



# Appendix I

## Cropland Evaluation Matrix

**Memorandum**

January 12, 2000

To: DeSoto NWR Biological Staff  
 From: Marco Buske, FWB

Subject: Evaluating Refuge Cropland for CCP Purposes

- i Always think in terms of **KISS** ---- Keep It Simple, Stupid ---- when applying evaluation criteria to each crop management unit designated on the accompanying GIS map.
- i Individual crop fields were usually combined into crop management units. Each management unit corresponds to a cluster of individual fields that makeup each component of the 3- or 6-year biological crop rotation or 2-year conventional crop rotation. In some instances single fields are designated as management units. This is usually the result of a field's location relative to other fields. The field is relatively isolated either spatially or has characteristics that makes it distinctly different from other nearby crop fields.
- i Assess each crop management unit within the context of a temporal "**snapshot**" for the purposes of this evaluation. Do not dwell on future possibilities and permutations. Focus on what exists now and within the context of designated crop management units. Again, **Keep It Simple**.

Conditions Favoring Continued Cropping of Designated Crop Management Units	Evaluation Criteria
<b>Agronomic Value</b>	
Inherent Productivity Score 1 point	Fields predominantly containing soil map units with yield estimates or CSRs in the top quartile are considered highly productive and useful agronomically. Compare modern soil survey crop yield estimates and/or corn suitability ratings of the different soil map units.
Research Score 1 point	Crop management units predominantly containing soil map units with comparable characteristics are useful for field scale research. Assess uniformity of soil map unit characteristics using modern soil survey tables, soil descriptions and aerial photos.



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Drainage Score 1 point	Soils with moderate to rapid permeability (i.e., good internal drainage characteristics) are well suited for sweet clover or alfalfa culture, thus the biological crop rotation is well adapted to such sites. Conversely, soils with poor drainage characteristics (i.e., slow permeability) are not well suited. Use modern soil survey to determine soil permeability of soil map units within crop management units.
Depradation Score 2 points	Crop management units on the refuge's boundary will likely reduce white-tail deer crop depradation on adjacent private land.
<b>Public Use Value</b>	
Viewing Wildlife Score 2 points	Crops fields that border or are visually accessible from public use roads within the refuge.
Hunting Score 2 points each for waterfowl and deer hunting	Crop management units that lie within current waterfowl and deer hunting zones. Consider separately waterfowl and deer hunting.
Education Score 2 points	Crop management units easily accessible by tour buses, vans, etc. and are likely to be used by touring groups for guided or self-guided tours.
<b>Wildlife Value</b>	
Wildlife Foraging Score 2 points each for migratory and resident wildlife	Crop Management units with a history of <b>frequent</b> migratory or resident wildlife foraging. Consider separately migratory and resident wildlife.
Wetland Potential Score 2 points	Crop management units do not contain soil map units and/or topography conducive to wetland development. Borders of units assessed differently than within the units?
Landscape Fragmentation Score 2 points	Decreasing the edge effect reduces landscape fragmentation. Reverting a crop management unit to an adjacent non cropland habitat does not significantly reduce the amount of edge? Significant reduction would be a 51% decrease of habitat edge in the affected area. Use GIS to measure habitat perimeters.
Wildlife Cover Score 1 point for 6-yr crop rotation	Provides wildlife loafing or nesting habitat at least part of the year. Partial credit given to crop management units containing semi-permanent ground cover such as sweet clover, alfalfa, or milo left standing to support winter foraging.
<b>New Management Units vs. Expanding Existing Units</b> Score 2 points	Conversion of a crop management unit to an alternative habitat would create a new/additional noncrop management unit.

Crop Management Unit	GS2	Bu1	Bu2	Bu3	Bu4	Bu5	Bu6	Jo1	Jo2	Jo3	Jo4	Jo5	Jo6	Jo7	Me6
Unit Acres	33	97	100	54	65	70	183	90	25	51	24	14	31	17	90
<b>Agronomic</b>															
Relatively high inherent productivity	X	X		X	X	X	X	X	X				X		X
Well suited for field scale research							X	X	X		X		X	X	
Moderately well to well drained		X		X	X	X	X	X	X				X		X
May influence depredation in private cropland bordering refuge	X							X		X	X			X	
<b>Public Use</b>															
Borders public use roads aiding wildlife viewing		X	X	X		X									X
Used for hunting.....															
Waterfowl		X	X				X								X
Deer	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Good location for educational tours		X	X	X	X	X	X								X
<b>Habitat and/or Wildlife Value</b>															
Wildlife frequently observed feeding in fields.....															
Migratory		X	X				X								X
Resident	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Limited potential for wetland development	X	X	X	X	X	X	X	X	X			X	X		X
Does not contribute substantially to landscape fragmentation	X	X	X			X		X		X					X
Provides wildlife cover					X										
Unit will not add habitat to existing noncrop management units	X	X	X			X		X							X
<b>Unit Score</b>	<b>11</b>	<b>16</b>	<b>14</b>	<b>10</b>	<b>9</b>	<b>14</b>	<b>11</b>	<b>13</b>	<b>7</b>	<b>6</b>	<b>5</b>	<b>4</b>	<b>7</b>	<b>5</b>	<b>16</b>

Crop Management Unit	Sc1	Sc2	Sc3	Sc4	Me1	Me2	Me3	Me4	Me5	Li1	Li2	Li3	RS1	RS2	GS1	
Unit Acres	164	36	21	64	35	47	29	36	41	137	88	19	107	161	56	
<b>Agronomic</b>																
Relatively high inherent productivity	X	X		X	X	X					X	X		X		
Well suited for field scale research	X	X	X	X	X	X	X						X		X	
Moderately well to well drained	X	X		X	X	X		X			X	X		X		
May influence depredation in private cropland bordering refuge	X	X					X	X	X	X	X	X			X	
<b>Public Use</b>																
Borders public use roads aiding wildlife viewing	X		X							X			X			
Used for hunting.....																
Waterfowl	X			X	X	X	X			X			X	X		
Deer											X	X	X	X	X	
Good location for educational tours	X		X	X	X	X	X			X			X	X		
<b>Habitat and/or Wildlife Value</b>																
Wildlife frequently observed feeding in fields.....																
Migratory	X		X	X	X	X	X			X			X	X		
Resident	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Limited potential for wetland development	X	X	X	X				X	X		X	X	X	X	X	
Does not contribute substantially to landscape fragmentation	X	X		X	X	X		X			X	X	X	X		
Provides wildlife cover								X				X				
Unit will not add habitat to existing noncrop management units	X	X		X	X	X		X		X			X	X		
<b>Unit Score</b>	<b>18</b>	<b>12</b>	<b>9</b>	<b>14</b>	<b>12</b>	<b>12</b>	<b>8</b>	<b>11</b>	<b>5</b>	<b>11</b>	<b>10</b>	<b>11</b>	<b>15</b>	<b>14</b>	<b>7</b>	