# Terrain

The Terrain let The Landscape modules lets you add terrains and plants to any region.

Graphical user interface, application

Description automatically generated

The left side has 4 types of auto or premade terrains. The right side lets you browse and apply to any region any saved Terrain.

## Menu:

* Load Terrain – You can choose any of the many pre-defined terrain files or browse to another location. The system supports PNG, RAW, R32, and TER (Terragen) formats
* Save Terrain – The system will save the selected region file in the above 4 formats along with a JPG image.
* Save All Terrains – The system will save the selected region file in the above 4 formats along with a JPG image in all running regions as well as all Idled Smart Start Regions.
* View Terrain Folder - open file explorer to the Opensim\bin\Terrain\ folder

# Terrain Section

The left side has a set of functions for what effect to apply to the land.

Options: These modify the chosen effect

**Just Options** – ignore the terrain land, just apply the options.

**Smooth**: smooths the land. The smoothing operation is somewhat different than the others, as it does not deal with elevation values, but rather with strength values (in the range of 0.01 to 0.99). The algorithm is simplistic in averaging the values around a point, and is implemented as follows:

The "strength" parameter specifies how much of the result is from the original value ("strength" \* map[x,y]).

The "taper" parameter specifies how much of the remainder is from the first ring surrounding the point (1.0 - "strength") \* "taper". There are 8 elements in the first ring.

The remaining contribution is made from the second ring surrounding the point. There are 16 elements in the second ring.

e.g.

*terrain modify smooth 0.5 -taper=0.6*

* the original element will contribute 0.5 \* map[x0,y0]
* each element 1m from the point will contribute ((1-0.5)\*0.6)/8 \* map[x1,y1]
* each element 2m from the point will contribute ((1-0.5)\*0.4)/16 \* map[x2,y2]

**Noise -** The smooth value represents a delta amount (at centre of range)

**Taper** - represents a delta amount (at edges of range)

## Land Types

**Flat** – Land is always flat. The Option “Noise” will make the land bumpy. This makes nice underwater if the Option for Height is set below water level of 20 meters.

**Random Terrain -** uses one of the saved terrains. Options can apply

Water – The same as flat land with Height set to 0

Generated – a series of steps are applied:

* Options are set for Min Level between 22 and 40 meters
* Taper between 0 and 135 meters high
* Upon setting Apply the system will have:
* One in 6 chance fill of land at Height meters with the random taper
* One in 6 chance for low lying land at 12 meters with lots of noise
* One in 6 chance for center to be squared from 20 to 40 meters with the random taper
* One in 6 chance for water level with a variable raised bump with noise
* One in 6 chance for water level with a variable raised bump