DESCRIPTION OF LAYER “crop\_wetland.tif”

The original layer “lc\_suit\_fin1” was created by the Nature Conservancy to provide a conservative estimate of crops that may provide habitat value for birds. The metadata for the “lc\_suit\_fin1” layer are as follows:

*From Rodd Kelsey at TNC via email*

*Just as a reminder of what this is. In a nutshell it is a very conservative estimate of what suitable crops are available across region based on Cropscape data from 2007-2014 with the following rules (developed to deal with inaccuracies of land cover assignment by Cropscape and dynamic nature of agriculture generally):*

1. *Put all crop types into crop categories (rice, grain, row, field crop, vineyard/orchard, other)*
2. *Assign all pixels that were characterized by Cropscape as one of the categories that could be suitable for migratory waterbird management in at least 7/8 years into “Suitable” and all others into “Unsuitable”. Suitable included all grain crops, field crops, and row crops.*
3. *Assign each suitable pixel to a crop category (rice, grain, row, field crop) based on what it was in the majority of those 8 years.*
4. *This ends up with an underestimate of total acres, but does reflect what areas are reliably a suitable crop and gives a conservative estimate of what is likely available in any given year.*

*From Chris McColl at TNC via email:*

*A couple additional points to include along with Rodd’s info is the definition of “Suitable-unassigned”. This was a set of pixels that were originally ‘suitable’ however when assigning a majority crop type the ArcGIS ‘Majority’ function has the habitat of dropping data that results in a ‘tie’ (e.g. 4 yrs corn 4 yrs of alfalfa). These dropped pixels were picked back up in the model and incorporated as “suitable-assigned”. You will also notice a lot of land delineated as unsuitable that is composed of the natural landscapes (e.g. shrublands, forest lands, etc.) and urban. These types were determined to be unsuitable because the focus of the analysis was on Ag lands that could be used for future conservation applications. Finally, unlike previous iterations of this analysis the dataset has not had any filters applied to remove isolated pixels nor slope constraints.*

There are some problems with the above explanation, such as, how were orchards, grass/pasture, alfalfa, and importantly wetlands designated? How would three way combinations be treated (e.g. a pixel that is 2 years corn, 3 years rice, and 2 years grain)? Emails sent in March 2018 didn’t clarify these finer points. Given their lesser importance, these questions were dropped, with the exception of the re-categorization of the wetlands class.

The Ducks Unlimited (DU) layer “CV\_Seasonal\_SemiPermenant\_Wetlands.shp” provides classification of rice and seasonal, semi-permanent, and treated wetlands. This was viewed as a more conservative and possibly more accurate accounting of wetlands providing bird habitat. After resampling the DU and TNC layers to be 30m pixels aligned with the Landsat water data, wetlands in the DU layer were “burned into” the TNC layer creating four types of wetlands: seasonal, semi-permanent, treated, and TNC/other.

Next, I combined some land categories. Because of its lesser value to birds, I combined field, row, and grain crops into a single category. I also added vineyards and orchards to the “unsuitable” category. When I was done, that left the following land class types:

0 – Unsuitable (combination of TNC unsuitable and vineyard)

1 - Grass/Pasture

3 - Corn

5 - Grain plus (combination of TNC field crop, row crop, and grain)

11 - Alfalfa

12 - Rice

20 - Wetland in TNC layer (wetlands in TNC layer that were not in the DU wetlands footprint)

30 - Seasonal wetland from DU layer

40 - Semi-permanent wetland from DU layer

50 - Treated wetland in from DU layer

99 - "Other category" from TNC (see Chris McColl’s comment above)