in birds only]<sup>24</sup>  
air stone (n; adj)\*  
alongshore (adj; adv)<sup>W11</sup>  
ammonia nitrogen *or* NH<sub>3</sub>-N (n<sup>W3</sup>; adj\*)  
ammonium nitrate (n<sup>W11</sup>; adj\*)  
ammonium nitrogen *or* NH<sub>4</sub><sup>+</sup>-N (n<sup>W3</sup>; adj\*)  
angler data (n; adj)\*  
angler-day (n)\*<sup>19</sup>  
angler effort (n; adj)\*  
angler-hour (n)\*<sup>19</sup>  
appendices *or* appendixes (n)<sup>W11</sup>  
aquaculture<sup>W11</sup> [*not* aquiculture]  
artificial intelligence (n<sup>W11</sup>; adj\*)  
ASCII (n)<sup>W11</sup>

back-calculate (v)\*  
back-calculated (adj)\*  
back-calculation (n)\*  
backwater (n)<sup>W11</sup>  
baitfish (n)<sup>W3</sup>  
bait line (n; adj)\*  
bait minnow (adj)\*

bank fish (n<sup>W3</sup>; adj\*)  
bank-full (adj)<sup>W3</sup>  
barbed wire (n)<sup>W11</sup>  
barbwire (adj)\*  
bar code (n<sup>W11</sup>; adj\*)  
base flow (n; adj)\*  
baseplate (n)<sup>W3</sup>  
BASIC (n)<sup>W11</sup>  
B cell (n<sup>W11</sup>; adj\*)<sup>11</sup>  
bed load (n; adj)\*  
benefit-cost\* *or* cost-benefit<sup>W11</sup> (adj)  
binary code (n)\*  
binary-coded wire tag (adj)\*  
biotelemetry (n)<sup>W11</sup>  
blacktail (n)<sup>W3</sup>  
bleb-like (adj)\*<sup>21</sup>  
block net (n)\*  
block-net (adj)\*  
blocknet (v)\*  
block-netter (n)\*  
block netting (n)\*  
block-netting (adj)\*  
blow down (v)\*  
blowdown (n; adj)<sup>W11</sup>  
*x* boat; *x*boat (n)<sup>18</sup>  
bottom fish (n<sup>W3</sup>; adj\*)  
bottom fishing (n<sup>W3</sup>)  
box plot (n)\*  
brackish water (n)<sup>W11</sup>  
brackish-water (adj)<sup>W11</sup>  
break up (v)<sup>W11</sup>  
breakup (n)<sup>W11</sup>  
breakwater (n)<sup>W11</sup>  
brewer's (adj)<sup>W11</sup>

brood female (n<sup>W3</sup>; adj\*)  
 broodfish (n)\*  
 broodsac (n)<sup>W3</sup>  
 broodstock (n)+  
 brood year (n; adj)\*<sup>20</sup>  
 bus route (n; adj)\*  
 bycatch (n)\*  
 by-product (n)<sup>W11</sup>  
  
 carbon-14 (n; adj)+<sup>15</sup>  
 case history (n<sup>W3</sup>; adj\*)  
 cast net (n)<sup>W3</sup>  
 cast-net (adj)\*  
 castnet (v)\*  
 catch depletion method [as in *FT*]  
 catch-release (adj)\*  
 catch and release (n)\*  
 catch-and-release (adj)\*  
 catch per effort *or* catch per unit effort (n)\*  
 catch-per-effort *or* catch-per-unit-effort (adj)\*  
 char (n)<sup>W11</sup> [*not* charr]  
 charter boat (n)\*  
 charter boat *or* charter-boat (adj)\*<sup>18</sup>  
 charter fishing boat (n)\*  
 chlorophyll *a* (n)<sup>W11</sup>  
 chlorophyll-*a* (adj)\*  
 clear-cut (n; adj)<sup>W11</sup>  
 clear-cut (v)\*  
 clear-cutting (n<sup>W11</sup>; adj\*)  
 cobalt-60 (n; adj)+<sup>15</sup>  
 coded wire tag (n; adj)\*  
 coded-wire-tagged (adj; v)\*  
 coded-wire-tagging (adj)\*  
 cod end (n<sup>W3</sup>; adj\*)  
  
 cold brand (n)\*<sup>8</sup>  
 cold-brand (adj; v)\*  
 cold water (n)<sup>W11</sup>  
 coldwater (adj)+  
 cold-water disease (adj)\*  
 common property (n)<sup>W3</sup>  
 common-property (adj)\*  
 compact disc (n)<sup>W11, 23</sup>  
 contingent valuation (n; adj)\*  
 cool water (n)\*  
 coolwater (adj)\*  
 cost-benefit (adj)<sup>W11</sup>  
 coworker (n)<sup>W11</sup>  
 cove rotenone sampling [as in *FT*]  
 creel (n; v)<sup>W11</sup>  
 crosshatch (n; v)<sup>W11</sup>  
 cross-hatching (n)<sup>W11</sup>  
 cross-react (v)<sup>W11</sup>  
 cross-reaction (n)<sup>W11</sup>  
 cross-reactive (adj)<sup>W11</sup>  
 cross section (n)<sup>W11</sup>  
 cross-section (v)<sup>W11</sup>  
 cross-sectional  
 (adj)<sup>W11</sup>  
 cross validate (v)\*  
 cross validation (n)\*  
 cut bank (n; adj)\*  
  
 daphnia (n)<sup>W11</sup> [define as *Daphnia* spp. at first  
 use]  
 data (n)<sup>W11</sup> [takes plural verb]  
 database (n)<sup>W11</sup>  
 data logger (n; adj)\*  
 data set (n)\*  
 x-day<sup>19</sup>

day length (n; adj)\*  
 decision maker (n; adj)\* <sup>1</sup>  
 decision making (n)\* <sup>2</sup>  
 decision-making (adj)\* <sup>2</sup>  
 deep sea (n) <sup>W3</sup>  
 deep-sea (adj) <sup>W11</sup>  
 deep water (n)\*  
 deepwater (adj) <sup>W11</sup>  
 deepwaterman (n) <sup>W3</sup>  
 degree-day (n) <sup>W11</sup>  
 Dermo (n)\*  
 desktop (n) <sup>W11</sup>  
 die off (v) <sup>W11</sup>  
 die-off (n) <sup>W11</sup>; adj\*  
 dip net (n) <sup>W11</sup>  
 dip-net (adj)\*  
 dipnet (v) <sup>W11</sup>  
 dipnetter (n) <sup>W3</sup>  
 dipnetting (n) <sup>W3</sup>  
 disc brake (n) <sup>W11</sup>; adj\* <sup>23</sup>  
 disk *or* disc (n) <sup>W11, 23</sup>  
 distiller's (adj)+  
 D-loop (n, adj)  
 dome-shaped (adj)\*  
 dorsolateral (adj) <sup>W11</sup>  
 dorsoventral (adj) <sup>W11</sup> [*not* dorsiventral]  
 dorsoventrally (adv) <sup>W11</sup>  
 double-tag (v)\*  
 double-tagged (adj)\*  
 downcurrent  
 downlake (adj; adv)\*  
 download (v) <sup>W11</sup>  
 downstream (adj; adv) <sup>W11</sup>  
  
 early *x*; early-*x* (adj) <sup>W11, 3</sup>  
 early (adv) <sup>W11, 3</sup>

echolocation (n) <sup>W11</sup>  
 echo sounder (n) <sup>W11</sup>; adj\*  
 echo sounding (n)\*  
 echo-sounding (adj)\*  
 ecosystem-wide (adj)\* <sup>22</sup>  
 e-mail (n; adj)+  
 end label (n; adj)\*  
 end-labeled (adj)\*  
 endpoint (n) <sup>W11</sup> (end of line)  
 end point (n) <sup>W11</sup> (goal)  
 exvessel (n)\* [prevailing usage]  
 eyed egg (n) <sup>W3</sup>  
 eyed egg stage (adj)\*  
 eye-up (n; adj)\*  
  
 family-group (n; adj)\*  
 fax (n; v) <sup>W11</sup>  
 fieldwork (n) <sup>W11</sup>  
 field-worker (n) <sup>W11</sup>  
 filterability (n) <sup>W11</sup>  
 filterable (adj) <sup>W11</sup>  
 filter-feed (v)\*  
 filter feeder (n) <sup>W11</sup>  
 filter feeding (n)\*  
 filter-feeding (adj)\*  
 fin clip (n; adj)\*  
 fin-clipped, fin-clipping (v)\*  
 finfish (n) <sup>W11</sup>  
 fin fold (n) <sup>W3</sup>; adj\* <sup>5</sup>  
 fin ray (n; adj)\*  
 first-order (adj) <sup>W11, 16</sup>  
 fish culture (n) <sup>W3</sup>; adj\*  
 fish culturist (n)\*  
 fish farm (n) <sup>W11</sup>; adj\*

fish-farm (v)<sup>W11</sup>  
 fish-farming (n)<sup>W3</sup>; adj\*)  
 fish-finder (n)<sup>W3</sup>  
 fish hatchery (n)<sup>W3</sup>; adj\*)  
 fish ladder (n)<sup>W3</sup>; adj\*)  
 fishline (n)<sup>W3</sup>  
 fish meal (n)<sup>W3</sup>; adj\*)  
 fishnet (n)<sup>W11</sup>  
 fishpond (n)<sup>W11</sup>  
 fishpound (n)<sup>W3</sup>  
 fishway (n)<sup>W11</sup>  
 fishweir (n)<sup>W3</sup>  
 fish well (n)<sup>W3</sup>; adj\*)  
 fish wheel (n)<sup>W3</sup>; adj\*)  
 floppy *or* floppy disk (n)<sup>W11,23</sup>  
 flowmeter (n)<sup>W11</sup>  
 flow rate (n; adj)\*  
 fly-fish (v)<sup>W3</sup>  
 fly fisher (n; adj)+  
 fly fisherman (n)<sup>W11</sup>; adj\*)  
 fly-fishing (n)<sup>W11</sup>  
 focal point (n; adj)\*  
*x*fold *or* *x*-fold (fourfold; 14-fold)  
 food fish (n)<sup>W3</sup>; adj\*)  
 footrope (n)<sup>W11</sup> (part of a net)  
 FORTRAN *or* Fortran (n)<sup>W11</sup>  
 freeze brand (n; v)\*<sup>8</sup>  
 freeze-branded (adj; v)\*<sup>8</sup>  
 freeze branding (n)\*<sup>8</sup>  
 freeze-branding (adj; v)\*<sup>8</sup>  
 freeze-dried (adj)<sup>W11</sup>  
 freeze-dry (v)<sup>W11</sup>  
 freeze-drying (n)<sup>W3</sup>  
 freshwater (n; adj)<sup>W11</sup>

full time (n)<sup>W11</sup>  
 full-time (adj;adv)<sup>W11</sup>  
 fyke net (n)  
 fyke netting  
 fyke-net (v, adj)  
  
 gallbladder (n)<sup>W11</sup>  
 game fish (n)<sup>W11</sup>; adj\*)  
 game fisherman (n; adj)\*  
 game-fishing (n; adj)\*  
 gamma irradiation (n)\*  
 gas bladder (n; adj)\*<sup>24</sup>  
 generating station (n)<sup>W3,4</sup>  
 gill net (n)<sup>W11</sup>  
 gill-net (adj)\*  
 gillnet (v)<sup>W11</sup>  
 gillnetter (n; adj)<sup>W11</sup>  
 gill netting (n)\*  
 gillnetting (v)\*  
 gill raker (n)<sup>W11</sup>; adj\*)  
 gray (adj)<sup>W11</sup> [*not* grey]  
 groundfish (n)<sup>W11</sup>  
 groundfish fishery (n)\*  
 [preferable to groundfishery]  
 ground truth (adj)\*  
 ground-truthing (n)\*  
 groundwater (n)<sup>W11</sup>  
 group *x*<sup>17</sup>  
 grow out (v)<sup>W3</sup>  
 grow out (n)\*  
 grow-out (adj)\*  
  
 handline (n; v)<sup>W3</sup>  
 hard water (n)\*  
 hard-water (adj)\*  
 headboat (n)\*<sup>18</sup>  
 headrope (n)<sup>W3</sup>

headstream (n)<sup>W11</sup>  
 headwater (n)<sup>W11</sup>  
 herpesvirus (n)<sup>W11</sup>  
 high sea (n)<sup>W11</sup> (usually plural: high seas)  
 high-sea (adj)\*  
 high water (n)<sup>W11</sup>  
 high-water (adj)<sup>W11</sup>  
 hook and line (n)\*  
 hook-and-line (adj)\*  
 hook-and-liner (n)<sup>W3</sup>; (adj)\* (the boat)  
 x-hour<sup>19</sup>  
 hydro (n; adj)<sup>W11</sup> (short for hydropower)  
 hydrox<sup>W11</sup>  
 hydroelectric (adj)<sup>W11</sup> [*not* hydrogenerating]  
 hydropower (n)<sup>W11</sup> (= hydroelectric power)

ice melt (n; adj)\*  
 ice-out (n)<sup>W11</sup>; (adj)\*  
 image-processing (adj)\*  
 index (n)<sup>W11</sup> [plural: indices *or* indexes]  
 inflow (n)<sup>W11</sup>  
 inflow (v)<sup>W3</sup>  
 xing<sup>2</sup>  
 in-lake (adj)\*  
 in-river (adj)\*  
 inshore (adj; adv)<sup>W11</sup>  
 in stream (n)\*  
 instream (adj)\*  
 interisland (adj)<sup>W11</sup>  
 intervertebral disk (n)<sup>W11,23</sup>  
 in vitro (adj; adv)<sup>W11</sup> [*not italic*]  
 in vivo (adj; adv)<sup>W11</sup> [*not italic*]  
 iteroparous (adj)\*

johnboat (n)<sup>W11, 18</sup>  
 kick-sampling (n; adj)\*  
 kick-seining (n; adj)\*  
 x-kilometer<sup>19</sup>

lake bed (n)<sup>W3</sup>; (adj)\* [lakebed all right when  
 used with streambed<sup>W11</sup>]  
 lakefront (n)<sup>W11</sup>  
 lakeshore (n)<sup>W11</sup>  
 lakeside (n)<sup>W11</sup>  
 lake water (n; adj)\*  
 laptop (n; adj)<sup>W11</sup>  
 large-scale (adj)<sup>W11</sup>  
 larva (n)<sup>W11</sup> [plural: larvae]  
 larval (adj)<sup>W11</sup>  
 lateral line (n)<sup>W11</sup>; (adj)\*<sup>5</sup>  
 lateroventral (n)\* length-  
 cohort (n; adj)\*<sup>17</sup>  
 length frequency (n)\*  
 length frequency *or* length-frequency (adj)\*<sup>25</sup>  
 length-group (n; adj)\*<sup>17</sup>  
 length-weight (adj)\* [length and weight]  
 leukocrite (n)\*  
 leukocyte (n)<sup>W11</sup> [*not leucocyte*]  
 life cycle (n)<sup>W11</sup>; (adj)\*  
 life history (n)<sup>W11</sup>; (adj)\*  
 life-size *or* life-sized (adj)<sup>W11</sup>  
 life span (n)<sup>W11</sup>; (adj)\*  
 life stage (n; adj)\*  
 lifestyle (n)<sup>W11</sup>  
 lifetime (n; adj)<sup>W11</sup>  
 light pen (n)<sup>W11</sup>; (adj)\*  
 lightproof (adj)<sup>W11</sup>

light stick (n; adj)\*  
 lightweight (n)<sup>W11</sup>  
 xlike <sup>21</sup>  
 limited access (n)\*  
 limited-access (adj)<sup>W11</sup>  
 limited entry (n)\*  
 limited-entry (adj)\*  
 live-box (n)<sup>W11</sup>; adj\*)  
 live-cage (n; adj)\*  
 live trap (n)<sup>W11</sup>  
 live-trap (adj)\*  
 livetrapping (v)<sup>W11</sup>  
 liveweight (n)<sup>W3</sup>  
 live well (n)<sup>W3</sup> (live-box for fish)  
 live-well (adj)\*  
 long-line (v)\*  
 longline (n)<sup>W11</sup>  
 long-liner (n)<sup>W11</sup>  
 long-lining (n)<sup>W11</sup>  
 long-lived(adj)<sup>W11</sup>  
 longshore (adj)<sup>W3</sup>  
 long-term (adj)<sup>W11</sup>  
 longtime (adj)<sup>W11</sup>  
 low-head (adj)

mainframe (n)<sup>W11</sup>  
 main stem (n)<sup>W11</sup>  
 main-stem (adj)\*  
 mainstream (n; adj)<sup>W11</sup>  
 x maker <sup>1</sup>  
 x making <sup>2</sup>  
 mark-recapture (adj)\*  
 mass mark (n)\*<sup>9</sup>  
 mass-mark (v)\*<sup>9</sup>  
 mass-marked (adj)\*<sup>9</sup>

mass marking (n)\*<sup>9</sup>  
 mass-marking (adj)\*<sup>9</sup>  
 megalops (n)<sup>W3</sup>  
 [plural: megalops *or* megalopses]<sup>W11</sup>  
 megalopic (adj)<sup>W3</sup>  
 meltwater (n)<sup>W11</sup>  
 microchip (n)<sup>W11</sup>  
 microcomputer (n)<sup>W11</sup>  
 microwell plate (n; adj)\*  
 microwire tag (n)\*  
 microwire-tagged (adj; v)\*  
 mid (adj)<sup>W11</sup> *or* mid-<sup>6</sup>  
 middepth (n)\*<sup>6</sup>  
 midwater (n+; adj)\*<sup>6</sup>  
 x-mile <sup>19</sup>  
 minicomputer (n)<sup>W11</sup>  
 minimum size limit (n)\*  
 minimum-size-limit (adj)\*  
 mixed-stock analysis (n)\*  
 mollusk [preferred] *or* mollusc (n)<sup>W11</sup>  
 xmost (adj)<sup>W11</sup>  
 mother ship (n)<sup>W3</sup>  
 mother ship *or* mothership (adj)\*  
 motorboat (n)<sup>W11, 18</sup>  
 mouthbreeder (n)<sup>W11</sup>  
 mouthbrooder (n)\*  
 mouth-brooding (adj)\*  
 multispecies (adj)<sup>W11</sup>

near shore (n)\*  
 nearshore (adj)<sup>W11</sup>  
 net-day; net-night (n)\*<sup>19</sup>  
 net-pen (n; adj)\*

net plankton (n<sup>W3</sup>; adj\*)  
 network (n; v)<sup>W11</sup>  
 networking (n)<sup>W11</sup>  
 neutron activation (n; adj)\*  
 nick translation (n; adj)\*  
 nick-translated, nick translated  
 [hyphenate before noun; leave open after  
 noun]  
 nitrate-nitrogen (n)\* (NO<sub>3</sub>-N)  
 nitrite-nitrogen (n)\* (NO<sub>2</sub>-N)  
 nonangler (n)\*  
 nonnative (n)<sup>W11</sup>  
 nonnormal (n)\*  
 non-point-source (adj)\* **13**  
 non-yolk-bearing (adj)\* **13**  
 number cruncher (n<sup>W11</sup>; adj\*)  
 number crunching (n)<sup>W11</sup>  
 number-crunching (adj)\*  
  
 off-center *or* off-centered (adj)<sup>W3</sup>  
 off shore (n)\*  
 offshore (adj; adv; prep)<sup>W11</sup>  
 off-station (adj)\*  
 old growth (n)<sup>W3</sup>  
 old-growth (adj)\*  
 onboard (adj)<sup>W11</sup>  
 on site (n)\*  
 on-site (adj; adv)<sup>W11</sup>  
 open-formula diet (n)\*  
 open water (n)<sup>W3</sup>  
 open-water (adj)\*  
 optical disk *or* optical disc (n)<sup>W11,23</sup>  
 x-order **16**  
 out-migrant (n<sup>W11</sup>; adj\*)

out-migrate (v)<sup>W11</sup>  
 out-migration (n<sup>W11</sup>; adj\*)  
 overfish (v)<sup>W11</sup>  
 overwinter (v; adj)<sup>W11</sup>  
  
 Pascal *or* PASCAL (n)<sup>W11</sup>  
 pattern recognition (adj)\*  
 PC (n)<sup>W11</sup> (personal computer)  
 [plural: PCs *or* PC's]  
 percent (n; adj; adv)<sup>W11</sup>  
 percentage (n)<sup>W11</sup>  
 Petersen disc (n; adj)\*  
 phone book (n; adj)\*  
 phosphorous (adj)<sup>W11</sup>  
 phosphorus (n)<sup>W11</sup> (the element)  
 physicochemical (adj)<sup>W11</sup>  
 PIT tag (n; adj)\*  
 PIT-tag (v)\*  
 PIT tagging (n)\*  
 point source (adj)\*  
 policymaker (n)\* **1**  
 pond water (n; adj)\* (like lake water)  
 pop net (n)\*  
 pop-net (adj)\*  
 postx  
 poststocking (adj)\*  
 powerhouse (n)<sup>W11</sup>  
 power plant (n<sup>W11</sup>; adj\*) **4**  
 power station (n<sup>W11</sup>; adj\*) **4**  
 predator-prey (n; adj)\*  
 presmolt (n; adj)\*  
 prey fish (n; adj)\*  
 pre-yolk-sac (adj)\* **13**  
 purse seine *or* purse net (n)<sup>W11</sup>

purse-seine (adj; v)\* **10**  
purse seiner (n<sup>W11</sup>; adj\*)  
purse seining (n<sup>W11</sup>)  
purse-seining (adj)\*  
push net (n)<sup>W3</sup>  
push-net (adj)\*

quasix (adj)<sup>W11</sup>

radio tag (n; adj)\* **12**  
radio-tag (v)\* **12**  
radio-tagged (adj; v)\* **12**  
radiotelemetry (n)<sup>W11, 12</sup>  
radio-track (v)\*  
radio-tracked (v; adj)\*  
radio transmitter (n)<sup>W3</sup>; adj\*)  
rain forest (n)<sup>W11</sup>; adj\*)  
rebar (n)<sup>W11</sup>  
recirculating  
    water (adj)  
riverbank (n)<sup>W11</sup>  
riverbed (n)<sup>W11</sup>  
RNase (n)<sup>W11</sup> [*not* RNAase]  
rootwad (n)\*  
R plasmid (n)\* **11**  
run off (v)<sup>W11</sup>  
runoff (n)<sup>W11</sup>

sagitta (n)<sup>W3</sup> [plural: *sagittas or sagittae*]  
saltfish (n)\*  
salt lake (n)<sup>W11</sup>; adj\*)  
salt marsh (n)<sup>W11</sup>  
salt-marsh (adj)<sup>W3</sup>  
salt water (n)<sup>W3</sup>  
saltwater (adj)<sup>W11</sup>  
seabed (n)<sup>W11</sup>

seafloor (n)<sup>W11</sup>  
sea grass (n)<sup>W11</sup>  
sea ice (n)<sup>W3</sup>; adj\*)  
sea level (n)<sup>W11</sup>; adj\*)  
sea pen (n)<sup>W11</sup>; adj\*) (an anthozoan)  
sea-pen (n; adj)\* (type of net-pen)  
sea ranching (n)\*  
sea-ranching (adj)\*  
sea-run (adj)<sup>W11</sup>  
sea-running (adj)<sup>W3</sup>; v\*)  
sea surface (adj)\*  
seawater (n)<sup>W11</sup>  
Secchi disk (n; adj)\* [as in *FT*]  
second growth (n)<sup>W11</sup>  
second-growth (adj)\* **16**  
second-order (adj)<sup>W3, 16</sup>  
seine (v)<sup>W11</sup>  
seine *or* seine net (n)<sup>W11</sup>  
seine *or* seine-net (adj)\*  
seiner *or* seine-netter (n)<sup>W11</sup>  
semelparous (adj)\*  
serum (n)<sup>W11</sup> [plural: *sera or serums*]  
setline (n)<sup>W11</sup>  
shallow water (n)\*  
shallow-water (adj)\*  
shoreline (n)<sup>W11</sup>  
short tandem repeat  
    (n;adj)  
short term (n)\*  
short-term (adj)<sup>W11</sup>  
side-scan sonar (n)<sup>W11</sup>  
single-nucleotide polymorphism  
*x-size or x-sized* [usually hyphenated]  
size-class (n; adj)\*  
size-frequency (adj)\*  
size-group (n; adj)\* **17**  
size range (n)\*

size-selective (adj)\* [open after noun]  
 snowmelt (n)<sup>W11</sup>  
 sociocultural (adj)<sup>W11</sup>  
 socioeconomic (adj)<sup>W11</sup>  
 socioeconomics (n)\*  
 software (n)<sup>W11</sup>  
 soft water (n)\*  
 soft-water (adj)\*  
 species' [possessive; *not* species's]  
 species composition (n; adj)\*  
*x*-specific [usually hyphenated]  
 speedboat (n)<sup>W11, 18</sup>  
 sport fish (n)<sup>W11</sup>; adj\*  
 sport fisherman (n)<sup>W11</sup>; adj\* (the person)  
 sportfisherman (n)<sup>W11</sup> (the boat)  
 sport fishery (n; adj)\*  
 sportfishing (n)<sup>W11</sup>  
 sportfishing (adj)\*  
 spreadsheet (n)<sup>W11</sup>  
 springwater (n)<sup>W3</sup>  
 stainless steel (n)<sup>W11</sup>; adj\*  
 starch gel (n; adj)\*  
 state-space (n; adj)  
 steady state (n; adj)<sup>W11</sup>  
 stock–recruit (adj)\*  
 stock–recruitment (n; adj)\*  
 stop-log (n)  
 streambank (n)\*  
 streambed (n)<sup>W11</sup>  
 streamflow (n)<sup>W3</sup>  
 streamside (n)<sup>W11</sup>  
 strip-spawned (v; adj)\*  
 strip-spawning (n; adj)\*  
 superphosphate (n)<sup>W11</sup>  
 surface water (n; adj)\*  
 surplus production model  
 swim bladder (n)<sup>W11</sup>; adj\*)<sup>24</sup>  
 swim-up (n; adj)\*  
 tag-release (n; adj)\*  
 tailwater (n)<sup>W11</sup>  
 tap water (n)<sup>W11</sup>; adj\*  
 T cell (n; adj)<sup>W11, 11</sup>  
 thin section (n)<sup>W3</sup>  
 thin-section (v)\*  
 third-order (adj)<sup>W3, 16</sup>  
 tidewater (n)<sup>W11</sup>  
 timesaving (adj)<sup>W11</sup>  
 time series (n)<sup>W11</sup>; adj\*  
 tow net *or* towing net (n)+  
 townet (v; adj)\*  
 trapline (n)<sup>W11</sup>  
 trap net (n)<sup>W3</sup>  
 trap-net (adj)\*  
 trap- netted (v)\*  
 trap-netting (n; v)\*  
 travel cost (n; adj)\*  
 T wave (n)<sup>W3</sup>  
 T-wave (adj)\*  
 type *x*; *x*-type <sup>17</sup>  
 type A (adj)<sup>W11, 17</sup>  
 type species (n)<sup>W11</sup>; adj\*  
 un-ionized (adj)\*  
 uranium-235 (n; adj)+ <sup>15</sup>  
 video camera (n)\*  
 video-camera (adj)\*  
 videocassette (n)<sup>W11</sup>  
 videodisc (n)<sup>W11, 23</sup>

videotape (n; v)<sup>W11</sup>  
 video terminal (n)\*  
 virus-like (adj)\*<sup>21</sup>  
 vitamin x (adj)  
 vitamin-C-free diet

warm water (n)<sup>W3</sup>  
 warmwater (adj)<sup>W3</sup>  
 wastewater (n)<sup>W11</sup>  
 waterborne (adj)<sup>W11</sup>  
 water column (n)<sup>W3</sup>; adj\*)  
 water-hardened (adj; v)\* [before and after noun]  
 water hardening (n)\*  
 water-hardening (adj)\* [before and after noun]  
 waterpower (n)<sup>W11</sup>  
 water quality (n; adj)\*  
 water year (n; adj)\*<sup>20</sup>  
 weigh in (v)<sup>W11</sup>  
 weigh-in (n)<sup>W11</sup>  
 weight frequency (n)\*  
 weight frequency *or* weight-frequency (adj)\*<sup>25</sup>  
 weight-length (n; adj)\*  
 well-being (n)<sup>W11</sup>  
 well-known (adj)<sup>W11</sup> [before and after noun;  
*but* very well known (adj)\*]  
 well water (n; adj)\*  
 white water (n)<sup>W11</sup>  
 white-water(adj)<sup>W11</sup>

xwide<sup>22</sup>  
 widespread (adj)<sup>W11</sup>  
 wide-spreading (adj)<sup>W11</sup>  
 willingness to pay (n)\*  
 willingness-to-pay (adj)\*  
 winter-kill (v)<sup>W11</sup>  
 winterkill (n)<sup>W11</sup>  
 worksheet (n+; adj\*)

X-radiation (n)<sup>W11</sup>  
 X-ray (n; adj; v)<sup>W11</sup>  
 X-ray radiography (n)\* [*not* X radiography]  
 x-section (n)<sup>W11</sup> [cross-section preferred]

x-year or x year<sup>19,20</sup>  
 year-class (n)+<sup>14</sup>  
 year-class (adj)\*  
 x-year-old(s) (n; adj)\*<sup>7</sup>  
 yield per recruit (noun phrase)  
 yield-per-recruit model (noun  
 phrase as adj)  
 young of year *or*  
 young of the year (n; adj)  
 [abbreviate as age-0; avoid  
 YOY]  
 zoea (n)<sup>W11</sup> [plural: zoeae *or* zoeas]  
 zoeal (adj)<sup>W3</sup>

## Notes

In the following notes the term “open” refers to a compound word in which the components are separated by spaces (e.g., “point source”) and the term “closed” to a compound word in which the components are not separated by spaces (e.g., “warmwater”).

- (1) decision maker, *x* maker: Most compounds involving “maker” are open, but “policymaker” is an important exception.
- (2) decision making; *x*-ing: Temporary compounds formed from a noun and a gerund are generally open as nouns, but many permanent compounds are closed (e.g., bookkeeping). Adjectival compounds formed from a noun and a present participle are hyphenated before the nouns they modify (e.g., decision-making event), and a few permanent compounds are hyphenated after the noun as well (e.g., thought-provoking).
- (3) early: When used as an adjective, “early” can be hyphenated (e.g., early-life behavior). However, it may be better to rewrite some phrases (e.g., to use the adverbial form “early migrating salmon” instead of the adjectival form “early-migrant salmon”). Phrases such as “early life history” are not hyphenated because combinations like “life history” and “life stage” are treated as compound nouns (i.e., “early” modifies “life history”).
- (4) generating plant, generating station: These terms are open compound nouns, so modifiers preceding “generating” are not followed by hyphens (e.g., power generating station, electricity generating plant). (Note: A nuclear plant is not always a nuclear power generating plant [e.g., the Savannah River site produces nuclear material for defense rather than electricity]).
- (5) fin fold, lateral line: Names of body parts should be treated as open compound nouns and not hyphenated when used as adjectives.
- (6) mid, middepth, etc.: The word “mid” can be treated as an adjective, but AFS generally prefers to treat it as a prefix (e.g., midseason, midyear). It is hyphenated when it modifies a proper noun, date, or number (e.g., mid-August, mid-1988). If it is separated from its stem by other words, it can stand alone (e.g., mid to late March *but* early to mid-March).

- (7) *x*-year-olds: There is some inconsistency in Webster's dictionaries with respect to these terms. AFS uses the hyphenated form for the noun as well as the adjective.
- (8) cold brand, freeze brand: Although many compound nouns with the word "freeze" are hyphenated in Webster's dictionaries, nearly all compound nouns with the word "cold" are open; AFS has therefore chosen to leave all such terms open. Most compound nouns with the word "freezing" are open (e.g., freezing point), but most of the adjectival forms have hyphens (e.g., freezing-point measurement).
- (9) mass mark, etc: Webster's dictionaries leave most compounds with "mass" open when they are nouns but hyphenate the adjectival and verb forms.
- (10) purse-seine: The verb form is hyphenated for reasons of clarity, even though most of the verbs pertaining to capture techniques are closed (e.g., gillnet).
- (11) B cell, R plasmid, T cell: All cytological entities designated by a capital letter should be left open as nouns and adjectives (e.g., T cell deficiency, B leukocyte measurements) unless treated otherwise in W11 or hyphens are needed because of the construction (e.g., T-cell-dependent antigens).
- (12) radio tag, etc.: Webster's dictionaries close up all "radio" prefixes when they refer to radioactivity. When the reference is to the radio frequency spectrum, most such terms are open as nouns.
- (13) non-yolk-bearing, pre-yolk-sac: When a prefix is added to a hyphenated word, a hyphen should come after the prefix.
- (14) year-class: W3 lists "year class" as a noun, the only instance of an open "-class" or "-group" term. For editorial consistency, AFS hyphenates this term as a noun.
- (15) carbon-14, cobalt-60, uranium-235: Although these isotopes are open in W11, the standard practice in scientific writing is to place a hyphen between the spelled-out element name and the mass number. When the element symbol is used, the number should be a superscript placed before the symbol (e.g., <sup>32</sup>P).
- (16) first-order, second-growth: All rank-order compound adjectives are hyphenated.

- (17) age-group, size-group, length-cohort; type *x*, *x*-type: Do not hyphenate adjectives of the forms “type *x*” and “group *x*” unless hyphenation is needed for clarity. Hyphenate all compound nouns and adjectives that end in “cohort,” “group,” or “type.”
- (18) *x* boat, *x*boat: Many boat types are open (e.g., charter boat, drift boat); others are closed (e.g., headboat, johnboat, motorboat, and speedboat). Open compounds can either be left open or hyphenated when used as adjectives.
- (19) angler-day, angler-hour, net-day; *x*-day, *x*-hour, *x*-kilometer, *x*-mile: Use a hyphen in these rate or effort terms and in specialized units of measure such as light-year (distance) and acre-foot (volume).
- (20) brood year, water year, etc.: These noun–noun combinations are measures of time (although they may be different from the calendar year); they are not efforts or rates (e.g., angler-hour) or units of measure (e.g., light-year), and like “fiscal year,” they are left open as nouns and adjectives.
- (21) bleb-like, virus-like; *x*like: Words formed with the suffix “like” are generally closed. However, “bleb-like” and “virus-like” are hyphenated for clarity and to follow common usage in the fish health literature.
- (22) ecosystem-wide; *x*wide: Words with the suffix “wide” are generally closed; however, CMS allows them to be hyphenated if the root word is long or of several (more than two) syllables (thus “ecosystem-wide” but “systemwide”).
- (23) compact disc, disc brakes, etc.: There is considerable variation in W11 in the use of “disk” versus “disc,” the former appearing to be the preferred spelling for most noncomputer terms except “disc brakes.” Use “disk” for electronic storage media and “disc” for optical and video storage media, and follow the dictionary for other words.
- (24) air bladder, gas bladder, swim bladder: These open compounds refer to the hydrostatic organ present in most fish. “Air bladder” and “gas bladder” are preferable to “swim bladder.” “Air sac” should be reserved for the air-filled space in birds.
- (25) length frequency, weight frequency: In keeping with the move toward not hyphenating noun–noun combinations used as adjectives, AFS no longer enforces its previous standard of hyphenating *x*-frequency words when they are used as adjectives. Hyphenated forms are acceptable, however.