

```

/*****
**
/** SCRIPT:      LR_200_Class.txt
/** CREATED BY:  RENEE SCHICKER
/** DATE CREATED: 08 DECEMBER 2009
/** DATE MODIFIED:
/**
/** SCRIPTS USED: Checkproggrid.txt      D:\renee_gis\scripts\checkproggrid.txt
/**
/** GRIDS USED:
/**      MyBnds      D:\Renee_gis\output_data\Organised\03_DEM\MyBnds
/**      logiteq2int
/**      D:\Renee_GIS\Output_data\Organised\15_Multi_Reg\200m_set1\logiteq2int
/**
/** COVERS MADE: Set1NBCov      Set1NB LICov      Set1EICov      Set1EILICov
/**              Set1GICov      Set1GILICov      Set1QCov      Set1QLICov
/**              Set1DICov      Set1DILICov
/**
/** PURPOSE:      Classify the output of the logistic regression result
/**                (using the integer grid version of set 1 at 200 m) using
/**                five different classification techniques available in ArcMap.
/**                Natural Breaks (Jenks), Equal Interval, Geometric Interval,
/**                Quantile, and Defined Interval (set at 20%) have been selected
/**                for analysis. Once classified grids have been created these are
/**                converted to cover then unioned with the landslide inventory.
/**                The unioned layer can then be submitted to zonal statistic in
/**                ArcMap to determine the area for each combination of susceptibility
/**                class and presence or absence of landslides.
/**                The conversion of the grid in continuous integer format to cover
/**                does not always work (sometimes too much information to handle) as
/**                pixel size is 25 m and there is over 38 million in the Waikato region
/**                taking on values between 1 and 100.
/**
/** NOTE:          The workspace is set at the start of each of the two primary routines
/**                So for set 1 all files will be saved to:
/**                D:\Renee_GIS\Output_data\Organised\15_Multi_Reg\200m_set1
/**
/** WHAT TO DO:    Use the break values obtained from applying the different
/**                classifications to the continuous integer grid output in ArcMap
/**                in the section below (SET CLASS BREAKS AS VARIABLES).
/**                Set the PROCESSES TO CALL to run set 1.
/**
/** ----- HISTORY -----
/**      08 DECEMBER 2009      Script created and explained
/*****

/*****
/**
/** SET CLASS BREAKS AS VARIABLES
/*****

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/* Four breaks are used to determine the five classes VL (1), L (2), M (3), H (4), VH (5)
/* which are equivalent to Very Low, Low, Moderate, High, Very High.
/* Breaks are in ascending order (Lowest to highest 1 - 4)
/* If ArcMap gave breaks with decimals for an integer grid, round down.
/* Defined Intervals have been set in intervals of 20% later in the script.
/*
/* Understanding the variables:
/*
/*      S1 = Set 1      NB = Natural Breaks      B1 = Break 1
/*      EI = Equal Interval      B2 = Break 2
/*      GI = Geometric Interval      B3 = Break 3
/*      Q = Quantile      B4 = Break 4
/**      DI = Defined Interval
/*
/*~~~~~ Natural Breaks (NB) ~~~~~
/* SET 1:
&SETVAR .S1_NB_B1 = 27
&SETVAR .S1_NB_B2 = 40
&SETVAR .S1_NB_B3 = 55
&SETVAR .S1_NB_B4 = 72

/*~~~~~ Equal Interval (EI) ~~~~~
/* SET 1:
&SETVAR .S1_EI_B1 = 27
&SETVAR .S1_EI_B2 = 45
&SETVAR .S1_EI_B3 = 63
&SETVAR .S1_EI_B4 = 81

/*~~~~~ Geometric Interval (GI) ~~~~~
/* SET 1:
&SETVAR .S1_GI_B1 = 22
&SETVAR .S1_GI_B2 = 30
&SETVAR .S1_GI_B3 = 43
&SETVAR .S1_GI_B4 = 64

/*~~~~~ Quantile (Q) ~~~~~
/* SET 1:
&SETVAR .S1_Q_B1 = 25
&SETVAR .S1_Q_B2 = 32
&SETVAR .S1_Q_B3 = 43
&SETVAR .S1_Q_B4 = 60

/*****
/**      PROCESSES TO CALL
/*****

&CALL Set_1
&CALL OutputSet1

&RETURN

```

```

/*****
/*
PRIMARY ROUTINES
*****/

```

```
&ROUTINE Set_1
```

```
Workspace D:\Renee_GIS\Output_data\Organised\15_Multi_Reg\200m_set1
```

```
&TYPE SET 1 NATURAL BREAKS
```

```
&TYPE
```

```
&SETVAR .B1 = %.S1_NB_B1%
```

```
&SETVAR .B2 = %.S1_NB_B2%
```

```
&SETVAR .B3 = %.S1_NB_B3%
```

```
&SETVAR .B4 = %.S1_NB_B4%
```

```
&CALL Classify
```

```
&IF [EXIST Set1NBCov -COVER] &THEN KILL Set1NBCov
```

```
&IF [EXIST Set1NB LICov -COVER] &THEN KILL Set1NB LICov
```

```
GRIDPOLY LSIClass Set1NBCov
```

```
KILL LSIClass
```

```
UNION D:\Renee_GIS\Output_data\Organised\04_Inventory\li_extent Set1NBCov Set1NB LICov
```

```
&TYPE SET 1 EQUAL INTERVAL
```

```
&TYPE
```

```
&SETVAR .B1 = %.S1_EI_B1%
```

```
&SETVAR .B2 = %.S1_EI_B2%
```

```
&SETVAR .B3 = %.S1_EI_B3%
```

```
&SETVAR .B4 = %.S1_EI_B4%
```

```
&CALL Classify
```

```
&IF [EXIST Set1EICov -COVER] &THEN KILL Set1EICov
```

```
&IF [EXIST Set1EILICov -COVER] &THEN KILL Set1EILICov
```

```
GRIDPOLY LSIClass Set1EICov
```

```
KILL LSIClass
```

```
UNION D:\Renee_GIS\Output_data\Organised\04_Inventory\li_extent Set1EICov Set1EILICov
```

```
&TYPE SET 1 GEOMETRIC INTERVAL
```

```
&TYPE
```

```
&SETVAR .B1 = %.S1_GI_B1%
```

```
&SETVAR .B2 = %.S1_GI_B2%
```

```
&SETVAR .B3 = %.S1_GI_B3%
```

```
&SETVAR .B4 = %.S1_GI_B4%
```

```
&CALL Classify
```

```
&IF [EXIST Set1GICov -COVER] &THEN KILL Set1GICov
```

```
&IF [EXIST Set1GILICov -COVER] &THEN KILL Set1GILICov
```

```
GRIDPOLY LSIClass Set1GICov
```

```
KILL LSIClass
```

```
UNION D:\Renee_GIS\Output_data\Organised\04_Inventory\li_extent Set1GICov Set1GILICov
```

```
&TYPE SET 1 QUANTILE
```

```
&TYPE
```

```
/* SET breaks here (in ascending order)
```

```

&SETVAR .B1 = %.S1_Q_B1%
&SETVAR .B2 = %.S1_Q_B2%
&SETVAR .B3 = %.S1_Q_B3%
&SETVAR .B4 = %.S1_Q_B4%
&CALL Classify
&IF [EXIST Set1QCov -COVER] &THEN KILL Set1QCov
&IF [EXIST Set1QLICov -COVER] &THEN KILL Set1QLICov
GRIDPOLY LSIClass Set1QCov
KILL LSIClass
UNION D:\Renee_GIS\Output_data\Organised\04_Inventory\li_extent Set1QCov Set1QLICov

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```

&TYPE SET 1 DEFINED INTERVAL: 20 percent
&TYPE
/* SET breaks here (in ascending order)
&SETVAR .B1 = 20
&SETVAR .B2 = 40
&SETVAR .B3 = 60
&SETVAR .B4 = 80
&CALL Classify
&IF [EXIST Set1DICov -COVER] &THEN KILL Set1DICov
&IF [EXIST Set1DILICov -COVER] &THEN KILL Set1DILICov
GRIDPOLY LSIClass Set1DICov
KILL LSIClass
UNION D:\Renee_GIS\Output_data\Organised\04_Inventory\li_extent Set1DICov Set1DILICov
&RETURN

```

```

/*~~~~~
&ROUTINE OutputSet1
Workspace D:\Renee_GIS\Output_data\Organised\15_Multi_Reg\200m_set1

```

```

&TYPE SET 1 NATURAL BREAKS
&TYPE
&SETVAR .B1 = %.S1_NB_B1%
&SETVAR .B2 = %.S1_NB_B2%
&SETVAR .B3 = %.S1_NB_B3%
&SETVAR .B4 = %.S1_NB_B4%
&CALL Classify
&RETURN

```

```

/*****
/**
SECONDARY ROUTINE
/*****
&ROUTINE Classify
&CALL Setup_Grid
VL = CON(logiteq2int le %.B1%, 1, 0)
L = CON(logiteq2int gt %.B1% and logiteq2int le %.B2%, 2, 0)
M = CON(logiteq2int gt %.B2% and logiteq2int le %.B3%, 3, 0)
H = CON(logiteq2int gt %.B3% and logiteq2int le %.B4%, 4, 0)
VH = CON(logiteq2int gt %.B4%, 5, 0)
LSIClass = (VL + L + M + H + VH)

```

```
KILL VL
KILL L
KILL M
KILL H
KILL VH
SETMASK off
Q
&RETURN
/*****
/**
                                TERTIARY ROUTINE
/*****
&ROUTINE Setup_Grid
&RUN D:\renee_gis\scripts\checkproggrid.txt
&TYPE set window to MyBnds...
SETWINDOW D:\Renee_gis\output_data\Organised\03_DEM\MyBnds
&TYPE Set mask to MyBnds...
SETMASK D:\Renee_gis\output_data\Organised\03_DEM\MyBnds
&TYPE Mask Set
&RETURN
```