**LGV – Processing for Land Cover and Change Maps**

**2005/2013 Land Cover**

* Majority Filter
  + Input: LC map (2005 or 2013)
  + Number of neighbors = EIGHT
  + Replacement threshold = HALF

**Change Map**

1. **Determine locations where 2005 land cover is/is not the same as 2013**

* *Raster Calculator*
  + LC\_20050401 != LC\_20130401
  + Output:
    - “truechange”
    - 0 = stable
    - 1 = map-based change

1. **Find number of time changed for non-stable pixels**

* *Raster Calculator*
  + truechange \* ChangeMapNum
  + Output:
    - “numtruechange “
    - Number of times a pixel changed 2005 – 2013

1. **Identify pixels that show more than two model-based changes from 2005-2013 (highly unlikely to be real, sustained LC change in just 8 years – Probably variable classes like ag)**

* *Raster Calculator*
  + Numtruechange <= 2
  + Output:
* “onechange”
* 0 = pixel changed more than 2x
* 1 = pixel changed 0 or 1 time (reasonable change)

1. **Find true change locations that have changed 1 time 2005-2013**

* *Raster Calculator*
* Truechange \* onechange
* Output:
* “reasonchange”
* Locations where change is reasonable
* 0 = stable
* 1 = 1 change

1. **Filter pixels that have changed 1 times to remove speckle – First pass (likely overestimates true change)**

* *Majority Filter*
  + Input: reasonchange raster
  + Number of neighbors = EIGHT
  + Replacement threshold = MAJORITY

1. **Find locations that were Agriculture, Bare or Herb in 2005/2013**

* *Reclassify*
  + Use original LC rasters (0401)
  + Disturbed (0), Bare (1), Herb (4), and Ag (5) = 1 (true)
  + Rest of classes = 0 (false)
* Output:
  + 2005agbargra
  + 2013agbargra
* *Raster calculator*
  + 2005agbargra \* 2013 agbargra
* Output:
  + Sta\_agbargra
  + 0 = Other
  + 1 = Stable Ag, Bare, Grassland
  + (likely that any changes in these areas are spurious)

1. **Remove pixels that were Ag, Grassland or Bare in 2005 and 2013 from change map**

* *Reclassify*
  + Input: Sta\_agbargra
  + 0 = ag, bare or grassland in 2005/2013
  + 1 = other
  + Output:
    - Agbargra\_Mask
* *Raster Calculator*
  + Agbargra\_mask \* reasonchange
  + Output:
    - reasonchange2
    - Pix

1. **Filter non-ag/bare/grassland change to remove speckle – First pass (likely overestimates true change)**

* *Majority Filter*
  + - Input: reasonchange2 raster
    - Number of neighbors = EIGHT
    - Replacement threshold = MAJORITY
    - Output:
* Reasonfil2
* 0 = Stable
* 1 = Change
* Note : Does not address “unclassified” in 2013