Column Names in the BIEN Range Area Statistics Spreadsheets

The following outlines the meanings of the column names in the BIEN range area statistics spreadsheets. This is a superset of all columns returned from the modeling process.

Columns in Red are the important fields that have been extracted into a separate table named BIEN_Range_Area_Statistics_Only.csv that reports only range size metrics.

Also see the discussion on best model type and best model range area at the end of this document.

Basic Information

Species	Species name
Samples	Number occurrences
Unique	Number unique lat/long occurrences
latitudeRange	Range of latitude
longitudeRange	Range of longitude

Metrics for 1-2 Occurrence Points Modeled Using Gentry Box Method

gentryBoxType	Type of Gentry box area (if used)
gentryBoxArea	Gentry box area

Metrics for 3+ Occurrence Points

cellSize	Cell Size (for rasterized points/polygons)
pointArea	Area of cell occupancy
hullArea	Convex hull area
bboxArea	Bounding box area
latBandArea	Latitudinal band area
clipHullArea	Convex hull area (clipped to continent)
clipBboxArea	Bounding box area (clipped to continent)
clipLatBandArea	Latitudinal band area (clipped to continent)

Metrics Modeled for Only 5+ Occurrence Points

Maxent Bioclim

maxBioMaxentModelType	Maxent model type: Bioclim layers only
maxBioCellSize	Maxent cell size
maxBioCellAreaFixed	Range area from fixed threshold
maxBioCellAreaMaxSS	Range area from max sens+specif threshold
maxBioCellAreaBalSS	Range area from balanced sens+specif threshold
maxBioCellAreaMaxKappa	Range area from max Kappa threshold
maxBioCellAreaMTP	Range area from minimum training presence threshold
maxBioCellArea01TP	Range area from 1% training presence threshold
maxBioCellArea01TPClip	Range area from clipped 1% training presence threshold
maxBioCellArea05TP	Range area from 5% training presence threshold
maxBioCellArea10TP	Range area from 10% training presence threshold
maxBioTruePositives	Number of true positives (for contingency matrix)
maxBioFalsePositives	Number of false positives (for contingency matrix)
maxBioTrueNegatives	Number of true negatives (for contingency matrix)
maxBioFalseNegatives	Number of false negatives (for contingency matrix)
maxBioSensitivity	Sensitivity statistic
maxBioSpecificity	Specificity statistic

maxBioTotalAccuracy	Total accuracy statistic
maxBioAucScore	AUC score
maxBioCorrelationScore	Correlation score
maxBioMaxKappaScore	Max Kappa score
maxBioThresholdFixed	Value of fixed threshold
maxBioThresholdMaxSS	Value of maximum sens+specif threshold
maxBioThresholdBalSS	Value of balanced sens+specif theshold
maxBioThresholdMaxKappa	Value of max Kappa threshold
maxBioThresholdMTP	Value of minimum training presence threshold
maxBioThresholdp01TP	Value of 1% training presence threshold
maxBioThresholdp05TP	Value of 5% training presence threshold
maxBioThresholdp10TP	Value of 10% training presence threshold
maxBioShapefileWritten	Yes/No if shapefile was written
maxBioElapsedTime	Elapsed Maxent model time

Maxent Spatial

maxSpaMaxentModelType	Maxent model type: Spatial filters only
maxSpaCellSize	Maxent cell size
maxSpaCellAreaFixed	Range area from fixed threshold
maxSpaCellAreaMaxSS	Range area from max sens+specif threshold
maxSpaCellAreaBalSS	Range area from balanced sens+specif threshold
maxSpaCellAreaMaxKappa	Range area from max Kappa threshold
maxSpaCellAreaMTP	Range area from minimum training presence threshold
maxSpaCellArea01TP	Range area from 1% training presence threshold
maxSpaCellArea01TPClip	Range area from clipped 1% training presence threshold
maxSpaCellArea05TP	Range area from 5% training presence threshold
maxSpaCellArea10TP	Range area from 10% training presence threshold
maxSpaTruePositives	Number of true positives (for contingency matrix)
maxSpaFalsePositives	Number of false positives (for contingency matrix)
maxSpaTrueNegatives	Number of true negatives (for contingency matrix)
maxSpaFalseNegatives	Number of false negatives (for contingency matrix)
maxSpaSensitivity	Sensitivity statistic
maxSpaSpecificity	Specificity statistic
maxSpaTotalAccuracy	Total accuracy statistic
maxSpaAucScore	AUC score
maxSpaCorrelationScore	Correlation score
maxSpaMaxKappaScore	Max Kappa score
maxSpaThresholdFixed	Value of fixed threshold
maxSpaThresholdMaxSS	Value of maximum sens+specif threshold
maxSpaThresholdBalSS	Value of balanced sens+specif theshold
maxSpaThresholdMaxKappa	Value of max Kappa threshold
maxSpaThresholdMTP	Value of minimum training presence threshold
maxSpaThresholdp01TP	Value of 1% training presence threshold
maxSpaThresholdp05TP	Value of 5% training presence threshold
maxSpaThresholdp10TP	Value of 10% training presence threshold
maxSpaShapefileWritten	Yes/No if shapefile was written
maxSpaElapsedTime	Elapsed Maxent model time

Maxent Bioclim+Spatial

maxBioSpaMaxentModelType	Maxent model type: Bioclim layers + Spatial filters

maxBioSpaCellSize	Maxent cell size
maxBioSpaCellAreaFixed	Range area from fixed threshold
maxBioSpaCellAreaMaxSS	Range area from max sens+specif threshold
maxBioSpaCellAreaBalSS	Range area from balanced sens+specif threshold
maxBioSpaCellAreaMaxKappa	Range area from max Kappa threshold
maxBioSpaCellAreaMTP	Range area from minimum training presence threshold
maxBioSpaCellArea01TP	Range area from 1% training presence threshold
maxBioSpaCellArea01TPClip	Range area from clipped 1% training presence threshold
maxBioSpaCellArea05TP	Range area from 5% training presence threshold
maxBioSpaCellArea10TP	Range area from 10% training presence threshold
maxBioSpaTruePositives	Number of true positives (for contingency matrix)
maxBioSpaFalsePositives	Number of false positives (for contingency matrix)
maxBioSpaTrueNegatives	Number of true negatives (for contingency matrix)
maxBioSpaFalseNegatives	Number of false negatives (for contingency matrix)
maxBioSpaSensitivity	Sensitivity statistic
maxBioSpaSpecificity	Specificity statistic
maxBioSpaTotalAccuracy	Total accuracy statistic
maxBioSpaAucScore	AUC score
maxBioSpaCorrelationScore	Correlation score
maxBioSpaMaxKappaScore	Max Kappa score
maxBioSpaThresholdFixed	Value of fixed threshold
maxBioSpaThresholdMaxSS	Value of maximum sens+specif threshold
maxBioSpaThresholdBalSS	Value of balanced sens+specif theshold
maxBioSpaThresholdMaxKappa	Value of max Kappa threshold
maxBioSpaThresholdMTP	Value of minimum training presence threshold
maxBioSpaThresholdp01TP	Value of 1% training presence threshold
maxBioSpaThresholdp05TP	Value of 5% training presence threshold
maxBioSpaThresholdp10TP	Value of 10% training presence threshold
maxBioSpaShapefileWritten	Yes/No if shapefile was written
maxBioSpaElapsedTime	Elapsed Maxent model time

Best Model Type and Area

In addition, we have added two columns to report the "Best Model" type and "Best Model" range area. These columns are named bestModelType and bestModelRangeArea. The "Best Model" depends on what types of range area models were possible for each species. The decision tree to determine the best model is:

For each species:

a. If a maxent model **was** run
- the best model type is: "Maxent BioclimSpatial"
- the best model area is the value reported in the column: maxBioSpaCellArea01TPClip

b. If a maxent model was **NOT** run but we have data for convex hull
- the best model type is: "Convex Hull"
- the best model area is the value reported in the column: clipHullArea

c. If a maxent model was **NOT** run and we do **NOT** have data for convex hull
- the best model type is the text reported in the column: gentryBoxType
- the best model area is the value reported in the column: gentryBoxArea