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/** ----- 07 LAND COVER DATABASE 2 -----
/**
/** FILE NAME:          07_LandCover.txt
/** AUTHOR:            RENEE SCHICKER
/** SCRIPT CREATED:    15 DECEMBER 2008
/** LAST UPDATED/MODIFIED: 30 SEPTEMBER 2009
/**
/** The scripts may be supplied in a more readily useable format if the work is acknowledged
/** CONTACT:      Renee_Schicker@hotmail.com
/**
/** SCRIPT USED BY:      00_MASTER.txt
/** USES THE SCRIPT:     CheckProgEdit.txt          (CREATED: 02 MARCH 2009)
/**
/** INPUT COVERS:
/**      lc_ni_nzmg      D:\renee_GIS\input_data\lc_ni_nzmg
/**      DEM_Bnd         D:\Renee_GIS\Output_data\Organised\03_DEM\DEM_Bnd
/**
/** OUTPUT COVER:        W_Land_Cover
/** OUTPUT GRID:         LCDB2Grid
/** TEMP. COVERS:        region_lc          reg_lc_copy          landcovtest
/**
/** FUNCTIONS USED:      &IF &THEN          [EXIST]          KILL
/**                      COPY              ADDITEM          &RUN
/**                      EDITCOVER (EC)     EDITFEATURE (EF)    SELECT
/**                      CALCULATE          &TYPE            SAVE
/**                      QUIT (Q)           DISSOLVE          &RETURN
/**
/** PURPOSE:             Clip input data to regional area.
/**                      To simplify the classifications (and reduce the number of classes
/**                      involved in the analysis) while still being technically correct.
/**                      It was decided that it would be more accurate to classify using the
/**                      higher order classification given in the LCDB2 metadata.
/**                      Create raster from cover, then extract values from using point layer.
/**
/** HOW CLASSIFIED:      I have classified the LCDB2 Classes according to LCDB2 metadata
/**                      table 1st order class categories refer to LCDB2 Class Table.pdf
/**
/** CLASSES MADE:                CODE_NUM assigned (LCcodeNum)
/**      Water Bodies              0
/**      Artificial Surfaces        1
/**      Bare or Lightly Vegetated Surfaces 2
/**      Cropland                   3
/**      Grassland                  4
/**      Sedgeland and Saltmarsh    5
/**      Forest                     6
/**      Shrub and Shrubland        7
/**
/** ..... HISTORY.....
/** 15 DECEMBER 2008      5b_Slc(LCDB2).txt created. 3_clip.txt individual clip script created
/**                      specifically to be run from a master script as part of the processing
/**                      of parameters for Waikato region. Important to check input exists

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/** before processing.
/** 02 MARCH 2009 Added &RUN CheckProgEdit.txt instead of having to rewrite that
/** process each time.
/** instead of 0_parent.txt.
/** 12 MARCH 2009 Updated and renamed 07_Smpl_LCDB2.txt (from 5b_Slc(LCDB2).txt).
/** 27 APRIL 2009 Check script is consistent with others, update script information.
/** Changed output names of covers from reg_lc_t1 to reg_lc_copy,
/** and l_c_test to W_Land_Cover.
/** 30 APRIL 2009 First attempt to rasterise vector data using POLYGRID, as a result I
/** created the 15_Rasterise.txt script to convert Covers to Grids.
/** 06-10 MAY 2009 (in 15_Rasterise.txt) Added an additional step to rasterising text
/** type polygon data - pseudo code assigned to each parameter's class,
/** making water 0 where possible. This works now, just have to Add a
/** field to the GRID and make the text edits in ArcMap (this works so
/** long as the raster data is an integer type, can't access attribute table
/** if it is a float type).
/** 12 MAY 2009 Add &IF [EXIST -COVER] &THEN KILL for both region_lc and
/** reg_lc_copy
/** 20 MAY 2009 (04_Clip.txt) Separate Input data and output data directories, so
/** workspace is set to a separate output folder, so reduces the chance
/** of deleting input data by accident.
/** 10 JUNE 2009 Combined landcover parts from 04_Clip.txt and 15_Rasterise.txt
/** with 07_Smpl_LCDB2.txt. Now clip by DEM_Bnd instead of
/** Region_Bnd.
/** 30 SEPTEMBER 2009 Added spearate workspaces for each script, so have to add file path
/** to find input files, also corrected input and output sections.
/*****
/*****

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&CALL Clip
&CALL Reclass
&CALL Rasterise
&RETURN

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/*****
&ROUTINE Clip
&IF [EXIST region_lc -cover] &THEN KILL region_lc
CLIP D:\renee_GIS\input_data\lc_ni_nzmg
D:\Renee_GIS\Output_data\Organised\03_DEM\DEM_Bnd region_lc POLY 1
&TYPE landcover clipped
&RETURN
/*****
&ROUTINE Reclass
&IF [EXIST reg_lc_copy -cover] &THEN KILL reg_lc_copy ALL
COPY region_lc reg_lc_copy
ADDITEM reg_lc_copy.pat reg_lc_copy.pat class_name 50 15 c
&RUN d:\renee_gis\scripts\CheckProgEdit.txt /* Need to use ArcEdit so run the script to do this

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EC reg_lc_copy /* Edit Coverage
EF polygon /* Edit Feature
SELECT all

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CALCULATE class_name = "

/*..... ARTIFICIAL SURFACES.....

/* NZ LCDB2 class that fall under the 1st order class of Artificial Surfaces

&TYPE calculating Artificial Surfaces...

SELECT for LCDB2CLASS = 1

/* Built-up Area

CALCULATE class_name = "Artificial Surfaces

SELECT for LCDB2CLASS = 2

/* Urban Parkland/ Open Space

CALCULATE class_name = "Artificial Surfaces

SELECT for LCDB2CLASS = 3

/* Surface Mine

CALCULATE class_name = "Artificial Surfaces

SELECT for LCDB2CLASS = 4

/* Dump

CALCULATE class_name = "Artificial Surfaces

SELECT for LCDB2CLASS = 5

/* Transport Infrastructure

CALCULATE class_name = "Artificial Surfaces

&TYPE Artificial Surfaces calculated

/*..... BARE OR LIGHTLY VEGETATED SURFACES.....

/* NZ LCDB2 class that fall under the 1st order class of Bare or Lightly Vegetated Surfaces

&TYPE calculating Bare or Lightly Vegetated Surfaces...

SELECT for LCDB2CLASS = 10

/* Coastal Sand and Gravel

CALCULATE class_name = "Bare or Lightly Vegetated Surfaces

SELECT for LCDB2CLASS = 11

/* River and Lakeshore Gravel and Rock

CALCULATE class_name = "Bare or Lightly Vegetated Surfaces

SELECT for LCDB2CLASS = 12

/* Landslide

CALCULATE class_name = "Bare or Lightly Vegetated Surfaces

SELECT for LCDB2CLASS = 13

/* Alpine Gravel and Rock

CALCULATE class_name = "Bare or Lightly Vegetated Surfaces

SELECT for LCDB2CLASS = 14

/* Permanent Snow and Ice

CALCULATE class_name = "Bare or Lightly Vegetated Surfaces

SELECT for LCDB2CLASS = 15

/* Alpine Grass-/Herbfield

CALCULATE class_name = "Bare or Lightly Vegetated Surfaces

&TYPE Bare or Lightly Vegetated Surfaces calculated

/*..... WATER BODIES.....

&TYPE calculating Water Bodies...

SELECT for LCDB2CLASS = 20

/* Lake and Pond

CALCULATE class_name = "Water Bodies

SELECT for LCDB2CLASS = 21

/* River

CALCULATE class_name = "Water Bodies

SELECT for LCDB2CLASS = 22

/* Estuarine Open Water

CALCULATE class_name = "Water Bodies

&TYPE Water Bodies calculated

/*..... CROPLAND.....

/* NZ LCDB2 class that fall under the 1st order class of Cropland

&TYPE calculating Cropland...

SELECT for LCDB2CLASSs = 30	/* Short-rotation Cropland
CALCULATE class_name = "Cropland	
SELECT for LCDB2CLASS = 31	/* Vineyard
CALCULATE class_name = "Cropland	
SELECT for LCDB2CLASS = 32	/* Orchard and other Perennial Crops
CALCULATE class_name = "Cropland	
&TYPE Cropland calculated	
/* GRASSLAND.....	
&TYPE calculating Grassland...	
SELECT for LCDB2CLASS = 40	/* High Producing Exotic Grassland
CALCULATE class_name = "Grassland	
SELECT for LCDB2CLASS = 41	/* Low Producing Grassland
CALCULATE class_name = "Grassland	
SELECT for LCDB2CLASS = 43	/* Tall Tussock Grassland
CALCULATE class_name = "Grassland	
SELECT for LCDB2CLASS = 44	/* Depleted Tussock Grassland
CALCULATE class_name = "Grassland	
&TYPE Grassland calculated	
/* SEDGELAND AND SALTMARSH.....	
&TYPE calculating Sedgeland and Saltmarsh...	
SELECT for LCDB2CLASS = 45	/* Herbaceous Freshwater Vegetation
CALCULATE class_name = "Sedgeland and Saltmarsh	
SELECT for LCDB2CLASS = 46	/* Herbaceous Saline Vegetation
CALCULATE class_name = "Sedgeland and Saltmarsh	
SELECT for LCDB2CLASS = 47	/* Flaxland
CALCULATE class_name = "Sedgeland and Saltmarsh	
&TYPE Sedgeland and Saltmarsh calculated	
/* SHRUB AND SHRUBLAND.....	
&TYPE calculating Shrub and Shrubland...	
SELECT for LCDB2CLASS = 50	/* Fernland
CALCULATE class_name = "Shrub and Shrubland	
SELECT for LCDB2CLASS = 51	/* Gorse and Broom
CALCULATE class_name = "Shrub and Shrubland	
SELECT for LCDB2CLASS = 52	/* Manuka and or Kanuka
CALCULATE class_name = "Shrub and Shrubland	
SELECT for LCDB2CLASS = 53	/* Matagouri
CALCULATE class_name = "Shrub and Shrubland	
SELECT for LCDB2CLASS = 54	/* Broadleaved Indigenous Hardwoods
CALCULATE class_name = "Shrub and Shrubland	
SELECT for LCDB2CLASS = 55	/* Sub Alpine Shrubland
CALCULATE class_name = "Shrub and Shrubland	
SELECT for LCDB2CLASS = 56	/* Mixed Exotic Shrubland
CALCULATE class_name = "Shrub and Shrubland	
SELECT for LCDB2CLASS = 57	/* Grey Scrub
CALCULATE class_name = "Shrub and Shrubland	

&TYPE Shrub and Shrubland calculated

/*..... FOREST.....
&TYPE calculating Forest...

SELECT for LCDB2CLASS = 61	/* Major Shelterbelts
CALCULATE class_name = "Forest	
SELECT for LCDB2CLASS = 62	/* Afforestation (not imaged)
CALCULATE class_name = "Forest	
SELECT for LCDB2CLASS = 63	/* Afforestation (imaged, post LCDB1)
CALCULATE class_name = "Forest	
SELECT for LCDB2CLASS = 64	/*Forest Harvested
CALCULATE class_name = "Forest	
SELECT for LCDB2CLASS = 65	/*Pine Forest - Open Canopy
CALCULATE class_name = "Forest	
SELECT for LCDB2CLASS = 66	/* Pine Forest - Closed Canopy
CALCULATE class_name = "Forest	
SELECT for LCDB2CLASS = 67	/* Other Exotic Forest
CALCULATE class_name = "Forest	
SELECT for LCDB2CLASS = 68	/* Deciduous Hardwoods
CALCULATE class_name = "Forest	
SELECT for LCDB2CLASS = 69	/*Indigenous Forest
CALCULATE class_name = "Forest	
SELECT for LCDB2CLASS = 70	/* Mangrove
CALCULATE class_name = "Forest	

&TYPE Forest calculated

&TYPE All categories have been simplified

SAVE

Q

/*.....

&IF [EXIST W_Land_Cover -COVER] &THEN KILL W_Land_Cover ALL
/* dissolve neighbouring similar polygons
DISSOLVE reg_lc_copy W_Land_Cover class_name POLY

&IF [EXIST reg_lc_copy -COVER] &THEN KILL reg_lc_copy ALL
&IF [EXIST region_lc -COVER] &THEN KILL region_lc ALL

&RETURN

/******

&ROUTINE Rasterise
&IF [EXIST landcovtest -COVER] &THEN KILL landcovtest
COPY W_Land_Cover landcovtest
DROPITEM landcovtest.pat landcovtest.pat LCclassNum
ADDITEM landcovtest.pat landcovtest.pat LCclassNum 5 5 I
&RUN d:\renee_gis\scripts\CheckProgEdit.txt

EC landcovtest

EF polygon

```
SELECT for class_name = 'Water Bodies'  
CALCULATE LCclassNum = 0
```

```
SELECT for class_name = 'Artificial Surfaces'  
CALCULATE LCclassNum = 1
```

```
SELECT for class_name = 'Bare or Lightly Vegetated Surfaces'  
CALCULATE LCclassNum = 2
```

```
SELECT for class_name = 'Cropland'  
CALCULATE LCclassNum = 3
```

```
SELECT for class_name = 'Grassland'  
CALCULATE LCclassNum = 4
```

```
SELECT for class_name = 'Sedgeland and Saltmarsh'  
CALCULATE LCclassNum = 5
```

```
SELECT for class_name = 'Forest'  
CALCULATE LCclassNum = 6
```

```
SELECT for class_name = 'Shrub and Shrubland'  
CALCULATE LCclassNum = 7
```

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SAVE
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Q
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&IF [EXIST LCDB2Grid -GRID] &THEN KILL LCDB2Grid ALL  
POLYGRID landcovtest LCDB2Grid LCclassNum
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&RETURN
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