APPENDIX O

GLOSSARY TERMS

2-sample t-test—uses ratio data to compare the means of two samples

Algorithm—a step-by-step problem-solving procedure, such as an established, recursive computational procedure for solving a problem in a finite number of steps

Analysis of variance (ANOVA) test—used to compare several samples at the same time

Avian radar ground truth (ARGT)—the act of verifying radar data by collecting visual observations of targets and comparing them with the radar

Bathymetry—the measurement of the depth of the ocean floor from the water surface

Batschelet test—a non-parametric test that is a modification of the Hodges-Ajne test (and is more powerful) such that a specific angle is specified when testing the null hypothesis

Bearing—the direction, usually in degrees, to a sighted object (e.g., bird)

Bin (data)—a group of data that represents a subset of the total data

Chi-square (X^2) GOF test—uses categorical data to determine an expected outcome

Circular statistics—used to determine the nature of the statistical distribution of avian flight directions and their variability with respect to species, taxonomic group, month, and season

Circular uniformity—having no mean direction

Clutter—non-targets that show up as a target on a radar screen; e.g., rain, waves

Clutter map—a map produced by a radar which identifies areas of clutter (static or dynamic objects) within the surveillance range of the radar

Confidence interval—quantification of how good a statistical estimate is

Cumulative—increasing in effect, size, quantity by successive additions

Cumulative frequency distribution (CFD)—useful in determining medians, percentiles, and other quantiles

Demultiplexer—a device that horizontally stretches each half of a mutiplexed video picture at its input and provides them separately at its two outputs

Detection (radar)—any echo with a reflectivity that is sufficiently above the real-time background clutter

Directional rose diagram (flight compass rose)—graphical representation of bird movement where the length of each "spoke" radiating off the center indicates the number of birds traveling in that direction

Diurnal—occurring during the daytime

Endangered species—a species that is in danger of becoming extinct throughout all or a significant portion of its range

False tracks—with reference to radar, tracks generated by non-biological targets (e.g., ships, planes, waves)

Flux—number of birds that pass through a specific vertical sample volume in a given unit of time

Generalized additive model (GAM)—useful for predicting the response of avian density at sea in terms of environmental predictors and survey effort, and for examining the influence and shape of explanatory variables for predicting changes in predator density at sea

Generalized linear model (GLM)—useful for predicting the response of avian density at sea in terms of environmental predictors and survey effort

Goodness-of-fit (GOF) test—used to test the statistical significance of conformity of a given sample of nominal scale data (e.g., counts, abundances) to a specified or expected frequency distribution

Guild (bird)—a group of birds that utilize resources in a similar way; e.g., ducks, loons, gulls, terns, etc.

Histogram—a graph of a frequency distribution with bars of equal width; the height of each bar represents a frequency value

Hodges-Ajne test—an omnibus test used to investigate whether a sample could arise from a uniformly distributed population

Homoscedacity—within a scatter plot, the scatter placement is essentially the same

Hotelling test—parametric test that requires the sample of directional datasets to conform to angular normal distribution and homoscedacity

Hotspot—a region where the avian density exceeds the mean by 1.96 standard deviations

Hypothesis—a proposed explanation for a phenomenon; it is scientifically tested to be accepted or rejected

Isobath—a contour line connecting points of equal water depths on a chart

Kernel density—a non-parametric smoothing interpolation method used to discern structure or relationships in data

Knot—a) a unit of speed measured as one nautical mile per hour. b) Distance measured as 1 nautical mile

Kolmogorov-Smirnov GOF test—a goodness-of-fit test used for ordinal (rank) data, and is more powerful than a chi-square test; used to assess whether observed data follow a normal distribution

Kriging—a geospatial interpolation method that can potentially be applied to estimate avian density from transect and radar data

Kruskal-Wallis test—non-parametric test for distributions drawn from more than two populations

Mann-Whitney test—non-parametric test for two samples

Mean—the average of a number of values

Mean traffic rate—the number of (radar) tracks through a set distance for a given period of time, used to determine fluxes or changes in the number of targets over an area

Median—the middle number when a set of values are arranged in numerical order

Migration traffic rate (MTR)—the number of birds (targets) crossing 1.6 km (1 mi) of front per hour

Moore's test—a non-parametric modification of the Rayleigh test, which can be used to test a sample of mean angles

Morphology—the form and structure of individual organisms

Multiplexer—a device that horizontally squeezes two unsynchronized video sources to fit in the left and right halves of a TV or monitor

Nautical mile—equivalent to 1.15 statue (land) miles or approximately 1.85 kilometers

Nearshore—an area adjacent to the coastline (e.g., sampling or MMS grid)

Non-parametric Wilcoxon paired-sample test—also called a signed-rank test; used to test the symmetry of a distribution around the median, using either 1-tailed or 2-tailed tests

Normal distribution—a symetrical distribution, represented on a graph by a bell curve, in which the number with the highest frequency is in the center and numbers with with the lowest frequency are at each end

Offshore—in general, all areas over water away from shore. In addition, offshore can be used to denote all areas not adjacent to land

Omnibus test—does not require the assumption of a unimodal data distribution and is applicable to unimodal, bimodal, and multimodal distributions

Ornithology—the study of birds

Paired-sample t-test—used for ecological data that consist of observations that are not totally independent between the two samples; the data are paired in some way

Parametric statistic—any statistic computed by procedures that assume the data were drawn from a normal distribution (i.e., has a mean and standard deviation)

Pelagic—refers to organisms that a) live at or near the surface of the ocean, far from land, or b) seabirds that live far out to sea and return to shore only to breed

Power analysis—allows one to decide how large a sample is needed to make statistical judgments

Pulse repetition frequency (PRF)—the number of times per second that radar transmits a pulse and listens

Quartile—(in a frequency distribution) one of the values of a variable which divides the distribution of the variable into four groups having equal frequencies

Range—distance to an object (e.g., bird, ship)

Radar echoes—reflected radar signal from an object

Recounted tracks—with reference to radar, a radar track(s) which have been dropped by the radar for a period and re-identified by the radar (following the same bearing and having the same flight speed as the initial target)

Rayleigh test—a parametric test used to determine whether the given sampled population is uniformly distributed around a circle (i.e., possesses circular uniformity)

Rotor swept zone (RSZ)—the area of sky encompassed by a wind turbine's blades

Scatter plot—a visual display of the relationship between two variables, represented as points displayed between two axes; the straighter the line the points form, the stronger the relationship between the two variables

Sea clutter—any static or dynamic object (e.g., ships, waves, meteorlogical towers) that has the potential, depending on size or strength, to prevent accurate collection of radar data

Sea state—condition of the sea, usually based on a scale of increasing wind and speed

Skew—to bias, distort, slant

Species of concern—informal term indicating a species that may need conservation action

Standard deviation (SD)—the square root of the variance (which is the dispersion around the mean of a sample or population)

Taxon—a group of organisms that represent a taxonomic rank (e.g., family, genus, species)

Temporal—pertaining to time

Thermal infrared camera—a camera that detects the heat generated by a target

Threatened species—a species that is likely to become endangered in the forseeable future

Topographic feature—any static or dynamic object (builing, car, trees, waves) on the land or the sea

Track (radar)—radar data that contain a target's range bearing, bearing, size, and strength

TracScan—an S-band, 10-cm [4-in] wavelength that determines the range, flight direction, speed, and heading of targets in a horizontal sample volume

Tri-sector—divide into three separate components

V-test—non-parametric test that is a modification of the Rayleigh test

VerCat—an X-band, 3-cm [1-in] wavelength that determines the altitude and range of targets of different size and is used to measure the flux of targets (the number of birds that passes through the vertical sample volume in a given unit of time)

Video peak store (VPS)—a memory-based device that captures either the darkest or whitest level for each input pixel and displays the feature's path over time

Virga—falling rain which evaporates before it hits the earth's surface

Watson's 1-sample U^2 GOF test—non-parametric test that normalizes the angular directional data from a 0° to 360° range to a range of 0 to 1

Wilcoxon paired-sample (signed rank) test—non-parametric two-sample test