Features meaning in EcoTaxa

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Feature from EcoTaxa	**Description**	**Remarks**
area	Surface area of the object in square pixels	Gorsky *et al.*, 2010
mean	Average grey value within the object ; sum of the grey values of all pixels in the object divided by the number of pixels	Gorsky *et al.*, 2010
stddev	Standard deviation of the grey value used to generate the mean grey value	Gorsky *et al.*, 2010
mode	Modal grey value within the object	Gorsky *et al.*, 2010
min	Minimum grey value within the object (0 = black)	Gorsky *et al.*, 2010
max	Maximum grey value within the object (255 = white	Gorsky *et al.*, 2010
bouding rectangle	*The smallest rectangle enclosing the selection uses by the heading*	
x	X position of the center of gravity of the object	Gorsky *et al.*, 2010
y	Y position of the center of gravity of the object	Gorsky *et al.*, 2010
xm	X position of the center of gravity of the object's grey level	Gorsky *et al.*, 2010
ym	Y position of the center of gravity of the object's grey level	Gorsky *et al.*, 2010
perim.	The length of the outside boundary of the object	Gorsky *et al.*, 2010
bx	X coordinates of the top left point of the smallest rectangle enclosing the object	Gorsky *et al.*, 2010
by	Y coordinates of the top left point of the smallest rectangle enclosing the object	Gorsky *et al.*, 2010
width	Width of the smallest rectangle enclosing the object	Gorsky *et al.*, 2010
height	Height of the smallest rectangle enclosing the object	Gorsky *et al.*, 2010

major	Primary axis of the best fitting ellipse for the object	Gorsky *et al.*, 2010
minor	Secondary axis of the best fitting ellipse for the object	Gorsky *et al.*, 2010
angle	Angle between the primary axis and a line parallel to the x-axis of the image	Gorsky *et al.*, 2010
circ.	circularity : $(4*\pi*Area)/Perim^2$ a value of 1 indicates a perfect circle, a value approaching 0 indicates an increasingly elongated polygon	Gorsky *et al.*, 2010
feret	Maximum feret diameter, i.e. the longest distance between any two points along the object boundary	Gorsky *et al.*, 2010
intden	Integrated density. The sum of the grey values of the pixels in the object (i.e. = Area*Mean)	Gorsky *et al.*, 2010
median	Median grey value within the object	Gorsky *et al.*, 2010
skew	Skewness of the histogram of grey level values	Gorsky *et al.*, 2010
kurt	Kurtosis of the histogram of grey level values	Gorsky *et al.*, 2010
%area	Percentage of object's surface area that is comprised of holes, defined as the background grey level	Gorsky *et al.*, 2010
xstart	X coordinate of the top left point of the image	Gorsky *et al.*, 2010
ystart	Y coordinate of the top left point of the image	Gorsky *et al.*, 2010
area_exc	Surface area of the object excluding holes, in square pixels (=Area*(1-(%area/100))	Gorsky *et al.*, 2010
fractal	Fractal dimension of object boundary (Berube and Jebrak, 1999)	Gorsky *et al.*, 2010
skelarea	Surface area of skeleton in pixels. In a binary image, the skeleton is obtained by repeatedly removing pixels from the edges of objects until they are reduced to the width of a single pixel	Gorsky *et al.*, 2010

slope	Slope of the grey level normalized cumulative histogram	Gorsky *et al.*, 2010
histcum1	grey level value at 25% of the normalized cumulative histogram of grey levels	Gorsky *et al.*, 2010
histcum2	grey level value at 50% of the normalized cumulative histogram of grey levels	Gorsky *et al.*, 2010
histcum3	grey level value at 75% of the normalized cumulative histogram of grey levels	Gorsky *et al.*, 2010
XMg5	X position of the center of gravity of the object, using a gamma value of 51	Gorsky *et al.*, 2010
YMg5	Y position of the center of gravity of the object, using a gamma value of 51	Gorsky *et al.*, 2010
nb1	Number of remaining objects in the image after thresholding on level Histcum1	
nb2	Number of remaining objects in the image after thresholding on level Histcum2	
nb3	Number of remaining objects in the image after thresholding on level Histcum2	
compentropy		
compmean		
compslope		
compm1		
compm2		
compm3		
symetrieh	Bilateral horizontal symmetry index.	Romagnan *et al.*, (2016)
symetriev	Bilateral vertical symmetry index.	Romagnan *et al.*, (2016)
symetriehc	Symmetry of the object in relation to the horizontal axis after thresholding at the grey level Histcum1 value	Romagnan com. pers.

symetrievc	Symmetry of the object in relation to the vertical axis after thresholding at grey level Histcum1 value	Romagnan com. pers.
convperim	The perimeter of the smallest polygon within which all points in the objet fit	Romagnan *et al.*, (2016)
convarea	The area of the smallest polygon within which all points in the objet fit	Romagnan *et al.*, (2016)
fcons	Measure of contrast based on the texture feature descriptor (Amadasun and King, 1989)	
thickr	Thickness Ratio ; relation between the maximum thickness of an object and the average thickness of the object excluding the maximum	Romagnan *et al.*, (2016)
tag	ancienne variable dont on ne sert plus (0 ou 1 –> 1 si objet "taggué" doublon)	Romagnan com. pers.
esd	equivalent spherical diameter	To check - **customized variable**
elongation	major/minor	**- customized variable**
range	max-min	**- customized variable**
meanpos	$(max - min)/range$	**- customized variable**
centroids	$\sqrt{(xm - x)^2 + (ym - y)^2}$	To check. - **customized variable**
cv	$100 * (stdv/mean)$	**- customized variable**
sr	$100 * (stdev/(max - min))$	**- customized variable**
perimareaexc	$perim/area\_exc$	To check. - **customized variable**
feretareaexc	$feret/area\_exc$	To check. - **customized variable**
perimferet	$perim/feret$	**- customized variable**
perimmajor	$perim/major$	**- customized variable**

circex	$(4 * \pi * Area\_exc)/perim^2$	To check.- **customized variable**
cdexc	$(centroid)^2/area\_exc$	To check.- **customized variable**

Bibliography

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