

Figure 52. iTiles Class Diagram

Class	Description
blockHeader	2D widget for a blocked header
bmpTexture	Object for storing a Windows BMP texture file
button	2D widget for a button
displayComponent	The base class each 2D widget
dynamicWorldObject	Dynamic world object. Extends worldObject
idMaintainer	For maintaining objects with unique IDs
imageButton	2D widget class for a button with an image
introPageDisplay	Introduction screen display class (See Figure 36)
iTilesDisplay	An interface class for abstracting GLUT
iTilesDisplayManager	Singleton management class for display
iTilesMainMenu	iTiles Menu system
iTilesSystemManager	Singleton management class for system functions
iTilesTextureManager	Singleton management of textures. Texture caching
iTilesVirtualWorld	iTiles Virtual World tool logic class
iTilesVirtualWorldDisplay	Display class for the iTiles Virtual World. Extends iTilesDisplay
iTilesVirtualWorldFactory	Factory for creating world objects and tiles for the simulation
iTilesVirtualWorldInitialiser	Initialising a world for the iTiles Virtual World tool
iTilesWorkBench	iTiles Workbench tool logic class
iTilesWorkBenchDisplay	Display for the iTiles Workbench tool. Extends iTilesDisplay
iTilesWorkBenchDisplayControl	For world object authoring
iTilesWorkBenchDisplayList	For the list of world objects (See left part of Figure 39)
iTilesWorldFlow	iTiles World Flow tool logic class
iTilesWorldFlowDisplay	Display for the iTiles World Flow tool. Extends iTilesDisplay
iTilesWorldFlowInitialiser	Initialiser for the iTiles World Flow tool
listDisplay	2D widget for a list (See Figure 23)
listObject	Base class for classes to be displayed in a list
mlkLoad	Object for storing a Milkshape 3D model
movementForce	Object for a movement force
movementForceDisplay	Screen for capturing a movement force (See Figure 62)
movementForceManager	Movement force management for a dynamic world object
negativeForce	Object for a negative force
negativeForceDisplay	Screen for capturing a negative force (See Figure 68)
negativeForceManager	Negative force management for a dynamic world object
plusMinusControl	2D widget class for a numeric field with plus and minus
positiveForce	Object for a positive force
positiveForceDisplay	Screen for capturing a positive force (See Figures 57-60)
positiveForceManager	Positive force management for a dynamic world object
radioButton	2D widget class for a radio button
radioButtonGroup	Management class for radio buttons belonging to the same group
StreamTokenizer	Utility class for manipulating file streams as tokens
stringTokenizer	Utility class for manipulating strings as tokens
tabButton	2D widget class for tab button
tabButtonGroup	Management class for tab buttons belonging to the same group
tgload	Object for storing a Targa TGA texture file (used with the mlkLoad class)
tile	Object for a tile
tileQuadrant	A tileQuadrant extends tile, for use in the iTiles Virtual World tool
tileTransformation	Object for a tile transformation. Extends transformation

tileTransformationDisplay	Screen for capturing a tile transformation (See Figure 66)
transformation	Object for a transformation
transformationManager	Transformation management for world objects and tiles
transformationsChooser	A custom 2D widget for choosing transformations
transformationTrigger	Object for a transformation trigger
transformationTriggerManager	Management of transformation triggers
vision	Vision of a dynamic world object
workBenchWorld	A world for the iTiles Workbench tool
world	A world for the iTiles Virtual World tool
worldContentsSelectionDisplay	iTiles World Flow utility screen (See Figure 56, 61, 63, 65, or 67)
worldFlowMainDisplay	iTiles World Flow screen for main selection (See Figure 53, 54 or 55)
worldObject	Object for an iTiles world object
worldObjectTransformation	Transformation for a world object. Extends transformation
worldObjectTransformationDisplay	Screen for capturing a world object transformation (See Figure 64)
worldObjectType	World object type class
worldObjectTypesManager	Management of world object types in an iTiles system (interface for world objects)
worldSound	Representing a WAV file
worldSoundChooser	Custom 2D widget for selecting world sounds. (See Figure 23)
worldSoundsManager	Management of world sounds in an iTiles system (interface for world sounds)

Table 4: iTiles classes description

Appendix B

iTiles World Flow tool screens

This section presents screenshots of screens of the iTiles World Flow tool. The screenshots presented in Figure 53 – 66 have been captured from the iTiles World Flow tool for the iTiles World Flow of the Drought in Africa virtual laboratory presented in Chapter 5.

Figure 23. Dynamic world objects list (iTiles World Flow tool screen)



Figure 24. Static world objects list (iTiles World Flow tool screen)

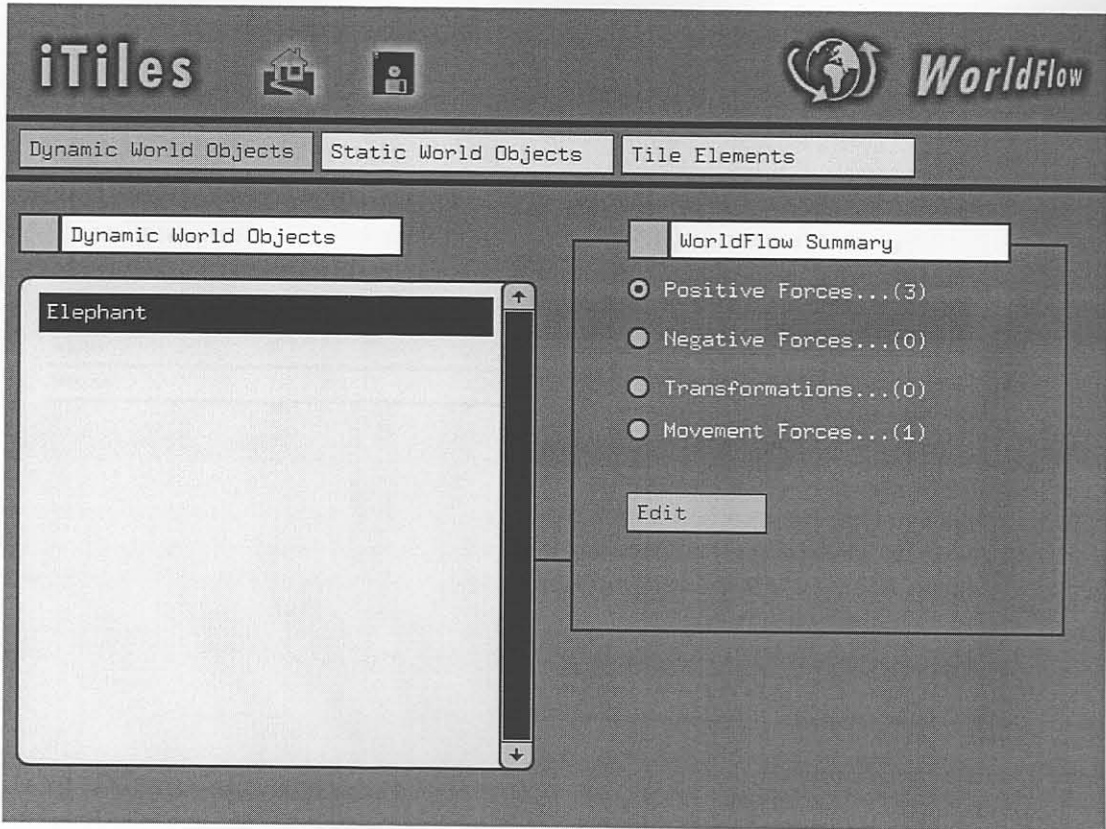


Figure 53. Dynamic world objects list (iTiles World Flow tool screen)

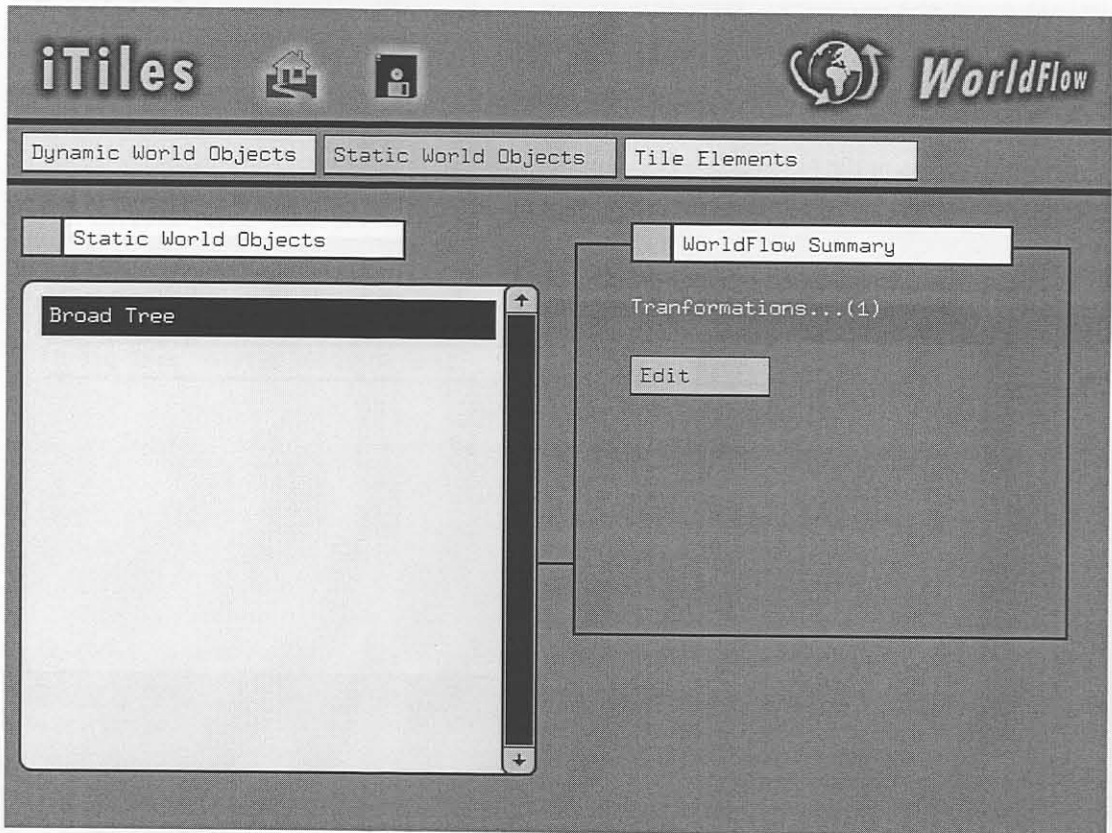


Figure 54. Static world objects list (iTiles World Flow tool screen)

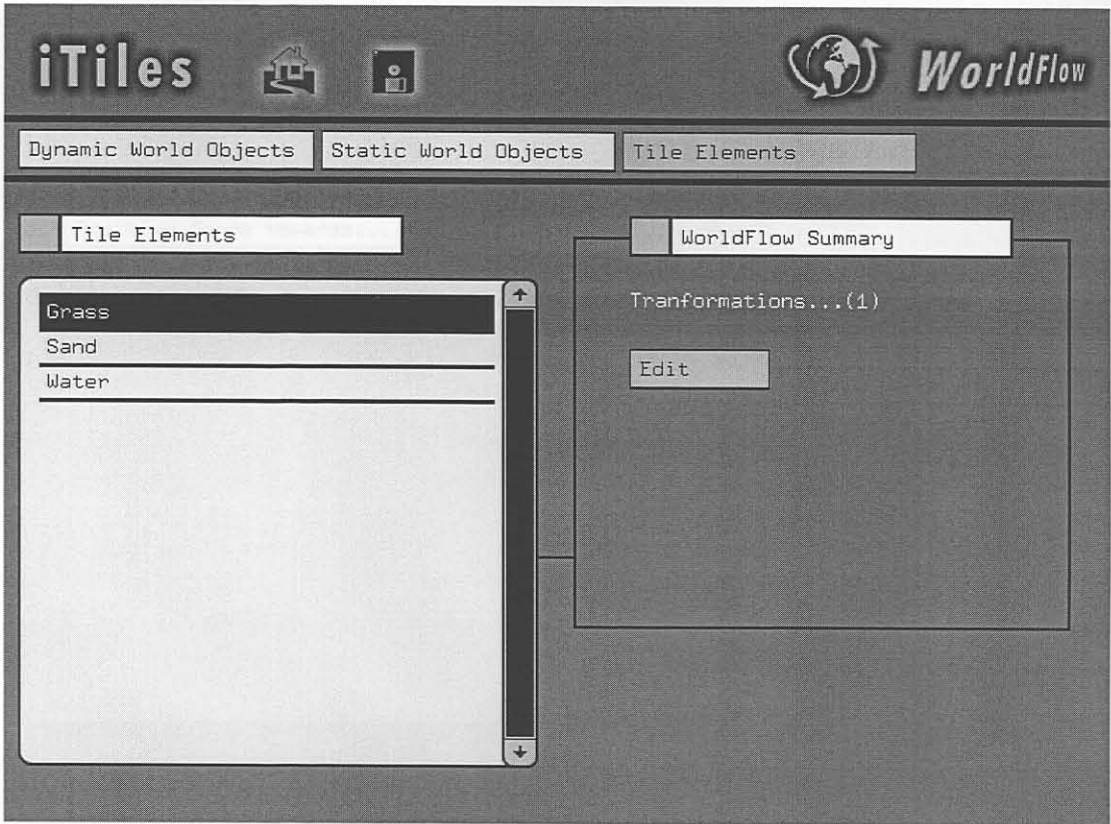


Figure 55. Tile elements list (iTiles World Flow tool screen)

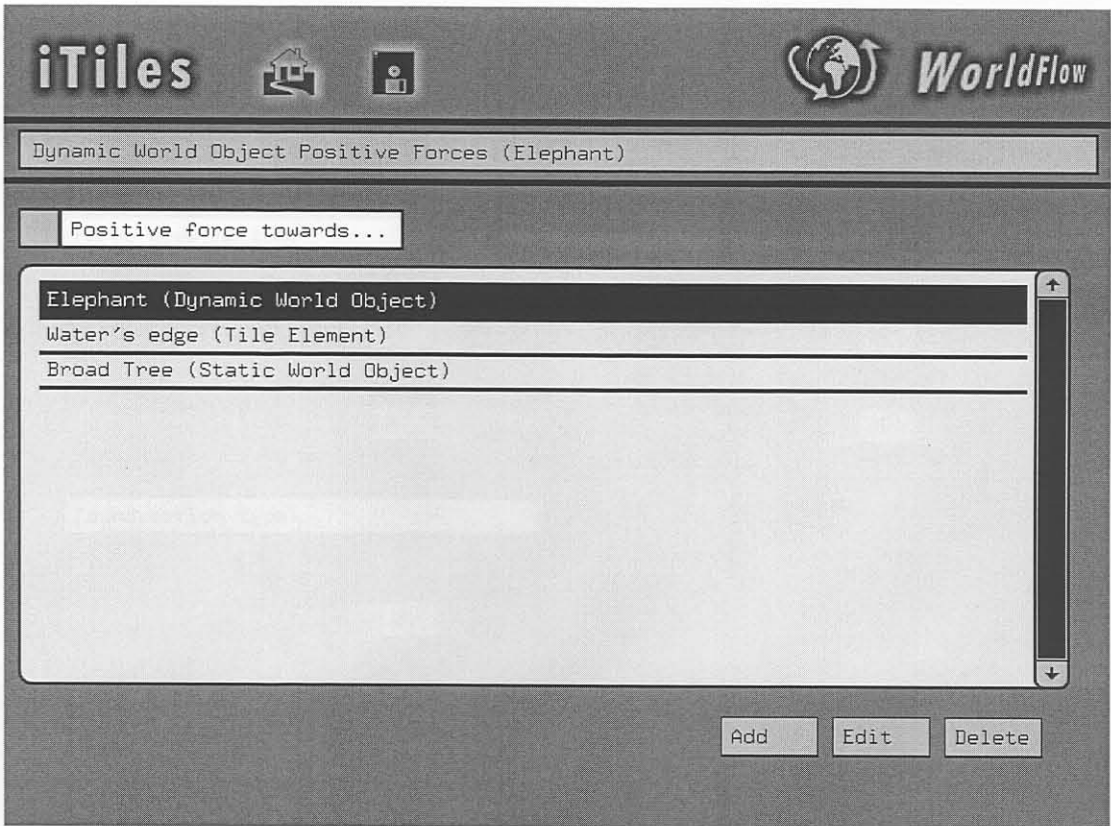


Figure 56. Positive forces list of a dynamic world object (iTiles World Flow tool screen)

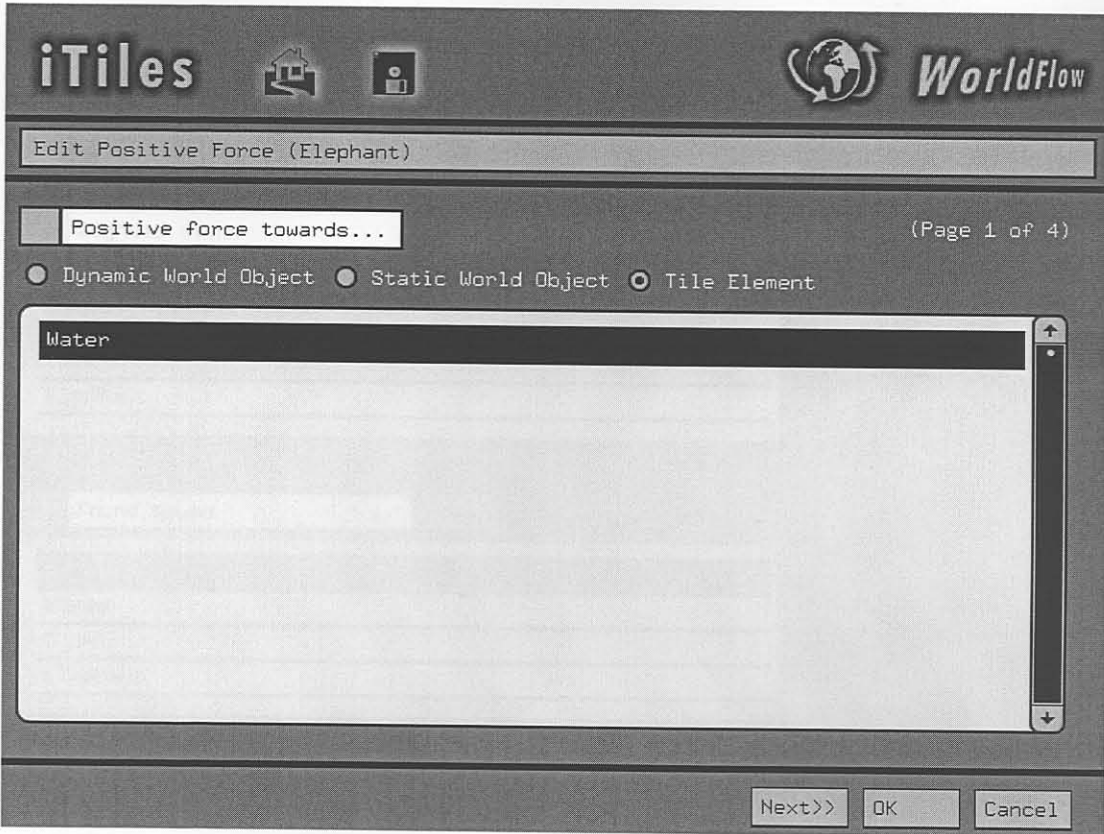


Figure 57. Positive force of a dynamic world object - Page 1 (iTiles World Flow tool screen)

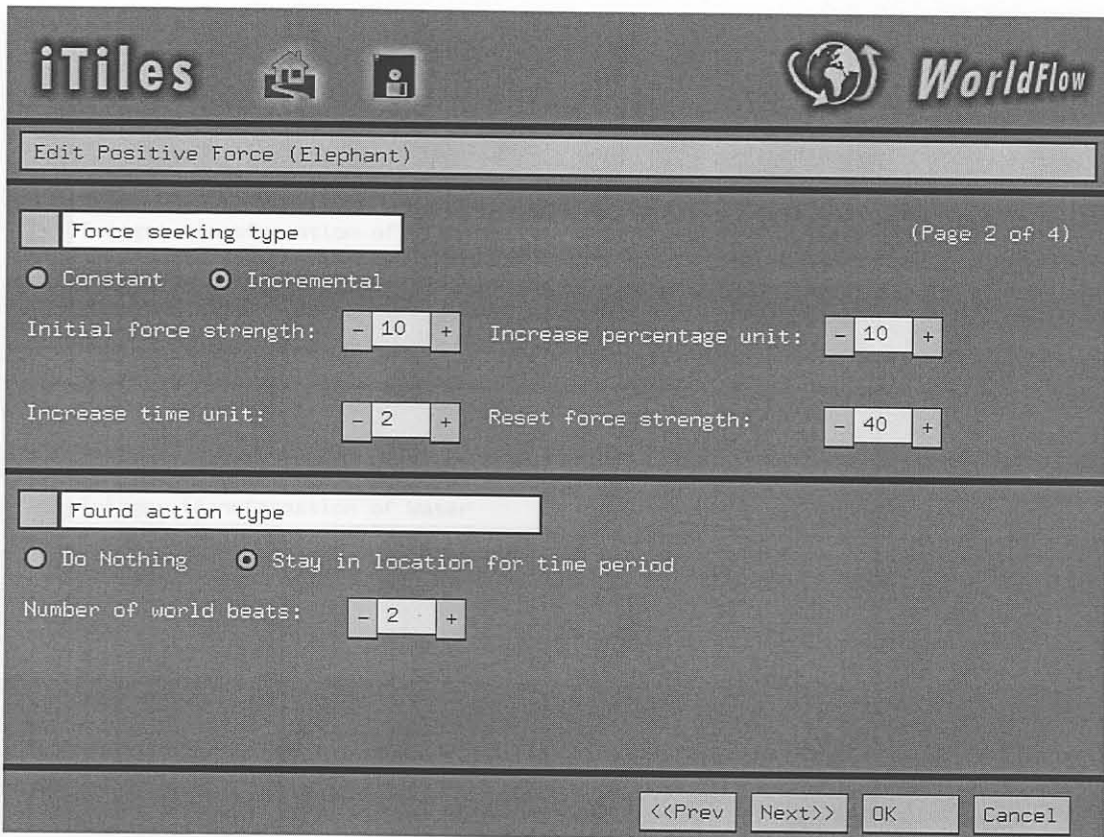


Figure 58. Positive force of a dynamic world object – Page 2 (iTiles World Flow tool screen)

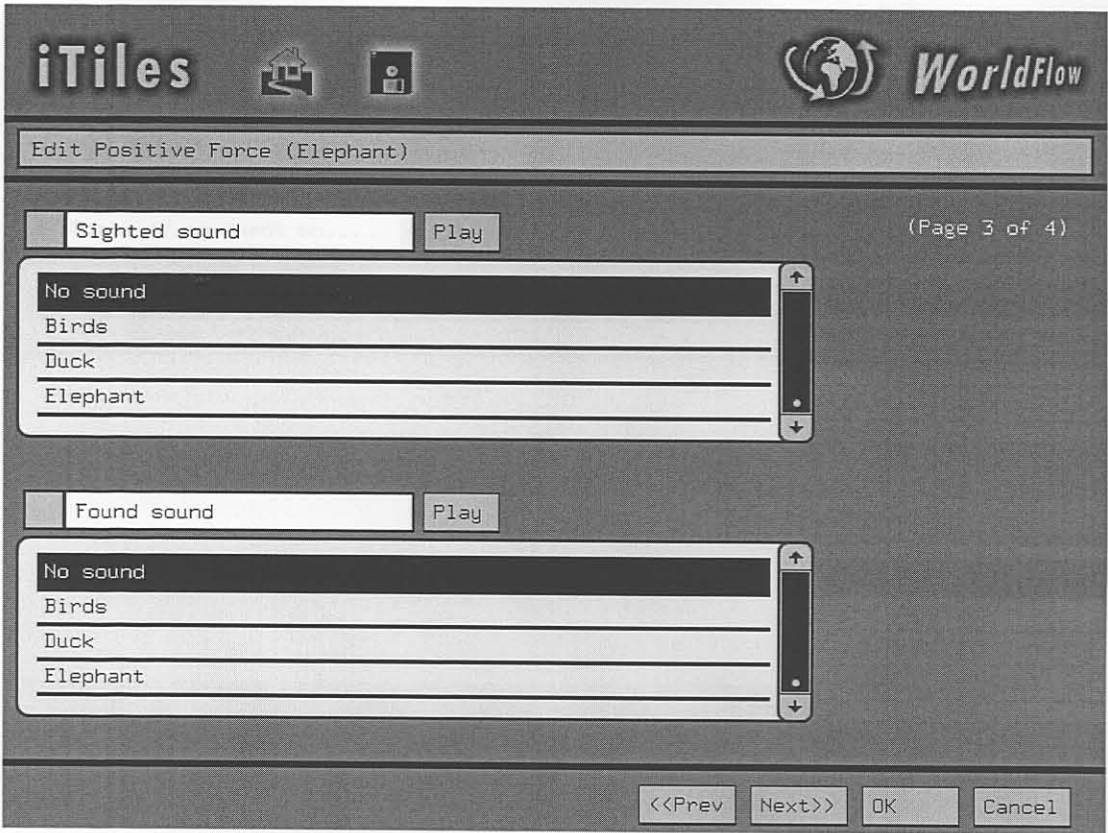


Figure 59. Positive force of a dynamic world object – Page 3 (iTiles World Flow tool screen)

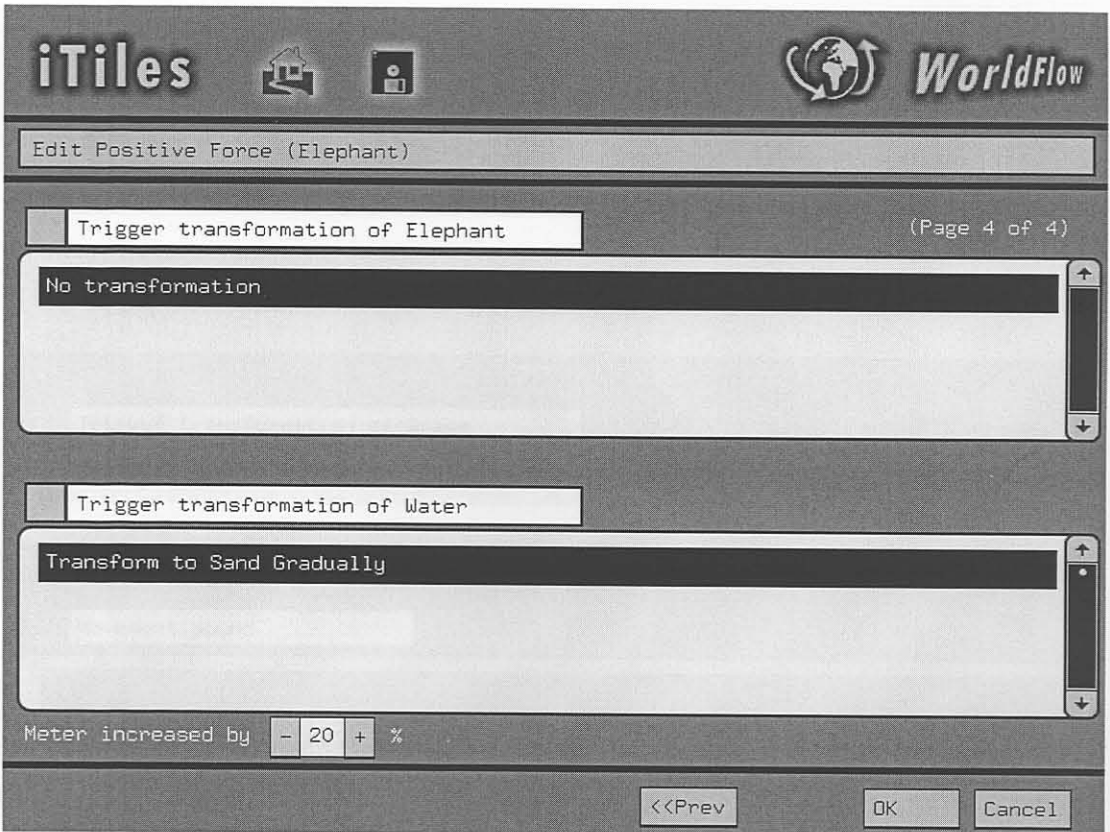


Figure 60. Positive force of a dynamic world object – Page 4 (iTiles World Flow tool screen)

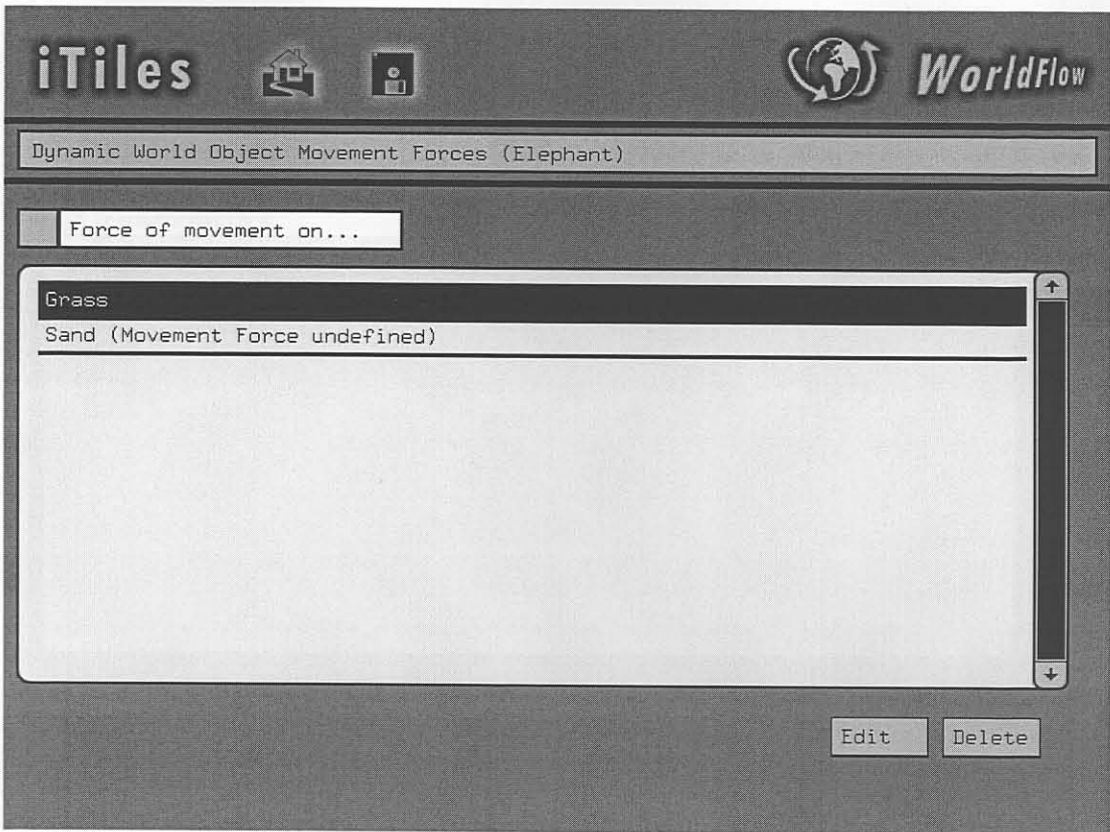


Figure 61. Movement forces list of a dynamic world object (iTiles World Flow tool screen)

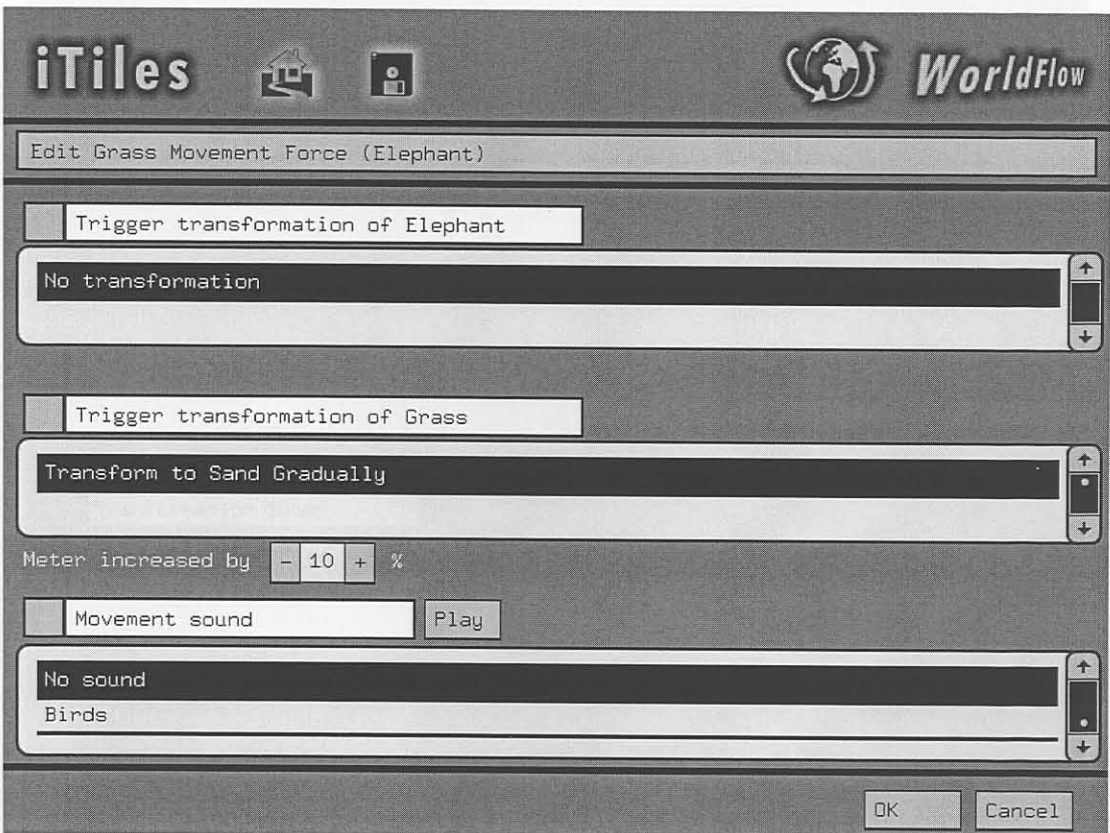


Figure 62. Movement force of a dynamic world object (iTiles World Flow tool screen)

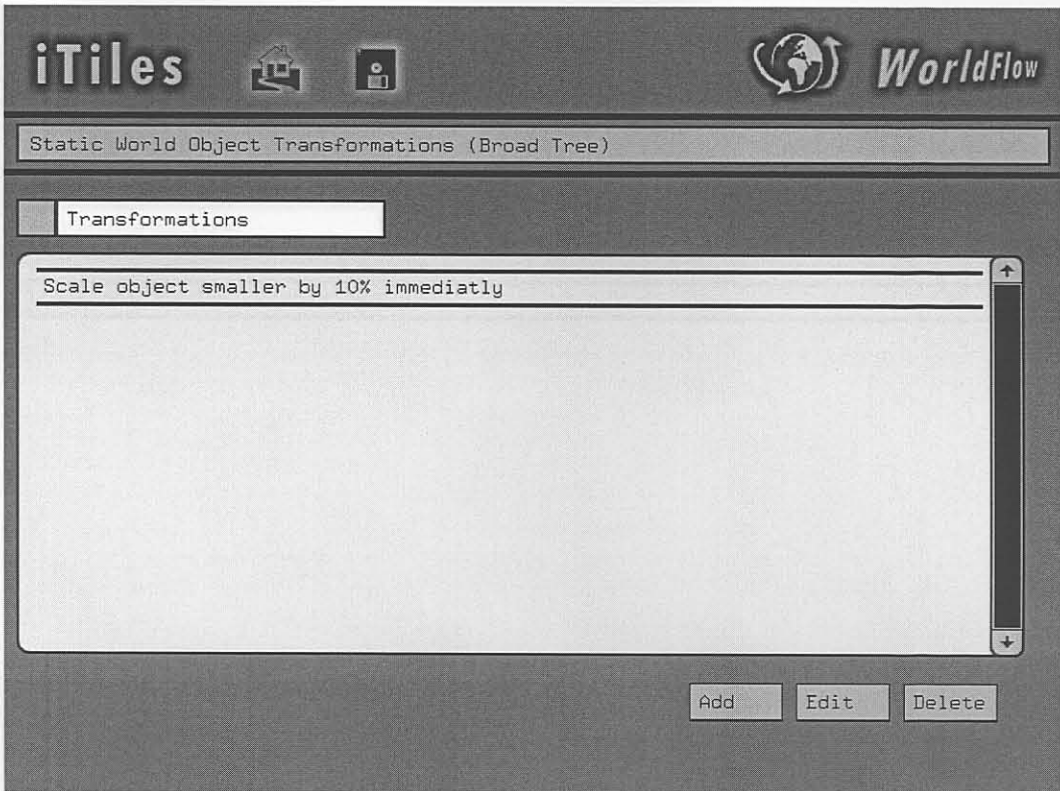


Figure 63. World object transformations list of a static world object (iTiles World Flow tool screen)

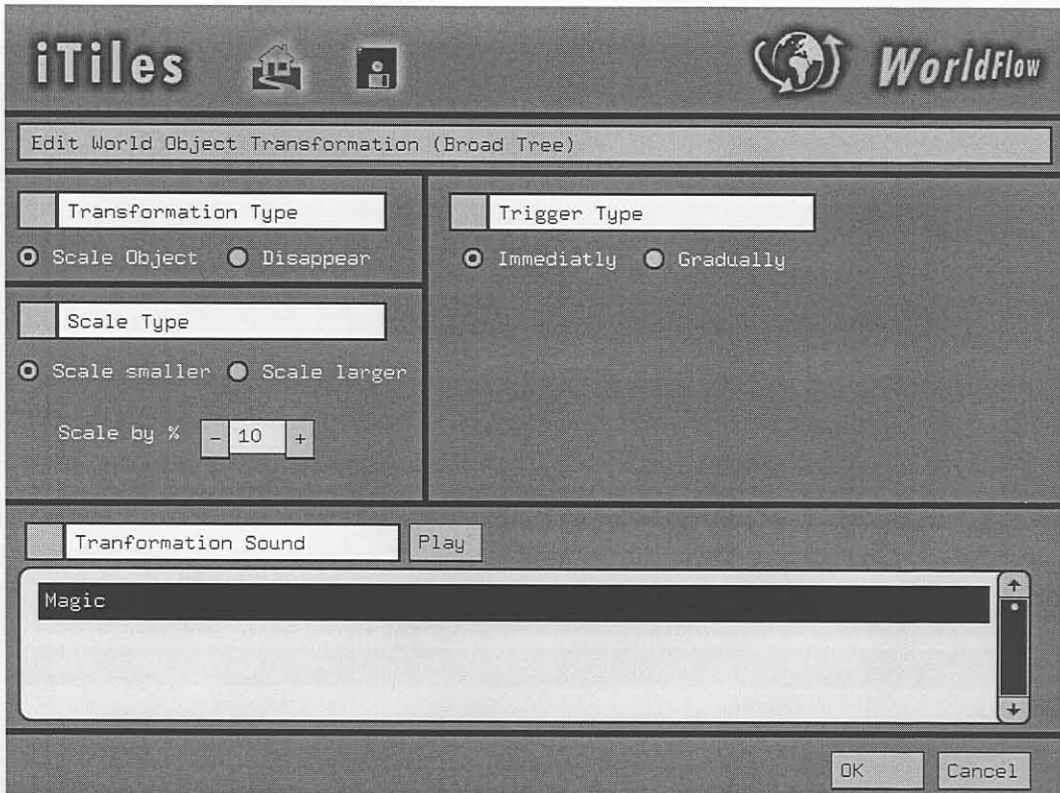


Figure 64. World object transformation of a static world object (iTiles World Flow tool screen)

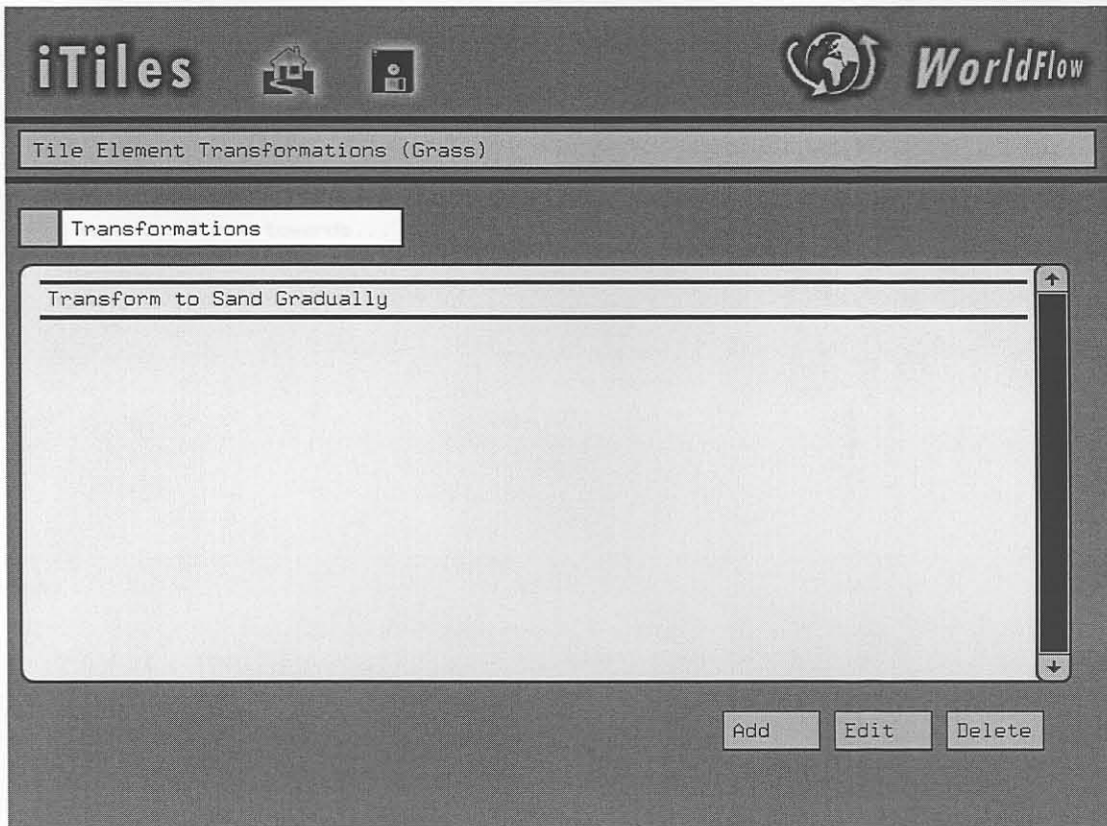


Figure 65. Tile element transformations list of a tile element (iTiles World Flow tool screen)

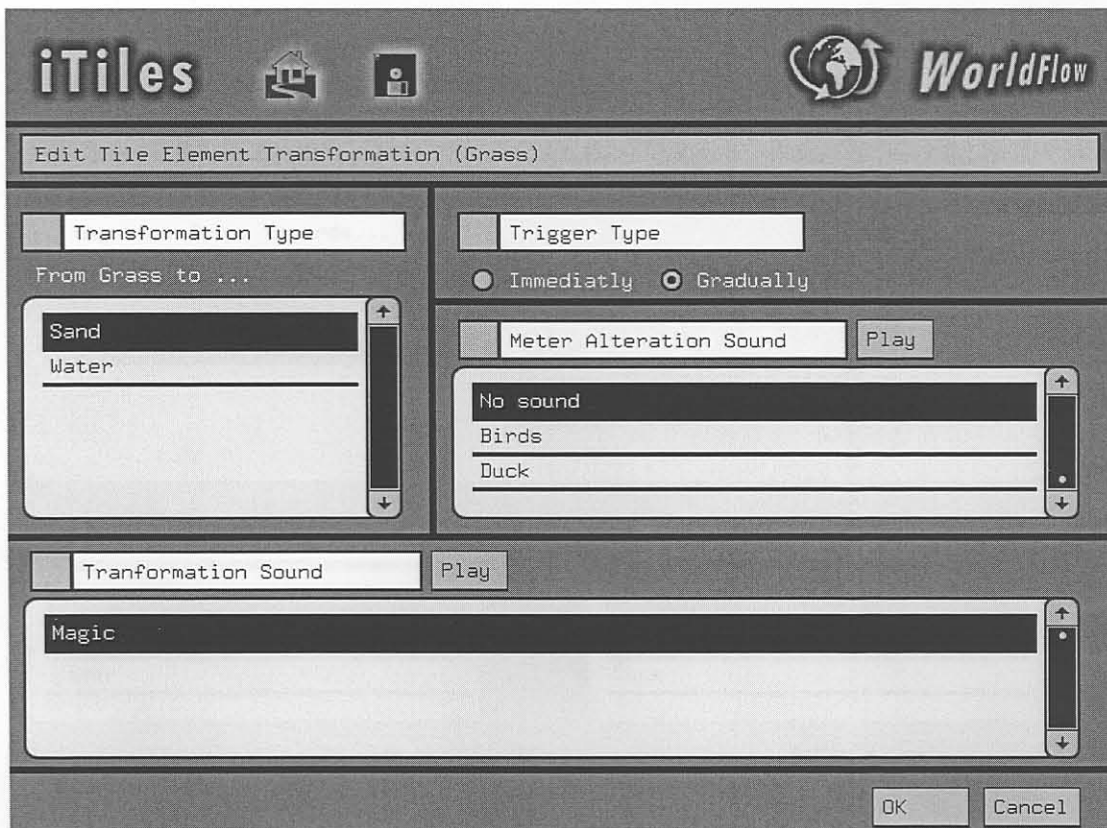


Figure 66. Tile element transformation of a tile element (iTiles World Flow tool screen)

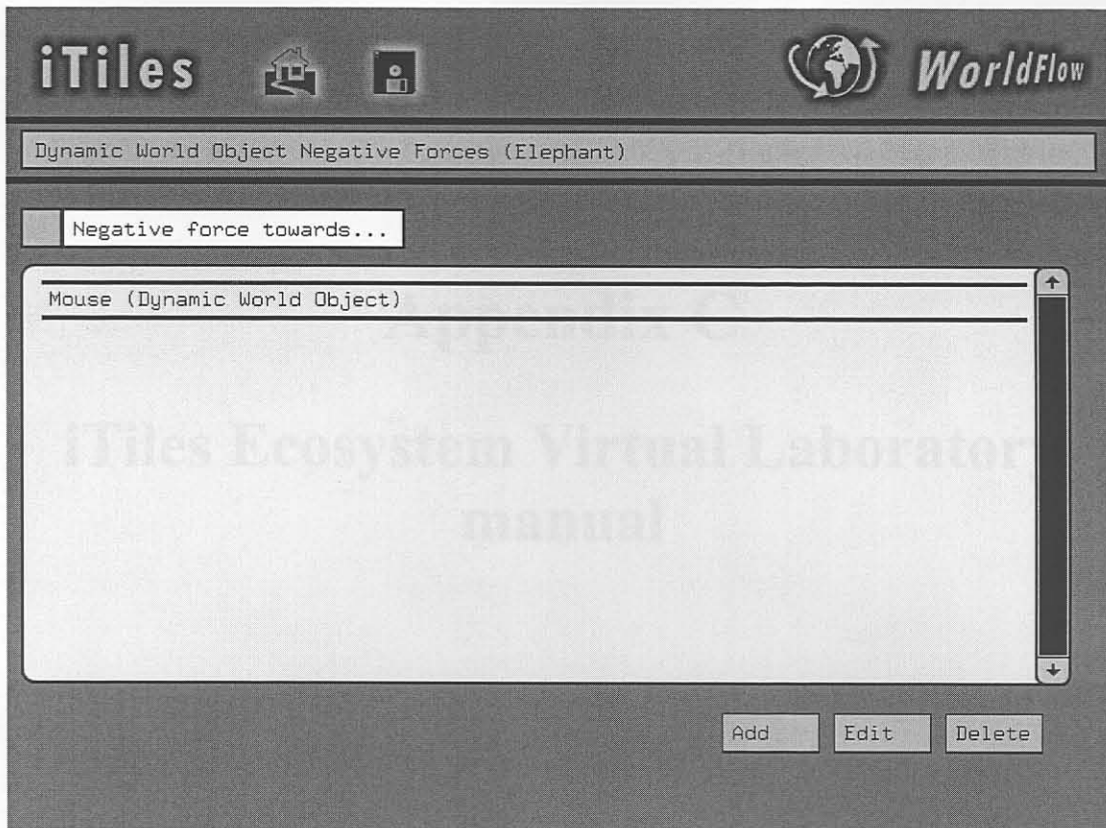


Figure 67. Negative forces list of a dynamic world object (iTiles World Flow tool screen)

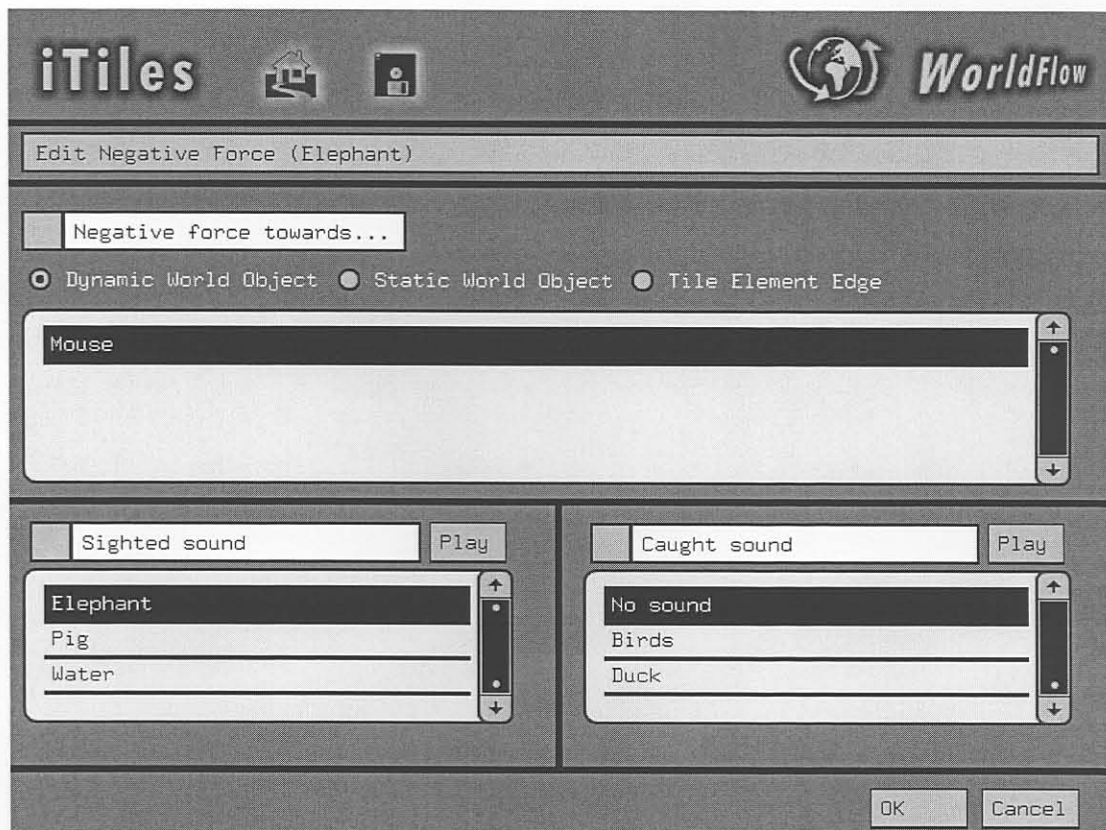


Figure 68. Negative force of a dynamic world object (iTiles World Flow tool screen)