**Protected Areas Land Cover Analysis**

This is the description of the model: "Protected Areas Land Cover Analysis" found in the GIS repository. The aim of this model is to automate a particular workflow for protected areas (PAs), using imagery as raw product data, and involving a supervised classification and an analysis of the extent of land cover categories inside and outside of the boundaries of PAs.

1) **Create Mosaic Dataset**. Given the case that the study area comprises more than one satellite image, a mosaic is created from such dataset. If the dataset is multispectral imagery, a layer stack step might be necessary in this stage of the processing.
   **Note**: it's recommended to subset the imagery to the area of interest (AOE) prior to this first step, which reduces considerably the processing speed and the size of the files.
2) **Maximum Likelihood Classification**. Supervised classification, which requires:
   a. The imagery mosaic dataset.
   b. The signature file, derived from the creation of training samples of zones in which the land cover category is known. For this specific case, four major categories were used: vegetation, water, crop, urban.
3) **Raster to polygon**. Conversion of the classified raster dataset to a polygon feature.
4) **Buffer**. Creation of a buffer around the boundaries of the PA. The aim is to measure the size of mainly the vegetation and crop categories outside the PA limits. The buffer distance depends on the user needs.
5) **Clip**. Clip of classified raster with the created buffer polygon feature.
6) **Select By Attribute**. Selection of the vegetation areas from the clip feature attribute table.
7) **Make Feature Layer**. Creation of a temporal feature layer from the attributes selected.
8) **Summary Statistics**. Calculation of statistics, specially the sum, to know how much vegetation and crop are in the buffer zone and inside the PA. The same process can be done for any other land cover category.

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