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## **Assignment: Entity datatype and applicable GIS operations**

In the table below, put ‘X’ in a cell if the GIS operation can be meaningfully applied on the corresponding entity type. Submit the completed table in a separate Word document.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Intersection | Raster layer zonal statistics | Zonal statistics | Interpolation |
| Event |  |  |  | x |
| Track | X |  |  | X |
| Contour |  |  |  |  |
| Patch |  | x | x | x |
| Coverage |  | x | x | x |
| Field Raster |  | x | x |  |
| Point Measures |  |  |  | x |
| Line Measures |  |  |  |  |
| Object |  |  |  |  |
| Lattice | x |  | x | x |
| Amount |  | x | x |  |
| Network |  | x | x |  |

**Intersection**: Extracts the portions of features from the input layer that overlap features in the overlay layer. Features in the intersection layer are assigned the attributes of the overlapping features from both the input and overlay layers. Attributes are not modified. Intersecting lattices, in contrast, requires areal interpolation instead.

The intersection of **tracks** results in a sub track, for example 2 flying paths, from different species results in a path of “both” species. In the other hand for example, **contours**, are fields with different attributes, so intersect of different **contours** will not result in something meaningful, like air pressure and air temperature.

**Raster layer zonal statistics**: Calculates statistics for a raster layer’s values, categorized by zones defined in another raster layer.

The example of outputs are minimum and maximum values of a raster.

**Zonal Statistics:** Calculates statistics of a raster layer for each feature of an overlapping polygon vector layer.

As statistics are just the values in rasters, we can`t have zonal statistics in vectors for example. We can calculate Volume and Area for instance.

**Interpolation**: Spatial interpolation is the process of using points with known values to estimate values at other unknown points. In GIS, spatial interpolation of these points can be applied to create a raster surface with estimates made for all raster cells. Point interpolation is applicable if and only if a point data set represents a field, and not a collection of objects or events.

For example, interpolation of events using previous events to predict new ones.