

Simple manual for PatternCastE.exe Fumito Koike

PatternCastE provides a simple supervised method for forecasting the expansion of the geographic range of non-indigenous species without any detailed information on the pathway mechanisms. It is a English translated version of a component "PatternCast" in a spatial information analysis system, Minna de GIS (meaning GIS for everyone in Japanese). Full program is available at <http://www.minnagis.com/>.

Usage instruction

1. Specify the data filename and read it.
2. Select species to be analyzed. One species to be predicted is specified in the text box for "target species", and training species for "training species and target species". The target species should be chosen again for "training and target species". The weight for the target species is set to be zero in prediction automatically. Other options can be remained as defaults.
3. Go program. The results will appear on the right side, and it can be saved to log.csv file.

GIS file format

Data is in comma separated value (csv) file in geographic information system (GIS), Minna de GIS. One line represents one object (region, etc.) including both measured data and the shape of the object.

Example of a vector file. Bold names are fixed keywords. Italics are key word having some options.

vector								
comment								
variable 1	variable 2	...	variable n	type\$	name\$	NodeNum	xy1	xy2
...	...	...	...	<i>point</i>	Tokyo	1	x coordinate	y coordinate
...	...	...	...	...	...	...	...	...

For the file header, "vector" specifies that the file is vector file format, not raster format.

Comment in the second line in one cell is required. The coordinate system and other information can be described here.

The third line gives variable names as arbitral number of measured variables (variable 1-variable n), and variables describing the shape of the object (after type\$). A type\$ variable describes the type of each object as "point" (point), "line" (polyline), "polygon" (closed polygon), "area" (combined polygons as doughnut shaped land and islands). Name of regions are in name\$, NodeNum represents the necessary number of nodes to describe the shape of the object (number of vertex for polygon, etc). PatternCastE does not use any shape information, and a simple dummy shape data can be specified; type\$="point", name\$=region name as Tokyo, NodeNum=1, x-coordinate=0, y-coordinate=0.

Describing infestation dates

Dataset of infestation date is at the place of measured variables (variable 1 to variable n); species names are variable names as Supplemental Table S 1.2, names of regions are in the variable name\$.